# The United Field Theory - Answers to the World Question - Corrected Version

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This is the Second Issue of This Book.

Remark: Present physics caused on Schrödinger's wave function makes concepts of rotation areas of particles spatially (probability spheres). If there is no space when real particle is rotating, I do not take the veiled concept of an "orbital". I favor the concept "orbit" to be a circular line, but not a sphere. In the end of some pages, there is empty space for numbers' compatibility with German book. It is machine-translated from German into American English. I am working to look for the problems making it better.

## First part (The Book Arcus I, TBA I): THE THEORY AND ITS FIRST SOLUTIONS

Some parts of the hypotheses following the theoretical solutions are wrong. They were thoughts I tried to discover.

Better solutions you find in my works "TBA III, IV, V" of the years 2020 - 2021.

**Directory**
**Of the Constituents of the United Field Theory:**

**The Electrogravitation**

Theses of "The Book Arcus I"

Of the Theory: **The Electrogravitation**
United Field Theory

Arcus:
Scientific work of Unification of the Relativity Theory and the Quantum Mechanics, from 1986 to 1998

337 Pages, 15 Sources, 48 Literatures

I. The **Electrition** (the electromagnetism) and the **Gravitation** (the gravitomagnetism) are forming a universal unity – that is the **Electrogravitation** (electrogravitational magnetism).

II. Caused by *Oscillator Solution* of the General Relativity Theory, real functions of quanta can be described. These are the real particles: Cosms or Microcosms. The present "quantum mechanics" describe just the **wavequant**a as functions of movements of electromagnetic matter. In ignorance, it neglect the nature of the electrogravitational corpuscle. Instead of this consequence, it mixes up the corpuscle with the magnetic field. Our theory distinguishes consistently now **cosms** (these are primary quanta or corpuscles)and **wavequanta** (these are secondary quanta what aren't particles).

III. *General Relativity Theory* is giving solutions of functions of particles, so that they are able to be explained as a geometry of *cosms*. In opposite, radiation wavequanta, which were described as such a feature of "quanta" in the context of the "quantum mechanics" are nothing else than energetic particle equivalents.

IV. The *force of electrition* is the connection between the electrical cosms and anticosms (primary quanta and antiquanta) - and between the electrical wavequanta (photons).

V. In the same understanding but in causally contrary effect to the Electrition, we see the *gravitational force*. It is forming the connection between the heavy particles in their shape of gravitational cosms (primary quanta of gravitation) and between the gravitational wavequanta (fallons) as effects of movement of gravitational cosms in the gravitational vacuum of cosms and anticosms.

VI. *Strong (nuclear) and weak forces* are forming a unity, which is built from coupling constants of our theory, first $\alpha_1$ for the interaction of outside masses, second $\alpha_2$ for the interaction of outside masses with isolated masses and third $\alpha_3$ for the interaction of isolated masses, those cosms are involved by the reactions.

VII. In this respect, we give here the ***United Field Theory*** UFT as the Unity of **General Relativity Theory** of Albert Einstein (1879-1955) and of **Quantum Mechanics** of Max Planck(1858-1947).

Structure of "The Book ARCUS I, TBA I"

Theory:

**The Electrogravitation**

0. Short Explanation of the Basic Columns of the New Theory of All Material Fields

Theses of the existing opinion:

1. Universe would be open. Other states, one has to analyze.

2. The universe would have arisen from a “Big Bang”.

3. The Galaxies, which Doppler shift reference still would put down today by the spectral red shift and would have escaped after the so-called “Big Bang”.

4. The elementarity of the particles would lay at high energies next to the unstable particles. Science had to search for the origin of particles at the highest energy.

5. The cause of the world, also like coherences of the United Field Theory, would lay at higher dimensions, so at the fourth dimension that one thinks this has toe the time.

6. Matter would run from a “Black Hole” along a “Worm Hole” to a “White Hole”.

7. One admits to know nothing about the real mass, because one compares it just to a quantity respectively to a vacuum through what this idea is conveyed: The heavier elementary mass of a microcosm is more matter than the lighter mass.

8. The world wouldn’t be a hierarchical or an informational but more a coincidental system.

9. First, gaseous homogeneities would be distinctive in the beginning after the Big Bang when some systems were formed afterwards by chance.

10. The world is no longer clearly explicable since the quantum mechanics instead of the classic ideas of the bodies is supported by present physics. In addition, the relativity would break any imagination about waytime dilations and contractions. Vacuum of quantum mechanics would consist of uncertainty relations and would be just as incomprehensible. The statistics finally would show the reality of a world chaos.

Experimental and noticed results, which are on the way to disprove the above mentioned theses:

1. Hubble number is almost doubled. However, the time of the so-called "emergence" of the universal structures is falling to half of the original value. These unsolved problems of Big Bang theory and theories of star formation will make them sway.

2. No water was found on Jupiter. The theories of planet's formation become problematic.

3. The quarks should be the six atomic constituents of matter. Alone the search for the last so-called constituent proved after the top quark as flop because in the history of physics, never has been such a large fault of up to 500 % in the prediction of energy. At first, one thought of 30 to 50 GeV. Finally, one found an unknown particle at 174 GeV. Exactly there is the energy sum of intermediate bosons W and Z: 81.2 GeV + 92.5 GeV. It seems to be possible that there isn’t any particle but more a quantum leap inside the baryon. This conclusion is substantiated now after proving a particle at 1000 GeV/$c^2$ with an even larger mass. No quark has been proved. No third-charge has ever been proved. The complete quark theory is going to sway with that.

Conclusion: Three essential buildings from ideas to the "emergence" and to the cohesive strength of the matter start to fall. Scientists doubt about all their present constructions. A theory that organizes all the well-known facts is required. Here are the antitheses to this present opinion:

1. A priori, the universe is an inferred and oscillating system - a spherical oscillator. Its erection R corresponds to the Black Hole (General Relativity Theory) radius R and to the atomic effect quantum R (“quantum theory” or wave mechanics) through what the main theories are united. The universe appears spatially seen, as a number of pendulum of subworlds would oscillate with the same maximum elongation passing a middle dot area and forming the phenomena of this spherical world in the

same time. Smaller elongations of deeper stored subworlds stay on their upper rest point and wait until their time has come to go on their way back with all the other. That waiting time is the real lifetime of the substructures installed there in the meantime of universe oscillation time period. The medium of the universe consists of a stationary vacuum body, which is built from particle-antiparticle pairs and charge-anticharge pairs like an ocean of absolutely resting matter in the proximity of external zero energy. Waves rush through the vacuum always with vacuum velocity of light waves, equal like fast emitting and receiving bodies are moved relatively to vacuum and to each other. The inert bodies can never reach the light velocity in vacuum.

2. Instead of a Big Bang (one singularity), a huge number of local openings (evaporation) of Black White Holes (plurality) are existing from those some matter is installed in minimum state of entropy while the white state of these bodies - the anticollapse or evaporation - is running. After this process, the opened structures live and die, which were coming from inside out. In the end of all the experience of them, the matter those entropy was increasing will be packed back into Black White Holes by collapse (condensation) supported by radiation while their original state how it was before is black.

3. Galaxies rest after their installation in vacuum, and then they immediately begin to fall against each other because of the effect of their gravitation and space curvature. All the Black White Holes from the center of the vacuum universe are running next to vacuum velocity of light. Their evaporations are followed by red shift of spectrum relatively to another object while radiation is spreading out because the space is filled with matter out of a Black Hole state. It is a gravitational caused red shift by thinned matter while the time period of light emission. This function is linear and it agrees with the General Relativity Theory: With the world-radius, the wave-energy of the radiation is decreasing. Finally, every partial world builds up their own world radius, which is going to be united with the other world-radii into the universe radius. After the tour of the radiations in their own radiation cosmos, which are forcing their light to go back and their coming back to the initial point of their way, radii will be split again.

4. Elementarity of particles is just based on the construction of stable particles, for example, like protons, electrons, or stable neutrinos. If they will be destabilized by support of energy, so a variety of particle combinations of higher energy are formed out, but, which - even equally in, which decay channels - give finally back these particles here, which were stable from the start.

5. The world is one-dimensional in form of the coupled function of waytime. A particle always moves in a single dimension - in the movement of the original mass point. It describes an orbit coordinate with a time-coordinate. Way and time are inseparably at the same magnitude the only one dimension named movement. So besides the fiction at the coupling of several particles and their movements to the three-dimensional waytime space ($x, t_x, y, t_y, z, t_z$), any fourth coordinate doesn't exist at all, which should have been the time. Time is always bound to the respective way-coordinate. Consequently, the origin of the world comes from all world points from the first movement, which determine the following future. Additionally, the time like the way always run forward under these circumstances. A direct turning back on the absolutely same way line isn't given to the time line. Undoing way and time into two different dimensional changes is wrong historically seen.

6. The black and the white hole are one single system in our theory with the properties: being black or being white. Every particle represents a black white hole for an arbitrary microcosm or macrocosm. The oscillation of an arbitrary stable cosm is the reason of this (another word for cosmos: cosms). The sphere of the formation of its inner mass oscillates harmonically and undamped with light velocity. Larger spheres give such a smaller frequency relatively to their smaller spheres.

7. After conversion of the frequency to the energy and after division by the light velocity in square we find the seeming paradox for defining the mass:

The larger the cosm radius, the easier is its rest mass or rest energy to the outside.

Using the General Relativity Theory, however, the larger world collects more inner mass. During a collapse, unstable Black-White Holes - so-called **Protocosms** - can pump mass and energy into themselves while running their first quarter period. This way, they become extremely light. Small momenta are moving now that just formed protocosm in being black and in divergence to light velocity to another location, just as if it would have passed a "worm-hole". After completion of half the period of a cosine oscillation, the inner mass of this body strives apart again. The being white comes to the agenda now. The protocosm bursts and installs its systematic subworlds. The momentum of the body, which was

just unstable and super-light, now will be denied after the release of the inner mass into an extremely insignificant momentum. The installed system therefore almost rests at the place of origin.

8. The world consists of a hierarchy of stable cosms starting with the two subparticles, which are similar to the electrons and protons, but which are very much heavier. They are closed at the inside of protons and electrons. This hierarchy will be finished by forming our macrocosmic universe by all the protons, electrons, and neutrinos. The movement of anything moved, which we do not know, let us think of an opinion of particles only based on the waytime. In the inside of stable cosms, there are their protocosms and both stable subparticles like gravitons and subtrons.

9. Our world represents thus not only a hierarchy but also a quantized order of constituents. The coherences can be explained like the electron shell of the atoms: unstable black white holes situated in a stable black white hole will be organized in the system of the quantizing and will give so the well-known Hubble-Bubbles that honeycomb structure of the super-galactic orders.

10. By the fact that we have reimported the bodies as space-oscillators meaningfully, these are both connected to the special and the General Relativity Theory and with the original quantum mechanics. In this respect, we provide the prerequisite to understand two theories, which were not united today in a common system. In this system, it will be clear, in what the meaning of the relativities of the clock-motion-order (special relativity) and the clock-hierarchy-order (general relativity) consists: clocks as oscillators move with each other in a world, which presents their order. From this, their waytime-like properties are deduced. Way and time are functions of the movement and of the order of the watches in a receptacle clock. The result of the considerations represents the beginning of the acquirement of the united field theory (Arcus, 1998), which is based on the recommendations of Einstein (1879-1955) and, which sees the statistics only as a crutch of the sciences but not as a picture of reality. Shortly and precisely, the two basic formulae of the association are here:

> I. An elementary effect quantum 1h as the only taken remnant of the original wave mechanics by us corresponds exactly to the simple oscillation $h = mc\lambda = dc\lambda/M$ of a non-stationary black white hole, derived by the stationary Black Hole of the original General Relativity Theory.
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> II. The gravitomagnetic field is equivalent to the electromagnetic field: $m = k_q \times e$. The causalities of both monopolar and both bipolar fields lay contrarily to each other.

We have not extrapolated the theories but interwoven the philosophical contents to find the agreements into this with the reality. In this respect, we climbed down respectively to one level from the theories and carried out the philosophical and physical association, which would have never been recognizable in the mathematically lifted sense there.

## 1. Positioning of the Principles of the United Field Theory

The called task is the unification of two fundamental theories:

a) Of the "Quantum Mechanics", "Quantum Dynamics" or "Quantum Field Theory" and
b) Of the Special and General Relativity Theory.

In the year 1900, Max Planck (1858-1947) justified the "Quantum Mechanics" as he found the effect quantum h named in honor him. With that elementary quantum h, the radiation law named after him could be derived, too. This way, it was used on **wavequanta**, but it was not used on real "quanta". The difference between quantum and wavequantum remained insignificant without the discovery of the quantization of the spacetime today. It has got necessary absolutely now.

In 1905 Albert Einstein was able to concept his Special Relativity Theory, SRT, and the “Light Quantum Theory" - better called a Light **Wave**quantum Theory -, which is based on the Planck-radiation law. He presented the General Relativity Theory in 1915/16. That theory is described as a "gravitation theory" although their solutions hit clearly both the cosms of particle and radiation matter (Friedman-solutions). This manner, the electromagnetic fields (**e. m. fields**) and the gravitational fields as gravitomagnetic fields (**g. m. fields**) are explained by geometrical solutions as an analogous totality. In this respect, it should already matter in the thing to be able to reconcile this theory with a modified wave

mechanics, namely the **Wavequantum Theory**. This didn't turn out well, because of the contradictions of definitions that we now compensate. For the same reason, the present unification theories also have remained insufficient. Neither, there still were "Black Holes" nor the present description of "Big Bang". Much more, the total matter (energy and mass) consists of a system of our solution of the non-stationary Black-White Hole that can really be quantized itself. From this cohesion, the cosm system arises from cosm hierarchies of stable and unstable cosms between which wave-energies are exchanged.

The assertion stands contrary to our idea of unification:

> The Relativity Theories and the "Quantum Mechanics" were completely right. Every trial of their modification only can be considered as slippery.

The departments in this respect expect the extrapolation of their own theories. They think, the unit of the fields was feasible by means of a quantizing process of the Relativity Theories on the base of a probability theory. The result was then based on a system of infinite developments, which would include the accident.

However, we make new axioms, which are justified by the Relativity Theories by the actual quantization of the General Relativity Theory. We find

> The superstructure making the United Field Theory!

This means, that

> The points of view of both theories regarding their axioms to the main question of relativity stand so much subjectively and tightly that it would **never** have been able to unite the theories in their continuation.

Our solution is simple. Rather it is working on a complex system in never known extent to now. It reflects an order, which cannot be found with the theme of present physics at all, because physics commit to a home-made chaos that alone is following from the subjective exchange of objective and subjective. There will be nothing more than a subjective factor. The geometric order, found by us, will tie to such a tradition like the periodic system of the chemical elements. The accident has to be distinguished into its secondary niche caused into pseudo-random and subjective accident. The first category indicates causalities and coherences remained undetected; the second category includes the unpredictability of conscious behavior, because subjective causes but objective coincidental effects are put. Whether pseudo nor subjective accident, both have to be included by probability calculus now. However, both are effective in the origin of the matter at least. The subjective accident (subjective set, objectively working accident) will be developed by the conversion of consciousness into the arbitrary behavior of definite material elements how prior-ranking the man.

At first, we have to open our axiomatic setting and to begin the proof of their correctness by means of known facts, which originate primarily from already known experiments. In this respect, there is hardly a necessity on new experimental demonstrations, but merely on a completely new synthesis of available, unquestionable realities. Passing present theoretical conclusions are negated. The new problem is arising now, and it has been solved here:

> Putting together the patchwork of the present researcher's results in connection with the new solutions to a realistic system that is thought here.

The first observation is that this work causes of the present division of physical phenomena into

- Light or electromagnetism (those waves) and
- Matter (their waves) as well as

in their separation from the philosophy as overtaken historically. Instead of this opinion, it presents the following order: First, the actually found uniform concept of **philosophical and physical matter** stands in front of the physical or chemical imaginary matter:

The **matter** is the **illustration** of the **inferred movement** of the **moved anything**.

We divide up its motion phenomena in:

MATTER

| **Electrical Matter** | | **Gravitational Matter** | |
|---|---|---|---|
| Electrical Corpuscles (Charges) | Electromagnetic Wavequanta (Electrition Wavequanta; ”Photons") | Gravitational Corpuscles (Masses) | Gravitomagnetic Wavequanta (Gravitation Wavequanta; *“M*atter wave Quanta" or *“F*allons") |
| | - Electromagnets | | - Gravitomagnets |
| | - Electromagnetic Radiation (Electrition Waves) | | - Gravitomagnetic Radiation (Gravitation waves; “Matter wave Equivalents") |

The matter is equally shared into its two types, electrition, and gravitation, which together or alone install themselves some stable cosms (true particles, true quanta) like also this universe. In their primary community as corpuscles of special quantity that is proved here, they are able to send out and to receive wavequanta and to make secondary force phenomena of matter. Electrical and gravitational matter causes each other forming an operation of material oscillating. Well, matter may no longer carelessly be seen as substance but as higher concept. Two manifestations of the matter are "substance" or better mass or charge and the energy.

About 20 years were necessary to develop "Quantum Electrodynamics" ("QED"). Therefore, it is not such a one but the real **Wavequantum** Electrodynamics, **WQ**ED! It uses the concept "quantum" in linguistically careless way, because it negates the real quantum - the actual corpuscle by the fact that it thinks this particle to zero. Instead of this, it regards magnetic fields as corpuscular. It is hardly to understand, why. Besides this currently presented work, nobody has discovered the primary quantum in the form of the cosm but calculated only with features of the same like with mass, angular momentum, charge and magnetism.

The General Relativity Theory declares the universe in principle like all cosms, in principle - the gravitational and electromagnetic as also the cosms of both forces with infinitely many theoretical possibilities of cosm magnitudes. We regard the application of "infinite" as pure mathematical fiction: only some of an infinite number of theoretical solutions are really correct. However, what do we want to understand by a cosm now (excerpt the universe)? Very fast the cosm could be quantized by the fact that we recognized it as a kind of spatial wave, which isolated and black-hole-like masses are breaking the push of upward elongation and overcoming it. This horizon of the now non-stationary black white hole oscillates harmonically. It got possible that the author could dare the decisive step in 1986:

> An integer Planck quantum h corresponds to a whole oscillation period of this spatial wave in the form of an arbitrary cosm. If it throbs twice, it has completed the oscillation period of its elements, which must commute of the two sides by the center of gravity twice. Planck’s quantum itself finds here its priority!
>
> An arbitrary cosm forms the true particle. It alone is the true quantum. First, its oscillation shows its quanta. By "quantum mechanics" actually so-called "quanta" are really wavequanta. Those properties are never particles. They are **energetic particle equivalents**, if the event is a pair production of true particle quanta!

Calculations show that this chosen systematics is closer to the reality and it is compatible with the Relativity Theory. It solves puzzles but many only in the trend and in the attempt, which one hopes to find in the association of both theories. It got immensely clear:

> All present "Quantum Theories" drag a vagueness in their terminology by the fact that they describe their wavequantum functions as "quanta" and so they don't allow any space of dual categories. The real quanta then are the cosms in a cosm hierarchy, the locked universe is built up from these. Therefore, the present "particle concepts of Quantum Theories" don't correspond to the real particles but they put these corpuscles respectively the electromagnetic functions only to wave functions! They only know the "QED", but they don't know any wavequantum gravitodynamics, WQGD.

Well, the solution of this problem doesn't matter to reject "QED" in principle and to put decades of the research to the files meaning it wasn't an example of the unified "calibrating field theory". First, it is rather able to prove that it is based on finite magnitudes. Secondly, their terminology can be adapted. In addition, it is necessary to switch over the putative infinity into to the finiteness cut of the spacetime. The resulting WQED can be put to the superstructure presented by us of the United Field Theory. For reasons of considerable extent, it has not happened in context of this work. However, we have laid out essential features and we concentrated us strongly abstracted at the association of the basic conceptions of both theories.

The WQGD would be feasible after the pattern of the WQED, turned over only causally because the wavequanta of the gravitation behave just the same as the wavequanta of the electrition according to our theory. Currently, "QED" shows effects up to precision around $10^{-8}$. Unfortunately, the "Quantum Field Theory" has developed to their models an independent and obliged terminology, which under no circumstances comes close enough to the objective truth continuing this way.

In deep precision, uncertainties where already set, the small effect work of the WQGD starts first, because an elementary particle carries a stronger electromagnetic charge than a gravitomagnetic charge (the mass). Today, one simply could not find such magnitudes subjectively by chance and couldn't prove them either that this divergence problem of "QED" doesn't exist objectively. The reason is that every quantum limits the work of its isolated wavequanta.

> The real Quantum Theory, which we developed here, is the corpuscular theory of the electrogravitation itself! It shows the origin of the wavequanta and the classification of the wavequantum theories. There objectively aren't other forces than the **electrogravitation**. All the other interactions or effects as forces are derived from it.

Our theory shows that all the things only exist at all because of the oscillation of quanta and their movement wavequanta and this special relativity. "Quarks" and "intermediate bosons" we don't need to explain particles anymore. Subcosms, which we mention to protocosms, are in a particle sub-hierarchy.

The horizon doesn't oscillate as this the research had introduced to itself approximately till now: the masses would "big-bang", stream apart and then be led to the reverse motion by gravitation where they heated up themselves and prepared them for a further "Big Bang" by "particle transformation". The explanation trial is wrong and remains mistaken, because it is the result of a transfiguration of the particle concept as corpuscle with the wavequantum concept garnished chaotically, lifted up to an ideology almost of the "Quantum Mechanics". We point that under the horizon of stable receptacle cosms certain elementary cosms as unstable protocosms exist, whose contents consist of stable subparticles again in the end. The protocosms evaporate and install partly stable subworlds temporarily. In this connection, the necessary mass-elongation appears. With obtaining the ejected mass, the retransformed protocosms withdraw their receptacle cosm its mass elongation. The stable receptacle cosm lives on base of this process. If one supplies it with energy so that the protocosms change their properties, it becomes unstable. If the unstable cosm passes energies in portions, it becomes stable again. With this solution, we have solved the particle problem.

A union of different stable particles, known as it is favored by present theories, therefore stands outside every discussion. The real quanta as stable particles cannot be united by themselves. They are only inflated with energy. The event changes the properties of particles, but it doesn't change their identity.

They backward decay exactly into the identical stable particle from which they have come before. During this process, they throw off their surplus energies by radiation and/ or pair formation. In the course of the pair formation, non-identical particles appear.

Well, we have taken the step to revive the particle to itself geometrically. This deed contradicts this epoch, determined of ignorance of the corpuscle and ignorance of the warnings of Albert Einstein. The "Quantum Mechanics" however reduced the unpleasant feasts at the true particle just on the measurement units of mass and of angular momentum. It idealized the particle to a point. Well, the United Field Theory is work using geometry and motion, because it presupposes the General Relativity Theory. In addition, it goes a step towards simple mechanisms, which haven't been vivid currently: The world that should consist of a trifle of the points is going to be an honest and understandable something! One can compose itself again, which one wasn't able to do with statistical point-like worlds! We have cleared the particle question among the following nine premises:

1. The elementarity of the particles is fundamentally located in the structure of the stable particles. There are only three particles in the macrocosm and another two particles in the microcosm. Therefore, these five stable particles are elementary: proton, electron, electron neutrino (deleted) as well as graviton and subtron. All unstable particles however are combined of the stable particles and energy.
2. The structure of the stable particles is based on the relativistic solution of the Black White Hole: any particles have to be understood as cosms.
3. The exchange processes of energy/anti-energy or mass/antimass must satisfy the laws of the cosm between the particles, which always run symmetrically in the origin and lead only to the asymmetry at the "weak" interaction.
4. Asymmetrical energies or masses mean the inconsistency of the cosms.
5. Unstable particle states result from the unfinished exchange processes of mass or energy.
6. The lifetime of an unstable particle would be proportional to the special relativistic dilation of its protocosms, if the energy would be converted no longer by protocosms in energy of motion but into a pair forming rate to scheduled quanta.
7. In their interactions, electrons show elementary spin of ½ of the Planck's constant $h/2\pi$, because their inner structure follows the system 1+0 protocosm. In consequence, the symmetry would have 2+2 protocosms because every interaction includes a protocosm with half a spin. The electron remains conserved (lepton number).
8. Protons have a special structure existing from both systems 2+0 and 1+0. In this respect, the interaction of 0 can be carried out via integer numbers including half the number analogously to the lepton. The proton forms the elementarity of the baryons. It always remains by conservation of its structure (baryon number). (/Q 13/, page 39)
9. Mesons follow the system 2+0. They represent the structure analogon on the system 2+0 situated in the proton.

We cleared the force question of the gravitation and the electrition as well as their two magnetisms as elementary of the "strong" and the "weak" force, by the fact that they seem to be results of the elementary forces, here of the frequent and the rare effect.

The electrogravitational charges (quanta) have to be understood as material priorities, which were joined together by movements in a given and closed order. The dipole loads secondarily follow from the relative movements. These are generally magnets, concretely electromagnets but also gravitomagnets as gravitational dipoles.

The "matter-waves" conceived by De Broglie may not be regarded as radiation equivalents. The proof at the diffraction grating in 1927 of Davison, Germer, and Thomson stays unclearly. One thought at that time having proved the wave-energy directly. In reality, the De Broglie conception is the energy of the **matter-wave quantum**. Such energies are dipoles, for example the field energy of an electromagnetic field or of a gravitomagnetic field. In the mathematical combination, the "matter-waves" find their explanation as the sought-after gravitational wavequanta, because they arise from the curved movement of the gravitational rest mass. They can be changed by interaction into gravitation ray or electrition ray. The gravitation ray is given to their relationship with the photons only in the form mostly, however, in transformation of the gravitational field energy into an electrical field energy. In this respect, the proof of gravitational wavequanta, we called them fallons, already succeeded while exchanging into e. m. waves in 1927 in laboratory (the fallon is the wavequantum gravitation, the photon

is the wavequantum of electrition). In the course of this cognition, the electromechanical parallelism has to be described newly.

At its direct appearance, the gravitation ray heats up the electrogravitational particles concerned electromagnetically by the fact that their new gravitationally switched motion property projects itself onto their electromagnetic charge. Superficially, from a fallon interaction of the most part a photon effect proportionally results in the relations of the electrical charge to the gravitational mass. In the consequence, the gravitational wave energies remain quite minimal. In turn, they only can indirectly be proved to phenomena currently remained untreated.

> Provided that matter has electrical charges, which seem to be fundamentally stronger as its gravitation, the grós of interaction will be transferred electromagnetically!

The appearing gravitation swellings, which appear in Supernova and which lead to gravitational field density fluctuations in the course of general matter movement are almost symmetrical by compensating the gravitational wavequanta. Only asymmetries would be able to prove. One assumes so-called neutron stars would interact about gravitational waves essentially with each other, if they had less strong electromagnetic fields. The gravitational wavequanta were responsible of the highest share of the transmission of the momentum. At least one should be able to think that macrocosmic bodies, like neutron stars, have a smaller electrition component relatively the gravitation component. It is told about the pulsar PSR 1913+16 would have succeeded in the indirect proof in the gravitational wavequanta by astronomy, which in most abstract form supports the General Relativity Theory but still not the United Field Theory. We think the proof hasn't turned out well and we explain this more in section 4.10.3.

It remains to generate quantitatively an experimental verification of the **equality** of gravitational and electrical elementary charges. Now it has to be determined this mass equivalent of a moved electrical charge. One could derive that the electrical elementary charge, measured in Coulomb C, corresponds to the masse, measured in gram g, which is derived from a value of this theory: $1C \equiv 1.16 \times 10^{13}$ g (cf. section 2.5., page 328).

We have the following task, taken to a short denominator:

1. The real quantization of the corpuscles. From this the actual cosm theory is made.

2. The principle and abstract connection of the present "Quantum Mechanics" to the union of Field theories.

The possibility is created to understand the "Quantum Mechanics" as the real wavequantum theory. In principle, any mathematical fundamental knowledge of "Quantum Mechanics" are correct. Its models of thought to the recording of wavequantum phenomena go back on the wave-momentum difficulties. The "Quantum Mechanics" consequently is not able to quantize the particles. From this fact still follows that it overthinks the possibility of further unloaded momentum interactions and therefore it doesn’t respect a variety of real subparticles of the particles. With the correct prerequisite, however, it proves as a pure wavequantum mechanics while the "Quantum Mechanics" as such a one of its meaning is attached to the true Quanta that are the real corpuscular particles. Its present faith, particles are just an expression of wavequanta, because they would be formed as pairs from them, prevents from the union of the theories.

In our theory, we correct that the ignorance of an immeasurable objectivity doesn’t remove the objectivity itself. The particles in this respect don’t have any so-called "wave character" at all, because the concept "particle" was used for the principle "of" the so-called wave function to himself, by the fact that one considered particle and wave as a "quantum-mechanical unity". In reality, the "wave function" does not represent a function of the real particles but only a function of **interaction of dipole energies** of their, by us, so called **wavequanta**. Well, the "Quantum Electrodynamics" hasn't dealt with the electrons but with their electromagnetic properties!

If one remained by terminology of “QED", a magnetic field already was a "particle". Moved electrical charges would change into "particles" by the fact that they gave themselves an electromagnetic momentum. This effect was then briefly called "spin", although the real particle doesn’t revolve at all into

vacuum rest to produce its own elementary electromagnet. Our theory shows that the movement of the electrically unique charge of one of the multiple subcosms has resulted generating the electromagnet. Therefore, this "spin" is an electromagnetic vector property first. We clarify to what extend it referred to the mechanical or the gravitational quality of an angular momentum.

Exemplarily, we change some concepts of “QED" on realistic terminology of WQED:

| “QED" Concepts | : | WQED Concepts, how they had to be right: |
|---|---|---|
| Spin of Electrons | : | Electromagnetic Spin<br>(Vector of quasi-elementary electromagnetic<br>Field) |
| Electron | : | Electromagnetic property of<br>Real electron cosm |
| Quantum field | : | Wavequantum field (field of magnets, no waves) |
| Particle | : | Wavequantum (a magnet) |
| Point-like corpuscle | : | Particle, quantum, cosm, non-stationary<br>Black-White Hole |
| Electron field | : | Field of e. m. properties of real<br>Electron particle |
| Photon field | : | Field of e. m. properties<br>Of charge pairs |
| Exchange of<br>Elementary particles | : | Exchange of wavequanta, additionally, interactions<br>Between electromagnetic and now also<br>Gravitomagnetic properties of not observed<br>And real particles as microcosms |
| Space time point | : | Ignorance of the non-point-shape of any matter |
| Virtual particle | : | Compensated wavequanta fluctuate, i.e. they appear<br>And disappear after uncertainty relations |
| Photon - e. m. quantum | : | Photon is an e. m. wavequantum<br>(Fallon is a g. m. wavequantum) |
| Photon mass | : | E. m. wavequantum mass or momentum mass |
| (Fallon mass | : | G. m. wavequantum mass or momentum mass) |
| Vacuum | : | Wavequanta compensation, wave vacuum |
| Electron structure | : | More than one lonely e. m. wavequantum |
| Proton structure | : | Three e. m. wavequanta work together |
| Quarks | : | E. m. wavequanta |
| Fermions | : | E. m. wavequanta with half an e. m.<br>Spin, sign change of e. m.<br>Wave functions: the electromagnet is reversible by<br>Braking and reversed accelerating! |

| | | |
|---|---|---|
| Bosons | : | E. m. wavequanta with integer<br>E. m. spin, no sign change:<br>The effect of electromagnet is irreversible, because<br>It cannot be braked or turned around. |

Today, the "QED" doesn't know the real vacuum. However, that stationary vacuum of the charges exists in the form of compensated cosms and anticosms of the gravitation as well as of electrition, too. These are vacuumcosms. Without them, force continuation would be unthinkable. Unless one designed non-existing wavequanta, to which one just assigned as much existence like non-existence. The "Quantum Mechanics" went currently this way, because it was not detecting the corpuscular nature of the real quantum vacuum. The stationary microcosm vacuum is a motion field of contrary corpuscles in which just contrary wavequanta exist (see section 2.14.)!

Every movement in vacuum is the way s (distance) that the moved anything covers on its effect line of the movement relatively to the vacuum body in a definite time t. Two priorities in this respect join then the way and the time as waytime. The moved anything provides the direction arrow. The matter already becomes to the cause of the primary vector with that, with the velocity or speed v (cf. section 2.3., page 307). It indicates the rapidity of this movement. The velocity vector is described by the following magnitudes:

Effect line: the motion line of the moved anything through the stationary vacuum
Direction arrow: the sense of movement of the moved anything relatively to the resting vacuum
Amount : the relationship of way length s and time length t in the vacuum.

It is obtained absolutely on the stationary vacuum. Only two absoluta cause one relativum to each other:

Dynamic : the rapidity difference of two movements relatively to the vacuum.

The vacuum-velocity of light c of the waves gave this motion priority:

$$\mathbf{c} = s/t = \lambda/\tau \ .$$

In this equation, the quotient of the oscillation length $\lambda$ and of the period time $\tau$ of an oscillation shows that some **cosm is a primary and ideal oscillator**.

## 1.1. Modified Relativity

The matter concept has a separated description in physics and in philosophy still today. It is based on the examination of the **movement**, so essentially on the difficulties of velocity relations. The bases of the relativity theory were derived from principles, which should to satisfy the experiments of Albert Michelson (1852-1931) in the years 1881 and 1887 and the experiences primarily:

Thesis: Special relativity principle:

> *"*By no physical methods, one can find an excellent inertial system ". (/Q 12/, page 157)

So one concludes from this thinking, there wouldn't be an excellent reference system at all. Everything would be relative. There wouldn't be any world ether. The world was based on a confusion of relativities, which would arise from the accident. However, we think, going out from the existence of the vacuum, the following idea:

Antitheses:

> The objectively excellent inertial system cannot well be found by posed experiments, but it follows from the logic of the isolated system.
>
> World ether is formed from **stationary vacuum**!

Our mathematical system lets the vacuum foundation appear as the first unification base of the theories "Quantum Mechanics" and Relativity Theory. In that isolated system, no handicap of the accident exists. Well, it has to be calculated with absolute relationships objectively. The conclusion allows the excellent inertial system that is cannot to be found experimentally, but it is objectively available.

Einstein wanted to see the vacuum as such an ether to which one cannot assign any own speed. We have a strategy to describe the origin of the vacuum becoming to the resting world ether and observing velocities of real particles **primarily** as relative velocities to vacuum and **secondarily** as relative velocities under each other. Observers, which consist of particles, can only measure relativities.

The sentence "Everything is relative" is logically incomplete and thus, it is wrong. Instead of it, we formulate this: "Consequently, the relative things are the results of the relations between the absoluta".

Relativa between relativa only appear as nonsensical. The special relativity principle was built as an empirical base. However, from this only premise "one cannot find" was illegally concluded corresponding to the logical laws that the absolute reference system would not exist. All theories based on this error, yield a chaos of relativities. This appears virtually as if somebody who receives different radio transmitters wanted to ascribe the function of the transmitter to the waves, although they are the product of an oscillator that is located on the respective transmission place. That means that the theory of independence of waves in ignorance their origin doesn't satisfy the experience at least.

We interpret the result of the Michelson test as follows:

> Despite of existence of absolute inertial system for the moved matter in form of vacuum, an observer moved with this matter is not able to measure or to prove the absolute inertial system.

We presuppose:

If we describe velocities generally, then we mean primarily the movements of corpuscles or of real particles through the universe' vacuum. We understand the vacuum of universe as a spherical body of absolute measurements. It is restricted in Cartesian coordinates but opened of unlimited viability.

The potency of radiation and of reception of waves, which is bound at the corpuscles in form of their charge movement ($m_o$ or $e_o$; gravitational mass or electric elementary charge) and from its following

interactions of their wavequantum masses ($m_w$ or $e_w$), we describe secondarily as an explicit announcement, because there will be wave velocities then.

We decline to describe such wavequanta as particles like, however, the "Quantum Mechanics" do so today. It has put in order photons as "boson particles", which represent correctly and exclusively the **wavequanta** of the Bose statistics. However, we separate the present harmony from wavequanta and particles in their concepts consistently. The real particles are the primary cosms.

We hold the opinion:

> Because the absolute inertial system exists objectively in form of the stationary vacuum, it is able to design a mathematically formal and variable relationship of the light to this system.

This construction also appears like an arbitrary choice of a relative inertial system only in turn. Later, such an attempt of finding solutions of United Field Theory will be proved to its usefulness.

Einstein banished an observer into a freely falling box in which the subjective impression is justified for him: the observer cannot measure any magnitude at all experiments, which he also likes to carry out that could give him information about systems standing in relations at the outside of his box.

We expose that impression as a subjective one, because it is like the following position.

Two people, which have bound themselves with a ribbon are going falteringly in pitch-darkness. They believe that apart from them there were no other connections and that there was given absolute liberty for them to the movement into all directions. This can be changed by the reality, if Einstein's box would collide someplace sometimes.

Every subjective judgment of the situation of the observer may not be defined as objective truth from the beginning. This means that every other subjective point of view enjoys equal rights to every previous subjective point of view, only that its inconsistency doesn’t prove conspicuously!

Therefore, we modify the special relativity principle on the circumstance of the objective existence of an absolute Euclidean coordinate system, but which the observer cannot measure regarding the relationships of the wave-energies of light and the gravitational matter while the free falling. He makes use of only these electrical and these gravitational magnitudes! This coordinate system of incurved magnitudes is located in the stationary vacuum.

Stressing those objective facts, we don’t put the observer into the box pro forma, but we let him fly on a platform through the universe. That platform represents a differential part of a curved surface. The observer gets a chance of openness here. Its subjective impression, its box is freely mobile eternally, is negated by the objectivity. His platform moves through the absolute inertial system. First, one can only speak of curvatures relatively to it. If there wasn't the absolute system, the concept of the curvature also would be invalid to itself.

Therefore, the obvious inconsistency that consists of the assertion the absolute reference system didn’t exist, is cleared because in the box the observer couldn’t prove such a thing at the experiments. That observer on the platform won't do this, too. Alone the wording of such an axiom that has carried the present relativistic physics makes appearing justifiable doubts about its correctness. Every other perspective has the same right.

Under this given new conditions, the relative velocities v of light sources (Q) to observers of light (B) dilapidate to subjectivity completely. There are still only the objective relationship in the velocity of the light source $v_{v(Q)}$ to the absolutum of vacuum (index v) on the one hand and the objective relationship of the velocity of the observer of light $v_{v(B)}$ to the vacuum on the other hand! Unfortunately, our subjectivity is the only one what we can reflect from what we have drawn our current conclusions, for example this:

The velocity of propagation of light waves **in the vacuum** is equally high in every inertial system into every direction.

If one reads that sentence very exactly, then it means really:

**This VACUUM (called above) is THAT inertial system of velocity of light waves!**

Any inertial system moved arbitrarily to the resting vacuum relatively dilapidates to the triviality by this statement in its concrete movement.

What is this vacuum? Is it a chaotically flexible concept? No, the present opinion regarding a vacuum definition goes out from the point of view of the so-called "Quantum Mechanics" (correctly: it works with wavequanta) according to them, vacuum can be assumed as an infinite ocean of “virtual particles". One almost thinks here to find the chaos of wave relations. No particles and no vacuum themselves are researched but investigated only the conception of compensation of wavequanta. However, we define the primary vacuum as compensation of the particles and antiparticles. A quasi-compression of the vacuum could lead to a higher light velocity in this precondition, however.

Above we had already stated that the present use of particle concept in connection with wavequanta will be proved as a mix-up, which leads to rough faults. Because particles are not wavequanta and wavequanta are not particles!

Because wavequanta are only statistically ascertainable, one transfers the thought a chaos, which would be caused objectively and putatively, on the opinion of the vacuum, through what it will be infinitely flexible like even wavequanta.

This consequence remains one-eyed. It exclusively looks on relativa in the relativum. We cannot be content from logical considerations with that. Where a relativum exists in form of a wave, we think to have an oscillator in form of a transmitter - the absolutum - that has emitted the wave or which receives it. Consequently, it must even exist an absolute vacuum as "corpuscle vacuum" in form of transmitters/receivers apart from the compensation of waves as a kind of “wave vacuum" (there the physics finds their error concept for "virtual particle"). These absolute oscillators work exactly to each other for the power, through what the radiating and receiving compensate themselves. Therefore, they are passing on this received signal immediately by send (short-distance-effect). Such a vacuum, which is constructed spatially now, would be finite in stationarity and Cartesian coordinates. With the choice of the vacuum as the absolutum of the velocity relations, we fix an excellent inertial system. It was already justified (stationary cosm, 1917) in a solution of the General Relativity Theory, which was found by Einstein. This solution has recognized:

> The medium of the universe consists of a stationary spherical vacuum body. This vacuum is stationary matter. Here gravitation as well as its inertia are compensated with antigravitation and anti-inertia. Exactly, the same applies to the charges of electrition.

The vacuum as the ideal world ether doesn’t have any friction property in relation to the extension of waves. However, it carries an elastic property regarding the movement of the electrogravitational particles relatively to free electrical and gravitational charges. By the fact that the world ether exists but isn’t provable, the considerations get up-to-date to the Lorentz transformation again. The following partners are bound in stationary vacuum:

1. Electrical charges and anticharges, which movement with each other leads to the phenotype of the electromagnet (**photon $\gamma_q$**). They make the continuation of the electromagnetic energy possible with the other equal elements of the electrical vacuum in form of the interactions into short-distance-effects. One then speaks about the electromagnetic wave that is carried by photon interactions (electromagnetic interactions). Relatively to the stationary vacuum, the interaction velocity is vacuum-velocity of light c.

2. Gravitational “loads and anti-loads” that movement between each other leads to a gravitomagnet (**fallon $\gamma_g$**). They make the short-distance effect possible with the other equal elements of the gravitational vacuum by continuation of gravitomagnetic energy in form of interactions. One speaks then of a “gravitational wave” that is carried by fallon interactions (gravitomagnetic interactions). Relatively to the stationary vacuum, the interaction velocity is vacuum-velocity of light c.

Consequently, contacts have particularly constant speed $c_v$ in relation to vacuum between the stationary charge pairs as strap of the electromagnetic radiation. Relatively to the freely falling inertial system of observers on their platforms, they have a different **momentum transfer velocity** $v_q$ (relatively to radiation source or observer indicator: transmitter/receiver) according to condition (1.1,1).

> Interpreters of mathematics in circles of physics and of related philosophy declared the solution of stationary cosm to be unreal, what represents a historical mistake according to our opinion.

From the point of view from every vacuumcosm VK, a wavequantum continuation (the wave) is moved with vacuum velocity $v_v = \pm c_v$ into all resting directions when passing further vacuumcosms:

$$\begin{array}{ccc} & -c_v+ \quad +c_v- & \\ \text{VK} \leftarrow\text{----------} & \text{VK} & \text{----------}\rightarrow \text{VK} . \end{array}$$

The relative velocity $v_M$ between the chains of short-distance-effect in the distance isn't relevant for the momentum difficulties of electrogravitational matter, because two photons leave each other in vacuum with double light velocity in differential of a straight. They step with double light velocity towards each other (cf. equation (1.1,3)). As we still pointed, they pass each other at this over their stationary vacuum and then they go apart again. Their actual speed doesn't play any role relatively under each other. Only their interactions obtained on the momentum transfer to the electrogravitational matter (protons, electrons, and different cosms) have to be noticed, because the electrogravitational matter is restricted on motion relations below the vacuum-velocity of light.

The introduction of a **transfer velocity $\mathbf{v_q}$** is necessary to fulfil stationarity. The wave-energy $E_w$ of the local photon is given to the neighboring vacuum quanta and their photons. The energy but changes to the observer, which consists of cosms (momentum transfer velocity or transfer velocity $v_q$). The origin of it is for example that an energy source consisting of cosms has to arrange the momentum to the met vacuum quanta at an own vacuum velocity $v_v$. Consequently, it doesn't matter in which relations the light source has been sent out or has been moved.

From this cohesion follows that only a source resting in all directions in vacuum transfers a vacuum-normal momentum. In all other cases, the momentum transfer is either connected to a stretching of the wavelength or of its cut. These difficulties still are outlined more detailed in the section 1.2.

We draw the following conclusion. The difference of the vector of momentum transfer velocity $\mathbf{v}_q$, seen from electrogravitational light source to vacuum quanta or from vacuum quanta to the observer's electrogravitational indicator as a relative vacuum velocity, and of velocity vector of light source Q (transmitter, momentum giver) $\mathbf{v}_{v(Q)}$, of the observer B (receiver) $\mathbf{v}_{v(B)}$ or of the platform (inertial system) P of $\mathbf{v}_{v(P)}$ - shortly called $v_v$ - in resting vacuum, is just then exactly one vector of the constant vacuum velocity of light $\mathbf{c}_v$ that realizes the transferring of wavequanta as the feature of wave.

$$\mathbf{c}_v = \mathbf{v}_q - \mathbf{v}_{v(Q,B,P)} = \text{const.} \qquad (1.1,1)$$

If the source (Q, B, P) is resting in stationary vacuum, the transfer velocity to vacuum $v_q$ is exactly $c_v$.

They are usually defined as the radial velocities like already in astronomy:

> An approach or fall velocity $v_S$ up to an observer resting in medium will be provided with a negative sign.
>
> An escape velocity $v_F$ relatively to an observer resting in medium will be provided with a positive sign.

If a watched body radiates and the observer is moved in vacuum, the specification is correct corresponding to this that the speeds in direction of the emitted radiation have to be positive: the observer

escapes, the radiator rests in vacuum, while this observer is moved now in the same direction to the emitted radiation.

Wherever a source emits a photon or a fallon or a vacuum quantum contacting to the momentum transfer, it always has to observe one initial position on a thought straight between transmitter and receiver, which line is really curved. The e. m. vacuum quantum is gravitationally massless without discussion since it has commonly nothing with the gravitation apart from the fact to be its opponent. Its two electrical rest charges are compensated. Therefore, in greater areas there are no electrical rest charges. However, the vacuum quantum of light has an electrical wavequantum because of the forced movements of both resting charges in their pair union (an electromagnetic momentum-mass as photon): electromagnetic energies over available and stationary calculated pairs of charges/anticharges are transferred with vacuum-velocity of light.

The coercive movement of a gravitational mass or an antigravitational mass leads to the gravitomagnetic momentum-mass that we call here **Fallon**. Currently, physics favors the concept of graviton for such a wavequantum analogously to the photon. In contradiction to this, we have used the name graviton for the real elementary particle in form of the electrogravitational cosm (this is the quantum, not the wavequantum). Because there the gravitation is hidden in its seemable “monopolar” coupling.

In agreement with relativity theory, we put the limit condition:

$$-c_v < v_{v(Q,B,P)} < +c_v \quad , \qquad (1.1,2)$$

after which vacuum velocity of sources, observers or platforms is allowed $v_{v(Q,B,P)}$ to increase on values between minus and plus next to vacuum light velocity $c_v$. This means: at divergence of energy expenditure to infinite, vacuum velocity $v_v$ of these electrogravitational bodies diverges to vacuum velocity of light $c_v$. Warp speed is forbidden relatively to the local vacuum quantum only for electrical and electrogravitational bodies (moved observer actually can measure multiples of c. The question after the relative density of vacuum surrenders here, in addition, to be able to explain as well as the decreasing of light velocity inside of media and also the increasing of light velocity higher than the common vacuum light velocity).

The transfer velocity $\mathbf{v}_q$ will be calculated from the equation:

$$\mathbf{v}_q = \mathbf{c}_v + \mathbf{v}_{v(Q,B,P)} \qquad (1.1,1a)$$

With the intervals:

$$0 < v_q < +2c_v \quad \text{and} \quad 0 < v_q < -2c_v$$

Vacuum light velocity $c_v$ (briefly c) was measured over wavequanta to this amount:

$$c_v = 299{,}792{,}458.0 \pm 1.2 \text{ m/s} \quad (\text{uncertainty } \pm 4 \times 10^{-9}) \qquad (/Q\ 12/, \text{page } 506).$$

The transfer velocity $v_q$ only may have values between divergence to the double of vacuum light velocity $c_v$ and zero depending of the radial source velocity $v_{v(Q)}$ or the observer velocity $v_{v(B)}$. Fundamentally, one also could describe vacuum light velocity as **vacuum wave velocity,** because there isn’t any object that could create it exactly.

A source, an observer or two platforms are standing relatively to the rest of stationary vacuum. The cosine law is valid to determinate the amount of radial velocity $v_v$, which sign afterwards is to set negatively in accordance with the current fall velocity or positively with the escape velocity:

$$v_v^2 = v'^2_{v(Q,B,P)} + v''^2_{v(B,Q,P)} - 2v'_{v(Q,B,P)} \times v''_{v(B,Q,P)} \times \cos\Gamma \qquad (1.1,3)$$

$$0 \leq \Gamma \leq \pi \quad ; \quad -1 \leq \cos\Gamma \leq +1 \ .$$

On the common effect line, both special cases are regarded as vectorial addition of the velocities of $\Gamma = 0$ and $\Gamma = \pi$. Here equation (1.1,4) is reduced.

By momentum transfer, we get the following examples of velocity relationships of a vacuum observer in relation to moved sources or observers or platforms like in (1.1,1a). So it follows:

$$\mathbf{v_q = c_v + v_{v(Q,B,P)}}$$

| | |
|---|---|
| $-1.9c_v = -c_v - 0.9c_v$ | Wave energy incidence = photon incidence + falling source, |
| $-c_v = -1.9c_v + 0.9c_v$ | Blue shift (BV) |
| $-c_v = -c_v \pm 0$ | Vacuum rest position of source, too. |

No spectrum shift! Respect: the momentum transfer runs with the vacuum wave-velocity what exactly means that the rest system of electrogravitation is built differently from the rest system of the waves in vacuum on the base of just this velocity!

| | |
|---|---|
| $-0.1c_v = -c_v + 0.9c_v$ | Wave energy incidence = photon incidence+ source escape<br>Red shift (RV) |

$0 > v_q > -2c_v$
RV BV

Here is the reversible relation from the point of view of a second observer who is in receiver position and whose observation is like the above mentioned one that our observer has to mark negatively:

| | |
|---|---|
| $1.9c_v = c_v + 0.9c_v$ | Wave energy incidence = photon incidence + falling source,<br>Blue shift (BV) |
| $c_v = c_v \pm 0$ | Vacuum rest position of the source. |
| $0.1c_v = c_v - 0.9c_v$ | Wave energy incidence = photon incidence+ source escape<br>Red shift (RV) |

$0 > v_q > 2c_v$
RV BV

That means: at each location of vacuum, an absolute rest position and both, an absolute moving position can be realized. Only for observer positions, the reflection of the velocity relation is relevant.

For example: an observer rests in vacuum. In a defined distance, a light source is resting, too. Emitted photons are getting the momentum transfer velocity of -1 $c_v$. They give the exact frequency of the radiator to the observer. Now we accelerate this light source that it falls to the observer with the velocity of -0.9 $c_v$. The momentum transfer velocity is now -1.9 $c_v$; therefore the observer receives this photon with the extreme blue shift in movement direction of that source. The facts still get more simply understandable if the observer activates a source himself that light will be reflected under the same circumstances by a mirror, which is moved to him: a photon escapes from the observer resting in vacuum with $+c_v$. This corresponds to an electromagnetic field quantum of the observer. Electromagnetic effect meets with an obliging source in the form of a mirror, which velocity is $v_{v(Q)} = -0.9\ c_v$. Then the photon gets a transfer effect interacting with the electromagnet of the mirror. This momentum is the sign of the addition of the hit velocities in the transfer velocity of -1.9 $c_v$. In this result, the observer receives this photon with an extreme blue shift in movement direction of the mirror.

That strategy reminds of the light ether theory, which preferred a fixed world ether. Because of the Michelson tests, this ether theory fell. It was substituted by Einstein's relativity. With the return to the world ether, the relativity would be negated - one thinks to now that way, but we don't.

Our point of view is completely different to the present opinion:

- We recognize the special and general relativity after its mathematical nature just because such an ether exists. In opposition, we only negate the blurred interpretations of the present physics to this topic.

- Just that ether - the stationary vacuum - *doesn't* have a changing resistance property, how it was assumed in shape of ether wind before relativity theory and light quantum theory, actually, it has a **constant** blocker property against electromagnetic and gravitomagnetic waves: photons or fallons move themselves as the result of an short-distance interaction in the absolutely stationary and steady standing vacuum always with the absolute velocity $c_v$.

Our principle of special relativity is here:

> One cannot prove the objectively existing inertial system by no physical procedures. Our mathematics only calculates such a inertial system in form of the stationary vacuum. From this fact, we derive a new understanding of reality.

Every measurement procedure of the light velocity is based on a reflection or on the measurement of wavequanta of laser light (of photons). Since latter are the expression of the wave velocity there, and they originate from a wavequantum transfer of the atomic shell, where closed rotations of the electrons can be accepted essentially, it cannot be an absolute measurement. In any experiments, the measuring is executed on a platform through what despite of most various efforts and movements any absolute red shifts of the wave-energy are compensated by absolute blue shifts. It is hopeless to measure the absolute direction in the vacuum!

The subtraction of the speeds doesn't cause any problems. Contrarily, the addition leads classically to the warp speed, which were forbidden of the relativity theories for electrogravitational matter derived in form of the protons, electrons and the neutrinos as well as of unstable particles. They only can be observer, indicator, or transmitter of light waves or gravitational waves. The light isn't concerned by the relativity theory – only its interaction with electrogravitational matter does it. One just thought therefore to satisfy the reality adequately with the following addition formula and one thought to be able to relativize that equation (1.1,3):

*Einstein's* Addition Theorem of relative Velocities

$$v_E = (v'+v'') / (1+ v' \times v''/ c_v^2) \qquad \text{(/Q 12/, page 157)} \qquad (1.1,4)$$

> There are v' and v'' relative velocities to the chosen inertial system.

In the special case, the velocities of the light source $v_{(Q)}$ and of the observer $v_{(B)}$ in the gravitational reference system vacuum also can be like the velocities v' and v''. The relativa otherwise are obtained on the platform of the observer.

To the emphasis of the present interpretation, we put once the velocity value v' to be the same like the vacuum-velocity of light $c_v$. Then we can read the following sense in literatures:

> From this we see that light with the fall velocity $v' = c_v$, which comes from a part of a source to the observer, still remains the relative additional velocity $v_E = c_v$ relatively to an inertial system. It is independent on the subjectively relative velocity $v'' = \pm v_r$ of a receiver in opposite to the inertial system.
> (cf. /Q 2/, page 862)

This would mean that an electron-positron pair moving with 90% of vacuum light velocity had to transfer one of its two annihilation photons with original vacuum light velocity no matter in which velocity location the pair also is relatively to the observer. That is only right, if one sees it relatively again: what

is the reference system? The photons have no other chance than to get into the vacuum with vacuum velocity of light! The momentum however is dependent on the velocity $v_{v(Q)}$ of lepton pair in vacuum relatively to the rest in vacuum! Thus, the momentum transfer velocity $v_q$ determines the energy of wavequanta (photons) as well as their direction of propagation!

However, the above called literary saying also would tell us that this observer still would receive or contact this photon with relative vacuum light velocity, if he was moved himself on his platform anyway. This is wrong, because if he would come to the photon, the velocity as momentum transfer velocity $v_q$ is higher than the vacuum light velocity.

The present interpretation of the velocity value $v_E$ well leads to the subjective and chaotic relativistic philosophy of life, which we see as a wrong understanding. Following our above called principles, this addition theorem would remain as a subjective veiling of the objective realities.

We read it in this way: if in the special case, the light waves coming to the observer would really reach velocity of $v' = c_v$ , he is resting in vacuum with $v_{v(B)} = 0$. Only then the above called addition theorem would be correct with $v'' = 0$.

In each other case, it is shown that relative velocity $v_E$ between the source of light and the observer is just without objective reason that it is a subjective magnitude. This means: it doesn't even actually exist! Einstein's equation then covers the relative velocity up on a mathematical fictitious value $v_E$ in unreal shape, which is still to calculate below the vacuum light velocity. This way serves the purpose of the working of his whole theory, which has stopped on the standard of relativities between relativities.

Well, Einstein's addition formula is obtained subjectively on the observer in the box:

> No matter as fast the box also may be moved, every light source situated in the box would emit the light with vacuum light velocity relatively to the observer also situated in the box, who is moved approximately with the same velocity like the light source.

To interpret this sentence wrongly like before would mean that the velocity of photons between light source and the receiving observer would be the same under each possible velocities of the box. A candle flies resting in the box, which is flying itself with approximately light velocity, then according to this opinion, it would radiate its light into the movement direction additional the available velocity with light velocity. Into the back way, it would be the same, because only then observers could always receive photons with an impact velocity of vacuum light velocity. This is the reflection of the above called chaotic relativism. No single trial can disprove it, no single experiment can confirm it, since the observer cannot measure his relationship to the vacuum.

Any experiments remain obtained on the platform of the observer! Why then do we not renounce the existence of an objective reference system? Then the relativists asked and did it. However, this is a subjective point of view from that a unification of theories will not be possible, because reality is negated.

The necessary fundamental module is made out of our logic in which we make a system – although on the first view mathematically useless – that considers the vacuum as the absolute reference system.

We move to the point of view:

**Relativa are meaningful only then, if there is an absolutum.**

Relativa on relativa yield a chaos of relativa. If we would remain at the assumption of an objective chaos, we would never find an order. This has happened in the last 100 years, where it wasn't possible to create a unified and a correct world model.

The existence of the stationary vacuum results from the General Relativity Theory, which will be explained later. Here we use the objectivity of that state of matter to give the position of fundamental principles of objective reality.

By the fact that we went back to the source cognitions of relativity theories and of "Quantum Mechanics", we overcame mistaken ways, which were gone in the meantime by the called theories. We could change the positions of the relativity theories from their subjective classification to an objective location. That means, now both theories get an objective and strong foundation as a quantum and a wavequantum theory. We call the real quantum theory a "**cosm theory**" that the present terminology can remain. The real wavequantum theory is named like before as "**quantum theory**" or as **wave mechanics**.

In universe, all moved things just are changing their movements. They cannot take an absolute position. The location is a difference value position to the vacuum at least and a subjective position between two observers. Thus, we start out of differentials of the waytime. Alone the absolute motion relations to the vacuum last in the absolute velocities.

For example, we assume the observers A and B. A is resting in vacuum. B is running his intrinsic way $dr' = v_v \times dt'$ with vacuum velocity $v_v$ during the intrinsic time dt'. Every way-step is a step of the **own watch** at the same time. Well, this is an **oscillation step** of the moved oscillation length $\lambda_o'$ (that part is the amplitude $R_o'$) of an arbitrary elementary clock of observer B whose matter we explain as consisted of subelementary clocks. We draw it as a unit horizontal vector parallelly to the abscissa dr', where it just forms the cathete of a right triangle.

In the meantime, observer A sends pulses of light into his light transmission link. They put back the wave-like way $dR = c_v \times dt$ from the transmitter to the relatively resting mirror. This way forms the vertical cathete of the ordinate dR (the same relationship is drawn a second time on the way back of the light).

Until now one thought well that also light pulses would reflect the own clock based on light oscillation. Even this is not true, because the photon is just a "match-ball" of the electromagnetically switched interaction of momentum detection and emission. Well, it depends on how fast elementary clocks of observers, of sources or of platforms are moved in vacuum (how fast cosms are moved). If the light once is emitted, it does not change its own motion state relatively to stationary vacuum because of the constant wave velocity in vacuum $c_v$, which is described by energy under the same conditions (for example: vacuum)! Only a density change could make influence. The observer B has also only one mirror. Consequently dR is not primarily a wavelength step of light wave but the result of interaction, which this light is working at the thought indicator matter of the moved observer B (moved mirror B) in comparison to that relatively resting indicator matter of observer A. Although dR is the switched wavelength difference at an arbitrary material elementary clock of the observer B! Therefore, we start out exemplarily of the light from here to sign it at all. The momentum is called in section 2.4. and equation (2.4,2).

Now the light has to mediate the hypotenuse way $dR' = c_v \times dt'$ in that intrinsic time of the movement dt' in the transmission link of the moved observer B (the wavelength step of the light wave changes here to dR'). Therefore, it is equal over dt':

$$dr' = dR' \times v_v / c_v \quad . \qquad (1.1,5)$$

This means, too, that it should be a constant relationship of the shifted wavelengths regarding the velocity relations. The Pythagorean function, which matches a vector addition in the Cartesian coordinate system, is as follows:

$$(c_v \times dt')^2 = (v_v \times dt')^2 + (c_v \times dt)^2$$

or

$$dR'^2 = dr'^2 + dR^2 \; .$$

And now, that dilation equation results as well-known by the Special Relativity Theory:

$$dt' = \pm dt /(1 - v_v^2 /c_v^2)^{½} \qquad (1.1,6)$$

or

$$dt' = \pm dt /W_{SRT} \ .$$

The extended time change dt' is now:

$$dt' = dR' /c_v = dr' /v_v \ .$$

By occurring of dt' into the dilation equation of the time, we get these equations:

$$dR' = \pm dR /(1 - v_v^2 /c_v^2)^{½} \ , \qquad (1.1,7)$$

$$dr' = \pm dr /(1 - v_v^2 /c_v^2)^{½} \ ; \quad dr \equiv v_v \times dt \ . \qquad (1.1,8)$$

That means nothing else than this moved observer B has stretched his wavelength step dr into the same measurement on dr' as well as the interaction is extended from dR on dR' via light wavelength because of observer movement. His own clock is changing itself in the same relationship like the result of interaction with light!

This is **decisive**! It means that the intrinsic frequency of the own watch is dependent on the velocity. At the same time, it says that every such change is alone the expression of any replaced ray quanta! At first, the movement of a charge or a mass does not make the slightest wave but only a wavequantum. The intrinsic oscillation of the moved cosm changes. That change affects in the received or emitted waves.

The watch has now both, the change of the period time dt (oscillation time $d\tau/2\pi$) and also the change of the oscillation length dR or dr (oscillation length in vacuum of resting oscillators $\lambda_o/2\pi$). If there is no vacuum velocity, the shift equals the rest magnitude dr' = dr = 0 in stationary vacuum, where the non-changing of dr results. It doesn't mean that an oscillator in vacuum rest would not oscillate but only that it does not change the given location of oscillation. For example it doesn't change its oscillation length $\lambda_o$ in rest.

From this philosophy the equation (1.1,5) will be changed to:

$$dr' = \pm dR \times v_v /(c_v \times W_{SRT}) \qquad \text{or}$$

$$dr' = \pm dR' \times v_v /c_v \ . \qquad (1.1,9)$$

The wavelength change dR of an oscillator will be the larger in dr', the faster it is moved through vacuum. In this respect, it stores the energy of the wavequantum, which it give back then, if its movement gets slower. At the same time, relativistic energy is increasing with velocity. If the velocity is decreasing, the cosm emits it as wavequanta of radiation (retardation ray). The equation of wave potency (1.1,5) and the equation of wave energy or wave mass (2.4,29) form an analogy. We will in principle get used to the thought that every piece of matter does not "perhaps carry" a clock – as one like to philosophize today. It is rather forming itself a universal clock in the shape of oscillator property – namely an oscillator. Just that relativistic energy change is the expression of any radiation, since we found that Planck's quantum h says correctly, one oscillation only can exists in one complete period. Certainly, it is in relation to half a period at fermion (determined by electromagnetic effect of spin) but as period, it has to be extended by integer numbers. **This means: cosms are oscillating!**

Einstein wanted to leave the necessity of a reference system. Under the impression of Michelson's experiments, a general relativity seemed credible. Has Einstein really made leaving aside a reference system of absolute origin with his General Relativity Theory? Here the answer will be "no". On the contrary! Einstein himself gave with his stationary cosm his solution of an absolute reference system

in form of stationary vacuum (see section 3.2.4.). In addition to term of Special Relativity Theory $W_{SRT}$, the radical term of the General Relativity Theory $W_{GRT}$ was found:

$$W_{SRT} = (1- v_v^2 /c_v^2)^{1/2} \quad , \qquad (1.1,10)$$

$$W_{GRT} = (1- r_o /r_v)^{1/2} \quad . \qquad (1.1,11)$$

Open cosms diverge from the outside over the collapse radius $r_k$ to $r_o$ without reaching it. The reciprocal value of the equations we want to see as relativity factors $f_{SRT}$ or $f_{GRT}$. Both terms don't exclude each other, but they are in a coherence of special determination still represented here more exactly. Something one may not do: to equate both terms without knowledge of the conditions! Quickly one leads from a gravitationally determined red shift (from $r_v$) an escape velocity ($v_v$), which would be based on the unjustified setting equivalent of the two terms. Red shifts and spectrum shifts are combined from components of special as well as general relativity terms (1.1,10) or (1.1,11) in the field of matter at all (Doppler's and gravitational red shift)!

Equation (1.1,11) will be created for the case of dilation analogously to equation (1.1,7):

$$dR'^2 = dR^2/(1 - r_o /r_v) \quad , \qquad (1.1,7a)$$

Which is calculated reversed:

$$dR'^2 = dR^2 + dR'^2 \times r_o /r_v \quad .$$

In comparison with special relativity in (1.1,9), we identify the second summand as the analogon of $dr'^2$:

$$dr'^2 = dR'^2 \times r_o /r_v \quad .$$

Since we noticed that dr as well as dR will change in the same measurement relativistically, we are able – also without giving answer how dilation of dr and dR took place – to set in these non-dilated values:

$$dr'^2 /dR'^2 = dr^2 /dR^2 = r_o /r_v \quad .$$

We are encouraged to make both terms equal with the special relativistic relations of velocity:

$$dr'^2 /dR'^2 = dr^2 /dR^2 = v_v^2 /c_v^2 = r_o /r_v \quad .$$

However, this only says on reason of our reduction:

> An equivalent dilation of the oscillator amplitude can arise from both a **gravitational cause** and a **motion cause**.

Alone from the effect of relativistic amplitude shift, one cannot find the origins! The pure addition of both causes would lead to the effect of warp speed..

Both relativities are connected.

The movement of the moved anything forms a primary oscillator. The moved primary oscillator gives a reflection of motion, which reflects the character of a superordinated oscillator - a receptacle oscillator. Within each receptacle oscillator, the movements of primary oscillators are bound to this rule: the receptacle cosm only could be left by an elementary oscillator if it would be able to reduce its faster oscillation larger in its movement.

A smaller oscillator reflects a smaller waytime state. The element had to transplant its oscillation in the waytime by its movement so that it would become as slow as its receptacle oscillator or even

slower. That is not possible since in such a case the receptacle oscillator would lose its sense! Because matter forms a **system of elementary oscillators within of receptacle oscillators** this system must be held together firstly of

**Oscillator movement order** (special relativity)

And secondly of

**Oscillator hierarchy order** (general relativity)!

This means at all: Einstein didn't find any actually general relativity, which would be superordinated the special relativity! There are still existing two bases to place the relativity of orders:

1st The relative velocity in the system of absolute velocities opposite the general vacuum,

2nd The relative distance to an isolated gravitational horizon or to an atomic oscillator in the system of a superordinated gravitational horizon, which locks the receptacle oscillator completely in which the observer is located (from the closed state the finiteness results).

1. Movement problems of fields:

SRT: The oscillator elongation represents the formation of movement. Elementary oscillators move themselves along within the oscillator elongation from amplitude to amplitude determining the elongation as such a one at all.

2. Position problems of fields:

GRT: The oscillators take determined positions to each other within a superordinated oscillator. The elementary oscillators fill dependent places in the receptacle oscillator on the amplitude of the receptacle oscillator. In determination of the walk of an elementary clock, which gets close to the separation of our elementary clock inside the receptacle clock, our elementary clock will be determined in its walk during it is determining the walks of all the other clocks. **All elementary clocks form an absolutely deterministic system – the receptacle clock!**

The special and the general relativity cannot be divided. One simply cannot lift up the so-called general relativity about the special relativity and secrete the meaning. According to the word, it doesn't exist the slightest "general" relativity actually but only an exceptional relativity related on the vacuum, which fills an oscillator, we will prove here later. In this respect, both radical expressions are usable equally in the united theory according to the above called philosophy of the movement or of the location of the movement without reservations.

## 1.2. Relative and Absolute Movement

The wavelength $\lambda_w$ of a wavequantum of radiation is determined of the radial velocity $v_r$ of its source in relations to its resting medium. This applies to all media and waves in this theory and so of the ideal world medium vacuum, too.

> A source moves, for example, with 90% of the vacuum light velocity. Into movement direction, it transfers the momentum on vacuum quanta with a shift of transfer velocity to 190% of vacuum light velocity. According to the special relativity, the used source momentum is already shifted exponentially transferring this relativistic momentum 2.294 times to the light quantum. In the movement direction, the reversed transferred wave energy that goes to vacuum quanta, only gets just the transfer velocity of 10% of vacuum light velocity transferring only the $2.294^{th}$ part of the normal momentum that would be valid in light-relations.

The momentum transfer velocity $v_q$ determines the relativistic wave length $\lambda'$, which is transferred by the vacuum quantum. A source approaches to the vacuum observer with the radial fall or approaching velocity

$$\mathbf{v}_{v(Q)} = \mathbf{v}_{vS}$$

That is defined as negative amount. During this, the source wavelength $\lambda_o$ will be reduced at the way that the source is running while the time $\tau_o$ of a complete oscillation as the following:

$$\lambda = \lambda_o + \mathbf{v}_{vS}/f_o = (c_v + \mathbf{v}_{vS})/f_o \; ; \qquad \lambda_o = c_v/f_o = c_v \times \tau_o$$

$$\lambda' = (c_v + \mathbf{v}_{vS}) \times \tau_o \; .$$

In non-relativistic relation, this is the blue-shifted wavelength $\lambda'$. The period time $\tau_o$ however will be dilated with eq. (1.1,6) in movement of an observer:

$$\tau' = \tau_o/(1 - \mathbf{v}_{vS}^2/c_v^2)^{1/2} \; ,$$

$$\lambda' = (c_v + \mathbf{v}_{vS}) \times \tau_o/(1 - v_{vS}^2/c_v^2)^{1/2} \; .$$

With $\lambda_o = c_v \times \tau_o$ the well-known blue shift equation is comprehended:

$$\lambda' = \lambda_o \times (1 + \mathbf{v}_{vS}/c_v) / (1 - v_{vS}^2/c_v^2)^{1/2} \; . \qquad (1.2,1)$$

The wavelength $\lambda_o$ contracts over $\lambda'$ relativistically to zero with the negative amount $-v_{vS}$ of the fall velocity that is given with the vector $\mathbf{v}_{vS}$ to an observer resting in vacuum. With a positive escape velocity $+v_{vF}$ it is dilated to a red shift to infinite.

### Spectrum Shift of Sound

If we lose relativistic time dilation, we find the blue shift of wavelength in non-relativistic and so-called non-primary media, for example, in a sound wave medium and its sound velocity $c_S$ under inclusion of the angular dependence of the relative velocity with equation (1.1,3):

$$\lambda_{BV}' = \lambda_o (c_S + \mathbf{v}_{S(Q)})/c_S \; ;$$

$$c_S = (331.6 + 0.6 \times T/°C)\ m/s \; . \qquad (/Q\ 5/, \text{page } 146, (A\ 9))$$

The positions of source and observer are always to orientate newly on the medium of what red and blue shift are specifically depended on numerator and denominator of the velocity differences and sums of registered observer and source magnitudes.

For sound without a relativity, an infinitely large wave frequency also reaches red shift, if the sound source escapes with sound velocity away from the observer resting in medium, or if the observer itself is escaping with sound velocity from the source resting in medium. Are there reversed relations, the blue shift will be effective. An observer falls to a resting source and the following eq. is valid:

$$\lambda_{BV}' = \lambda_o \, (c_S + \mathbf{v}_{S(B)}) \, / c_S \; .$$

The following term is valid for the shifted sound wave frequencies f'. That observer escapes from the resting source, because the relative velocity of the sound wave with original frequency $f_o = c_S \, / \lambda_o$ is decreasing relatively to the observer:

$$f_{RV}' = f_o (c_S - \mathbf{v}_{F(B)}) \, / c_S \; .$$

If a source is running away from the observer resting in vacuum than the source is to substitute instead of the observer:

$$f_{RV}' = f_o (c_S - \mathbf{v}_{F(Q)}) \, / c_S \; .$$

Sound frequencies are shifted to blue under these conditions:

$$f_{BV}' = f_o \times c_S \, / (c_S + \mathbf{v}_{vS(B \text{ or } Q)}) \; ,$$

and red shifted after the following equation:

$$f_{RV}' = f_o \times (c_S - \mathbf{v}_{vF(B \text{ or } Q)}) \, / c_S \; .$$

Here the positive escape velocity of an observer or a source $\mathbf{v}_{vF(B \text{ or } Q)}$ has to be set into the equation. The total shift at moved observers as well as moved sources is calculated by the relative product of shifted medium frequencies f' as quotient to the medium frequency $f_o$:

$$\mathbf{f'' = f' \times f' \, / f_o} \; . \qquad (1.2,2)$$

Finally, we find the equation of blue and red shifts:

$$f'' = f_o \times (c_S - \mathbf{v}_F) \, / (c_S + \mathbf{v}_S) \; .$$

One must have attention, which element is escaping with a positive velocity and which element is falling with a negative velocity. The movements inside of the medium because of density fluctuations have to be included separately, however, what here leads away. We have presented the unit of the relations of a medium that is based on the relative velocities to the medium. The equation (1.2,2) is also valid for vacuum what we will show now.

### 1.2.1. Medium Relations of the Shift of Electrical and Gravitational Wave Properties

Relativistic Doppler's shift is calculated as follows:

a) For a wavelength $\lambda_o$ to $\lambda'$

$$\lambda' = \lambda_o \times (1 + \mathbf{v}_v / c) \, / \, (1 - v_v^2 \, / c^2)^{1/2} \quad ; \qquad (1.2,1a)$$

b) For a wave frequency $f_o$ to f'

$$f' = f_o \times (1 - \mathbf{v}_v/c) / (1 - v_v^2/c^2)^{1/2} \quad ; \qquad (1.2,3)$$

(Doppler's square effect). (/Q 12/, page 69 and 156)

There are radial electrogravitational magnitudes of velocity $v_v$. Those equations are meant to be the integration result of the differential equations under the condition that neither subtrahend nor minuend of the defined integration are known:

$$df' = df_o \times (1-\mathbf{v}_v/c) /(1-v_v^2/c^2)^{1/2} \quad ;$$

$$d\lambda' = d\lambda_o \times (1+\mathbf{v}_v/c) /(1-v_v^2/c^2)^{1/2} \quad .$$

Here the radial velocity $\mathbf{v}_v$ is valid as vector of fall velocity $\mathbf{v}_{vS}$ as well as of escape velocity $\mathbf{v}_{vF}$ (fall negative, escape positive). Resulting velocity to vacuum is calculated from cosine law of the amounts with equation (1.1,3).

Consequently, the shifted wave frequencies f' would be defined to red $f_{RV}'$ or to blue $f_{BV}'$ while the source is falling to the receiver or escaping from it causing a blue or a red shift:

$\mathbf{v}_{vS}$ with negative amount:

$$f_{BV}' = f_o \times (1 - \mathbf{v}_{vS}/c) / W_{SRT} \; ; \qquad \lambda_{BV}' = \lambda_o \times (1 + \mathbf{v}_{vS}/c) / W_{SRT} \; ;$$

$\mathbf{v}_{vF}$ with positive amount:

$$f_{RV}' = f_o \times (1 + \mathbf{v}_F/c) / W_{SRT} \; ; \qquad \lambda_{RV}' = \lambda_o \times (1 - \mathbf{v}_F/c) / W_{SRT} \; .$$

It is valid: $(1 \pm v_v/c) / W_{SRT} = (1 \pm v_v/c) / (1 - v_v^2/c^2)^{1/2}$.

Because of the equivalence of

$$(1 \pm v_v/c) / (1 - v_v^2/c^2)^{1/2} = [(1 \pm v_v/c) / (1 - v_v/c)]^{1/2}$$

One may not forget that the radial velocity $\mathbf{v}_v$ is also to calculate in the relativity term with (1.1,3).

### 1.2.2. Relative Spectrum Shift

The relative red shift $z_{RV}$ is valid as equivalence to Doppler's red shift $f_{RV}$ with the radial escape velocity of the source $\mathbf{v}_F$ by positive amount:

$$z_{RV} = f_o(1/f_{RV}' - 1/f_o) = (\lambda_{RV}' - \lambda_o)/\lambda_o$$

$$z_{RV} = (f_o/f_{RV}') - 1 = (\lambda_{RV}'/\lambda_o) - 1$$

$$z_{RV} = [(1 + v_F/c) / (1 - v_F/c)]^{1/2} - 1 \quad ; \qquad (1.2,4)$$

$$f_{RV}' = f_o/(z_{RV} + 1) \quad ; \qquad (1.2,4a)$$

$$\lambda_{RV}' = \lambda_o \times (z_{RV} + 1) \quad . \qquad (1.2,4b)$$

From red shifts $z_{RV}$ the seeming velocity can be calculated. It seems to be correct, because the red shift's origins are not decoded at all. They are only then completely determined, if the cause is a question of velocity:

$$v_F = c[(z^2 + 2z) /(z^2 + 2z + 2)] \ . \qquad (1.2,5)$$

The relativistic Doppler's shift consists of another cause than the relativistic gravitational spectrum shift, which is a potential relationship of wave frequency shift between source and observer (receiver). That's the distance of elementary clocks. On grounds of (2.8,7) the equation follows:

$$f_{(B)}' /f_{(Q)} = [(1 - r_{k(Q)} /r_{(Q)}) / (1 - r_{k(B)} /r_{(B)})]^{½} ;$$

$$\lambda_{(B)}' /\lambda_{(Q)} = [(1 - r_{k(B)} /r_{(B)}) / (1 - r_{k(Q)} /r_{(Q)})]^{½} . \qquad (1.2,6)$$

(/Q 15/, page 109, (10,52))

It can be converted into a shift by velocity and then it gives a wrongly reflected drawing of movement.

For the observer, a red shift of source spectrum is working, if the distance of the source $r_{(Q)}$ is fundamentally nearer to its anticollapse radius of the electrogravitation $r_{k(Q)}$ – nearer than the relations of observer distance $r_{(B)}$ to his own electrogravitational radius $r_{k(B)}$ . Approximation-like is this

$$f_{RV}' /f_o = [1 /(1 - r_{k(Q)} /r_{(Q)})]^{½} \ . \qquad (1.2,7)$$

It is approximated as a relative red shift $z_{Rg}$ neglecting of the meter extracted root:

$$z_{Rg} = f_o (1 /f_{RV}' - 1 /f_o) \approx 1 / (1 - r_{k(Q)} /r_{(Q)})^{½} \ - \ 1 . \qquad (1.2,8)$$

We conclude from this now:

If the vacuum is fixed, all movements have to refer to this stationary system.

This also means that all the light energies coming from the inner source of a Black-White Hole and absorbing of an observer from the outside, in principle that only can be a gravitationally red shift but never blue under the condition, the observer has a low own gravitational potential that can be neglected.

### 1.2.3. Conclusions for the Spectrum Shift

Objective and square Doppler's shift of a moved light source Q or an observer B or a platform P in objective relations to vacuum and of the absorbing observer resting in vacuum, now is formulated according to eq. (1.1,3) and (1.2,3):

Red shift, RV:

$\mathbf{v}_v$ positive as escape velocity:

$$f_{RV}' = f_{ov} \times (1 - \mathbf{v}_v /c_v) / (1 - v_v^2 /c_v^2)^{½} \ ; \qquad (1.2,9)$$

It is an analogon of the special real Lorentz-transformation of a waytime coordinate, for example, the wavelength $\lambda$.

Blue shift, BV:

$\mathbf{v}_v$ negative as fall velocity:

$$f_{BV}' = f_{ov} \times (1 - \mathbf{v}_v / c_v) / (1 - v_v^2 / c_v^2)^{1/2} \quad . \qquad (1.2,10)$$

f' is the shifted wave frequency of $f_{ov}$ in vacuum. The velocity $\mathbf{v}_v$ shows every absolute vacuum velocities in the feature of an observer, source or platform speed, and the velocity $c_v$ is the absolutely constant light wave velocity in vacuum.

On the one hand, the watched shift of the spectrum between a source and an observer depends on the absolute velocity of the source. It is depended on the other hand by the observer in stationary vacuum and by the angular position of the movement direction to each other.

Because the observer cannot indicate the vacuum medium physically in opposite to his experiences with the sound wave media, the absolute shift never is observed but the relationship of absolute blue and absolute red shift to the real wave frequency $f_{ov}$ like it was given in relative rest to vacuum. Analogously to the equation (1.2,2) the following eq. is valid:

$$f'' = \frac{f_{ov}(1 - \mathbf{v}_{v(Q)} / c_v)\,(1 - \mathbf{v}_{v(B)} / c_v)}{[(1 - \mathbf{v}_{v(Q)}^2 / c_v^2)\,(1 - \mathbf{v}_{v(B)}^2 / c_v^2)]^{1/2}} \quad . \qquad (1.2,11)$$

Concretely, the velocity vectors $\mathbf{v}_{v(Q)}$ and $\mathbf{v}_{v(B)}$ are to form with the amount sign relatively to vacuum rest. From this equation, we see the whole logic of vacuum relations. Actually, there the velocity is still a dimension that has to be seen in a difference to the movement system of photons or fallons over their vacuum wave velocity $c_v$. By the fact, we don't know the absolute velocities although they really exist, we calculate a subjective magnitude $v_E$ using Einstein's addition theorem of velocities. It gives us the tool to conclude on the vacuum wave frequency.

Subjective positions:

1. Radial observer velocity $\mathbf{v}_{(B)}$ as that subjective inertial system:

$$\mathbf{v}_{(B)} \, . \qquad (1.2,12)$$

2. Radial light source velocity $\mathbf{v}_{(Q)}$ on the platform:

$$\mathbf{v}_{(Q)} \qquad (1.2,13)$$

Both velocities are coming from the subjective observation.

3. Relative radial velocity $\mathbf{v}_r$ expressed as subtraction velocity between observer and Light source:

$$\mathbf{v}_r = \mathbf{v}_{(B)} + \mathbf{v}_{(Q)} \qquad (1.2,14)$$

For example, the source is escaping with the same velocity amount like the observer is falling to the platform:

$$v_r = -v_{(B)} + v_{(Q)} = 0 \, .$$

Those additions of velocities are objective then, if they form differences.

4. Einstein's addition velocity $v_E$ of the amounts of these subjective velocities $v_{(B)}$ and

$v_{(Q)}$ are valid by relativistically escaping of both bodies relatively to a reference point on their platform against each other or falling of both. It is a subjective correction of subjective impressions anyway:

$$v_E = (v_{(B)} + v_{(Q)}) /(1 + v_{(B)} \times v_{(Q)} /c^2) \qquad (1.2,15)$$

So to speak the equation (1.2,15) is also that subjective addition theorem of objective radial velocities $v_{v(B)}$ and $v_{v(Q)}$:

$$v_E = (v_{v(B)} + v_{v(Q)}) /(1 + v_{v(B)} \times v_{v(Q)} /c^2) \qquad \text{Einstein} \qquad (1.2,16)$$

Really objective positions:

| | | | |
|---|---|---|---|
| 5. | Absolute vacuum velocity<br>Of wavequantum interactions | : | $\mathbf{c}_v$ |
| 6 a) | Velocity of light source in vacuum | : | $\mathbf{v}_{v(Q)}$ |
| 6 b) | Observer velocity of light in vacuum | : | $\mathbf{v}_{v(B)}$ |
| 6 c) | Platform velocity in vacuum | : | $\mathbf{v}_{v(P)}$ |
| 7. | Momentum transfer velocity in vacuum | : | $\mathbf{v}_q$ |

From this we find the following equation system of velocity vectors in the absolute space of vacuum (x, y, z coordinates):

Subjective, but made objective: (1.2,14) and (1.2,15).

Objective: (1.1,3) and the following equations with the sign of fall or escape velocities relatively to a definition of vacuum:

$$\mathbf{v}_{(B)} = \mathbf{v}_{v(B)} - \mathbf{v}_{v(P)} \qquad (1.2,17)$$

$$\mathbf{v}_{(Q)} = \mathbf{v}_{v(Q)} - \mathbf{v}_{v(P)} \qquad (1.2,18)$$

$$\mathbf{v}_{(B)} = \mathbf{v}_{v(B)} - \mathbf{v}_{v(Q)} + \mathbf{v}_{(Q)} \,. \qquad (1.2,19)$$

It is how the equations (1.2,9) and (1.2,10) show us the true relationship can be only obtained by blue or red shifts on the objective velocity of an absorber or an emitter in the vacuum. Consequently, absolute measurements with light would make appearing mistakes, which are caused from the small absolute velocity of Earth including its Galaxy system going in vacuum of universe. Thus, the representative people thought about a light ether theory. Under which conditions is there an absolute measuring of the light, actually?

Under the conditions of rotations of radiating bodies (like electron levels in atom shell, cyclotron radiation) or of the reflection of light ways, the changing of absolute conditions are compensated by this short term as follows:

$$\bar{v}_q = ½(v_{q,\,to} + v_{q,\,back}) \qquad (1.2,20)$$

$$v_{q,\,to} = c_v - v_v \qquad v_{q,\,back} = c_v + v_v \qquad \bar{\mathbf{v}}_\mathbf{q} = ½(c_v - v_v + c_v + v_v) = \mathbf{c_v} \,.$$

Neither Michelson nor other researchers could measure another velocity than $c_v$ under reflection conditions and non-relativistic rotation speed of apparature! Because regarding of light there are no exceptions, one well never can absolutely measure light velocity.

We show the agreement of objective absolute amounts and of subjective relative amounts with examples:

I. *Doppler's R*ed Shift of Wave Frequency

A transmitter/ receiver (1) and a transmitter/ receiver (2) are escaping radially with vacuum velocities relatively the transmitter/ receiver (3), which is resting between both on an arbitrary point. Here are given:

The unit wave frequency $f_o$ in vacuum rest of all the three transmitters/ receivers.

1. Velocity $v_{v\,(1)} = +200{,}000{,}000$ m/s = $v_{vF(1)}$
2. Velocity $v_{v(2)} = +299{,}750{,}000$ m/s = $v_{vF(2)}$
3. Velocity $v_{v(3)} = 0$ m/s.

Solution 1:
1. Red shift $f_{RV1}'$ over vacuum relations = $f_{ov}$/ 2.24.
2. Red shift $f_{RV2}'$ over vacuum relations = $f_{ov/}$ 118.83.

Receiver 3 measures both red shifts. Between 1 and 2 now appears the third possibility of calculation of Doppler's shift by appointment this equation (1.2,7) once again with the second shift velocity. Thus, the red shift is shifted to the red additionally. Especially, this procedure gives the red shift we were searching for:

$$f_{RV}'' = \frac{f_{ov} \times (1 - \mathbf{v}_{vr(1)}/c_v) \times (1 - \mathbf{v}_{vr(2)}/c_v)}{[(1 - v_{vr(1)}^2/c_v^2)(1 - v_{vr(2)}^2/c_v^2)]^{1/2}} \quad . \qquad (1.2,21)$$

We get the shift between transmitter/ receiver 1 and transmitter/ receiver 2:

$$f_{RV}'' = f_{ov}/265.94 \; .$$

The red shift between both over the vacuum relations is $f_{RV}'' = f_{ov}$ / 265.94.

This red shift $f_{RV}''$ can be understood as the following relation:

$$f_{RV}'' = f_{RV1}' \times f_{RV2}' / f_{ov} \; ; \qquad (1.2,22)$$

Which means: first vacuum shift multiplied with second vacuum shift to the less shifted wave frequency in vacuum rest $f_{ov}$. In universe, where all bodies are moved relatively to the vacuum, this only can be the visible spectrum shift!

Solution 2:
If we calculate over the subjective equation of Einstein (1.2,16) we get the "sum" of the absolute velocities in vacuum as fictive velocity $v_E$ that we are able to indicate:

$$v_E = 299{,}783{,}980.02 \text{ m/s}.$$

With the general and simple square Doppler's shift (1.2,3) we get:

$$f_{RV(E)}' = f_{ov} / 265.94 \; .$$

In this respect, the subjective correction of relativity of Einstein agrees with the objective reality in both shifts.

Mathematical proof of equivalence between absolute equation (1.2,16) and subjective Einstein-relations (1.2,21)

To do this, we have to calculate both equations of red shift completely. Then we must compare their terms. For Einstein-relations, we set in vacuum velocities. After it, we calculate then. The result of both equations (1.2,17) and (1.2,21) with $v_E = v_v + v_F$ agree

$$f_{RV(E)}' = f_{RV}'' = f_{ov} \frac{\sqrt{(\text{numerator})}}{\sqrt{(\text{denominator})}} \qquad \begin{matrix} v' = v_{v(1)} \\ v'' = v_{v(2)} \end{matrix}$$

Numerator = $c^4 + v'^2v''^2 - c^2v'^2 - c^2v''^2$ ,

Denominator = $c^4 + 4c^2v'v'' - 2c^3v' - 2c^3v'' + v'^2v''^2 - 2cv'^2v'' - 2cv'v''^2 + c^2v'^2 + c^2v''^2$ .

What does the equality mean? Does it mean equivalent positions? Should the experiment then prove, which position of them is only right? No, it doesn't! Already the equality shows that both positions are able to take place. Respectively, our axiom assuming the objective existence of stationary vacuum, we find that the objective as well as the subjective position are giving correct results and that subjectivity is subordinated the to the objectivity. The next step can only consist of the check of the expediency of our systematics.

II. *Doppler's* Blue Shift in Absolute Vacuum

The same relationship of spectrum shift can be found with equation (1.2,10), which are set into each other:

$$f_{BV}'' = f_{BV1}' \times f_{BV2}' / f_{ov} \quad . \qquad (1.2,23)$$

III. Non-Shift or Relative Shift of Wave Frequency

Essentially, a non-shift of wave frequencies always appears, if both – observer and light source – despite of diverse changes of velocity of its reference system to each other, remain a constant position:

$$f_{RVBV}'' = f_{RV}' \times f_{BV}' / f_o \quad . \qquad (1.2,24)$$

The red shift with eq. (1.2,9) is to multiply then with a blue shift (1.2,10). This procedure yields always the value of one under the above called conditions or otherwise a relatively blue or red shifted wave frequency resulting $f_{RVBV}''$.

## 2. **United Field Theory of Electrogravitation**

### 2.1. Accepted Fundamental Theories

The theory on hand is based on essential contents of the following fundamental theories:

1. General Relativity Theory (Einstein, 1915/16), briefly GRT,
2. Special Relativity Theory (Einstein, 1905), SRT and Light Quantum Theory by him,
3. Wavequantum theoretical bases of the "Quantum Mechanics" or "Wave Mechanics"
   "Quantum Theory", "Quantum Electro Dynamics, QED"
   (Planck, 1900), (De Broglie, 1924), (Schrödinger, 1926), (Born, 1926),
   (Heisenberg, 1927), (Dirac, 1928),

4. Maxwell's Electrodynamics (Maxwell, 1855), (H. Hertz, 1886),
5. Thermodynamics (system of balance and irreversible thermodynamics),
6. Dialectical Philosophy (Hegel, 1817).

Since our work does not stand in basic contradictions to this above called theories but in terminology, interpretation and systematic contradictions, it does not go out from the repetition of their fundamental equations, but it uses their generally recognized solution equations or their subordinated equations of signed literature. The frame of the theory on hand would otherwise be broken up, which consists of the derivative of a more abstract area of knowledge of the unity of fields. In addition, this task shows that the present theories aren't neglected fundamentally, but they are newly ordered for unification.

After the recommendation of Einstein, we proceeded the interpretation of a concrete solution, which was unknown by General Relativity Theory – the **Oscillator Solution.** With this, the base of United Field Theory could be created. So the **real primacy** of matter was found. Present science still is favoring going on the way of the continued calculation on the paths of the General Relativity Theory – although of tensor algebra –, but we went back from the clouds of the search after the $n^{th}$ dimension to the simple reality of the first dimension of Creation.

The main solutions of the General Relativity Theory find their extension in a more meaningful coherence of a solution complex of the non-stationary Black-White Hole into suborder of divergent and convergent non-stationary Black-White Holes. The priority of matter is found here. It consists of cosms' features (charges; rest masses), which exist as particle of the matter, as stationary particle vacuum and as universe itself. Consequently, the necessity remains to subject the equation symbolism to the unification endeavors of the new field theory and to compare the present and the new interpretation to the results partly.

We like to see the cognitions in agreement of the ideological and physical concepts with the installation of matter that were already expected in such a theory consequently. This way, here the essence of Hegel's philosophy is based. At the same time, it is confirmed as the principle of determination.

In the following section, the taken foundations are condensed and systematized to the premises of the **Electrogravitation** connecting them with **Oscillator Solution** of General Relativity Theory. Offer of following solutions and solutions corresponding with them serves the aim to refer to the expediency of the oscillator-solution as a superstructure of the union of all existing theories. The "Quarks Theory" and the "Quantum Chromo Dynamics, QCD", are excluded of this work, because they seem to be far away from the here given systematics giving as well as nothing to the real particles as wavequantum theories.

## 2.2. Matter Concept

Theses:

> Material phenomena would only be ascertainable on the one hand in separate way with the philosophical and on the other hand with the physical concept of matter. The combination of both concepts to a common setting would allow neither the physics nor the philosophy. Who nevertheless dares the union can use neither the value of a work of the philosophy nor one work of the physics.

Antitheses:

> It is high time to produce a durable unit between the philosophy of life on the first side and the opinion of the world by means of the physics on the other side.

The world philosophy is indicated by the subjective opinion of conflicting groups. Mathematics of physics is able to compose the models fundamentally and more exactly than maxims of subjectively coloring formulated words have been able to proceed. In the beginning, therefore the above called matter concept shall be put into the unity of both a philosophical and a physical way:

The **matter** is the **illustration** of the **closed movement** of the **moved anything**.

It arises as the ideational illustration and as a philosophical category, which is alienable about material information channels. The matter is objectively no subjective mirroring but real anyway. In this respect, one may not disqualify the matter subjectively and idealistically to pure philosophy, if the group of thinkers who wants to make believe they were philosophers is not able to describe the matter truthfully. We rather find the opinion of the real world in the objective reality. Philosophy is written by the realistic physics. By means of mathematical models, the illustration of the closed movement of something immaterial moved anything producing that thing what is called matter constructs physical category of matter.

Under the conception of **matter** we also understand this **objective reality**, which the man is reflecting with his **concepts of space-time-unit** in the sense of its **sections of finiteness**.

The finiteness always announces an end. If a movement is led to the end, then it has to perform a circulation, no matter if the orbit is actually a circle now. Every movement yields such an end; every motion orbit can be smoothed up to a circumference. Extending and following retracting of an arm is only one example of material moving events those are always lead back on a different way than the way came from.

The matter is actually given independently on our will. For mankind, matter would be a drawing, which is made by wave phenomena moving particles. The picture of the matter is only based on the motion concepts in way (space of 3 distance dimensions) and time, which always include a relative start and just a relative end. In the cause of its origin, matter consists of an objectively existing base of which no concepts are applicable comparing them with the phenomena of matter themselves. This base is moved in limits after its installation. It cannot be finished by mankind but influenced in limited areas by limited connecting bodies to a variety.

The Matter consists of non-matter. It was formed by movement of non-matter. Thus, **zero-dimension,** the spacetime and its maximum three dimensions came from. They only mean the description of three way coordinates and their three time coordinates, which are in order to them: $r_{(x,y,z)}$, $t_{(x,y,z)}$. Really waytime r, t is nothing else than a different word for movement. Consequently, the two times three defined dimensions do not exist objectively but only this one – the movement. There isn't any independently fourth dimension as it was suspected in the time. The **movement** itself is matter. We see this and define this.

Movement spaces closed into themselves insulate the own material against other movement spaces. These are Black-White Holes those isolated mass M isn't their external mass m under the same observation. Such movement spaces with independent mass formation would be isolated systems, if they would exchange energy or substance themselves (mass in shape of cosms) to the outside: they don't! Only then, if energy is forced to them they "feel" arranged for an interaction that is giving the impression of a closed system. Never masses would be exchanged during an open process of closed systems. Isolated cosms only can be exchanged "secretly", thus imperceptibly swapped at the inside of isolated system. This way, the type of cosm or of a particle is changed. There are improper cosms. These are protocosms, which are open systems condensed from the beginning. They are flying out their isolated packages by anticollapse (evaporation): mass and energy. At given time, these opening products will be packed away again by the hot collapse (condensation) supported by radiation.

The **time** *doesn't* exist. Its concept is a human fiction. The **way** doesn't exist just as the **time**; also it is nothing else than an illusion of man. Way and time united consist of the **movement**. If a movement could turn around on a line-type and dimensionless way as a semicircle bow to the starting point directly, then there would also be the reversion of time besides the way inversion, which was just performed. Since the matter doesn't create any dimensionless and line-type movements, the material movement runs like **inverse loop** in principle, ideally seen in an **arc** (lat. **arcus**), what we shall prove here. Although both ideal way inversion and ideal reversion of time belong to the empire of illusions. The waytime runs only forward, so to say: the program of matter installation and reinstallation runs only forward! One can switch himself on by the waytime dilation into given program flows - but just forward. You can travel into a future state of matter, which is a reborn analogy of the past.

The effect line of the waytime goes in the closed arc. It is a closed time line (see Goedel's solution, 4.2.5) like a closed way line, too. There is the finiteness of all the things! The combination of any processes of the matter movement, man recognized as causality. These are effect chains. The highlight of the cognition consisted of which the meshing of causalities was recognized. This system of the branching determination or the determinations led in different teachings of the dialectic. From this, only the fact is left today that all elements of an oscillator don't only form a totally deterministic system causal-chain-likely but also connected up to each other actually. This means that the property is given to the man to feel the matter and its processes in space and time relations only for which the man found concepts of reflection. Should the demon of the determinism be reborn? No, he is not. We will relativize it. At first, we see:

> The matter movement is based on a constant repetition of an originally given movement of anything, which was moved.

Historically one assumed the concept of substance to find there some real body. In the last end, we see that the science examines a hierarchy of vibrating bubbles. The bubble structure only represents that matter. Of what it however consists to be able to form bubbles isn't absolutely comparable with the bubbles themselves. Well, one will never find the truthful substance in the end, which one believed to find it, historically. The **moved anything** is the true pre-substance, which determines each resulted motions. Its movement projects an oscillating picture. We call that picture: **matter**. Consequently, the pre-substance is non-material. However, it forms the necessity of matter. Therefore, the moved anything is already a feature of basic material in the limiting value – therefore, it is the real substance in ideal singular – the ideal substance. Any physical and chemical concepts always refer to motion descriptions never on the things those are really hidden behind the movement.

The ideal substance existing generally, which special closed movement only led to the matter, has the following definition:

> The **ideal substance** is **moving without any limit**. It is the **open anything, which is in motion.**

There is no oscillation. If an ideal substance is moved openly, the movement isn't traceable with the means of the matter - by means of the closed movement or oscillation. The soul is the productive picture of the material thought-processes structured openly. Material thought-processes are to be considered as psyche, and therefore they are physical. The soul like also processes that install the matter aren't traceable, because there is anything moving, which one cannot bind into oscillating processes and to compare to them:

> The **soul** is the **reflection** of the **open movement of anything moved**.

The emotional processes are the ascertainable movement to the illustration of the same into the oscillation of the matter. Thinking is a material operation to the inside. The result of the emotional job is divided into both directions: firstly, it gives a materially savable picture into the psyche. Secondly, it gives a non-material picture that is not put into the psyche – that is the outside soul. In this respect, we classify emotional processes as physical processes completely. These are physical processes. Gathered up. they form a material or a physical unity. However, the soul is a product of the matter, which comes out from the matter. Therefore, the sentence is valid:

> Phenomena of psyche and soul are **not** equivalent. Psyche is physical. Soul non-material.

Many decades one asserts using the simple translation concept of "soul" into Greek and that using of the translated concept of "psyche" for physically material nerves and thinking processes, the soul would be form a unity with the body, but the psyche does so. The listed proofs are material therefore physical from which follows that the so-understood psyche as complex of nerve processes works purely physically like even each other part of the body, too.

Any operations into brain and nerves are materially explicable like also in the cells. In this respect, psychology represents the most confused field of science of the presence. It doesn't know with what it actually works – with the immaterial soul that one cannot research at all (otherwise one also could

investigate the paradise) or with the material processes of nerves. Psychology asserts both is the same with what all problems would be getting off from the world. This opinion but is wrong.

The pictorial nature into motions of ideal substance drawn by the movements of the matter, which reflects relatively to the matter forming from closed movements of ideal substance with material “drawings" or events, actually, is produced into the outside of the matter. The true picture is non-material. Expressed in categories of informatics: a physical system without sense doesn’t process any information. Although an informative system as such is recognized, the information cause - the idea - isn’t comprehensible materially. Therefore, the matter was an informational system from the beginning.

From the inside of the matter, the various movements aren’t able to finish. Every state of motion follows the law: gradual change of the old movement into a new orientation, which was objectively provided for the motion process – that is a program. With this law, one can describe stride of given openings or horizons through the facilities of the matter installations.

This is the unity of locomotion (= quantitative and vectorial increasing movement in the spacetime) and selection from openings (= reorientation of the further movement direction of a special result of the constant movement): the program doesn’t offer any fluent transitions but only gates are opened at which a decision of furthermore branches of the available program will be done. What isn’t provided to the program cannot be created waytime-likely. Unless one changed the program contents, however, also they were able to be revealed to program error or to dead ends. All material phenomena - neither now visible or not - form a complex unit in form of their determination within a closed spacetime system (receptacle clock). The inside of a world consequently represents both, an absolute causality and an ideal determination of all installation processes: a labyrinth - like a much-branched plant that is full of orderly orbits.

The installation is determined.

**Like in a parable, all its elements pass through an own spacetime-like tunnel of the deterministic labyrinth. All gates but are open there to possible junctions. They only can be stridden through with dependence of deterministic forces. Every going through a door opens a horizon new programed.**

From an incorrect idea evolution theorists derived, there would be a "coincidental development" as if all elementary clocks of deterministic transmissions could freely decide on the choice of the junction door through which they “wanted” to go. This kind of arbitrary, not quantized "understanding of evolution", we decline decidedly here as a blown out assumption so-called science in its rudimentary derivation from the last century. However, the absolute determination in the isolated system universe is to call as programmatic origin installation.

It was recognized significantly that the movement of the matter is based on the mutual determination of only two fields in the context of this theory

On the **gravitational field** and on the **electrition field**.

The straps of the gravitational field are filled by the electrical fields. Therefore, they reach the state of electrogravitational matter, as we know it from the example of stable particles of protons and electrons.

Although we examine objects of electrogravitational nature in the honest ambient environment and draw a conclusion from this that the forces are already different in their amount that there cannot be any unity. This view proves as typical briefly, because one only started out of empirical values. In every arbitrarily constructible spacetime or in a cosm, the limit force $F_o$ is the same, no matter if it is an electrical (a “radiation cosm") or a gravitational cosm.

In this respect, no elemental force exists but force relations – more movement relations – of oscillating between the equal phenomena of electrical and gravitational force.

Only the work of an **arbitrariness** could influence the programmatic process of the origin installation. The random component would only arise from such a feature. It is confusing the determination with chaotic components resulting from the wanting of humankind. Thus, the state is an incontrovertible

reality in the meantime: the determination **made chaotically**. We decline the name "deterministic chaos", because it moves the determination of both categories to the head there. The chaos is secondary in our theory.

Who delivers the arbitrariness into the universe through what the determination given primarily is disturbed but not destroyed?

These subjects primarily are the living beings moving arbitrarily of which the man carries the crown of all arbitrariness. Currently, it is the main cause of the chaos component at the determination. The accident caused subjectively, in this respect, becomes an objective factor at the matter in a low value. Over the fields of activity of other living beings in greater separation to the human field of activity, the effects of accidents considerably decrease to zero. The man has been reflected this objective accident factor in ignorance of its subjective origin and has assigned it wrongly into over-estimation of the abilities to the origin of matter, although he would have to look for himself and for his ancestors.

> The matter to itself doesn't represent the chaotic person. A human but is the present prototype of an anarchist.

The matter doesn't mix itself up finding then order again by chance. Living beings, the food chains and primarily the man cause confusion components to matter. This period, he watches like the proper matter is forced to restore the order, and in his stupidity, he is astonished at the "self-organization of the chaos".

At the start of installation, the first living beings lived a priori on hydrogen bodies, which fed themselves of each other in the universe on the base. They were immediately able to synthesize primary dead bodies to helium with the program – the offered structureless hydrogen clouds were changed (protons, deuterons, tritons). They died out in the course of the changed conditions of life while its descendant population was already adapted to the utilization of the heavier nuclides at first according to that program. The next population lived exactly by the physical of the living beings faded and synthesized heavier chemical elements from the constituents as well as hydrogen (deuterium and tritium). **The program proceeded like a divergently thick bundle of corridors to which the future is assigned.** It widens itself and installs the systems, from which everything without a convergence follows, passes and becomes reborn. Today's physics however assumes in the beginning a singularity of convergently bend lines on whose development shall be coincidental after this. We show that the unique convergence is wrong.

So this is the reason of another game of oscillation: the ideal life organizes and decreases the entropy at this. The death disorganizes or increases the entropy. Substructured living beings have the chance to be organized and to be structured again after a destruction, therefore, they have the ability of reorganization. This means: they hold back the increasing entropy within their body, or they decrease it during growth or even at the erection of the cells and their structures. Because of death, the disorder and the excretory products are rising. The death cannot keep itself. Life but is programed on the reorganization by the fact that each of its descendants has already performed a scheduled adaptation to the new conditions. If the adjustment possibilities aren't provided in the program a priori, a living being just cannot adapt! This race or manner dies out by program. Life then can defeat the death, if everything is able to exhaust dead bodies and reach a new kind of organization. Such an operation of the total rebirth exists in the origin of the universe - death and rebirth at the same state: it is the zero crossing of the oscillation of the universal matter! That means: every stable particle represents ideal life with the ideal ability of reorganization. Secondary life, which is substructured at the inside of such a cosm, is not able to reorganize all the dead bodies back to life (2$^{nd}$ main clause of thermodynamics, TD). Therefore, the death forms out sediment of substance and of energy of all faded living bodies dispersed in universe. Just only the universe itself does not die. Consequently its stable particles do not die.

The substructured life is marked by five deterministic properties:

1$^{st}$ Being born
2$^{nd}$ Decreasing entropy or keeping with an informative ability of organization,
3$^{rd}$ Fathering once more life and living on,
4$^{th}$ Come to metabolism and ages by increasing entropy,

5th Death,
6th Being reborn.

Externally seen, the ideal life works only with exactly 1, 5 and 6. The operations take place inside of 2 to 4. Being born and being reborn is the perfect expression of oscillating, of vibrating between repeatable states. Every single particle as a universal oscillator actually lives ideally as the universe itself does.

Complete life is coupled with stable particles and the universe itself. Substructured life, which is built from particle in the features of atoms and molecules, only will be reborn in a new existence with its death and its birth of its receptacle particle. During the meantime, the substructure goes its secondary way of reproduction. Ideal life lives by the given property itself. Substructured life lives by the other lives. This is an analogon between unstable particles, too, (because they consist of everlasting stable particles, which include a surplus of energy that must come out again) and of stable particles (which are eternal things - energy is potency of structure). It will be wrong to relate the substructured life – briefly our life – just on organic chemistry. Life, which is bound to carbon, is just present life and it is possibly the last life on Earth. To every time before, there was a feature of life that was coupled with other basic combinations and their transformations.

If we see this process of installation of **life from life** and of sedimentation of death in the shape of confusion used by the life to create relatively new order, so the man arises on a time point of installation where before him already a lot of physical bigger and essentially warmer life and gigantic life was existing. We begin with the first **pre-types of cosms**, which were similar to the cosms: **protocosms** – spheres filled of programed corridors. The descendants of them synthesized gradually heavier chemical elements and continued this process of the stars to the protoplanets and planets, which residents synthesized from simple chemical combinations of their bodies more complicated combinations. On Earth like on each other planet, they left a sphere of entropy in the shape of a planet body. This is a graveyard with the character of a confusion component. That means: the man is in the trend. He is the expression of a universal way to more confusion. He also has the potency to create more order like all living beings, too, not only unconsciously by the isolated utilization in their bodies but also consciously by active doing of will. This way, the coupling of living beings who were living in gas with the sedimentation was programmatically possible. They were landing and flying up or staying there. In this respect, it was never a simple “evolution” from water to the land. The gas was the first medium of life. Fluid was given secondarily. Parallelly, the central body of death started to condense at which surface a part of fluid was in evolution. So there were the programs of transformation of living beings in gas, in fluid and on solid bodies (also in disperse features).

The stable electrogravitational particles including that stable particle, which is the receptacle universe and inclusive those stable particles, which are closed by them, are the projection of the true and primary life. They live in vacuum at the bottom of their existence, and they live in the electrogravitational field – in the reality of their existence. The particles consist of vacuum from particles and waves – from light and gravitational waves -, because they have a rebirth after death immediately. This is the oscillation of the finite life in the mirror of the infinity of its repetition. The structures of the substructured life consist of those really living beings who are able for no immediate but for the indirect rebirth.

The ideal like the substructured beings can organize their inside by program. The so-called space quantizing is the origin of the order of the living body - an informative meshing. Such a life like our phenomenon of temporarily organic life is able for propagation of almost the same kind information structures on base of carbon-hydrogen-nitrogen-oxygen. Propagation of ideal life is a process of giving birth from the implantation of light and bottom into a given being – for example to the proton. This way, it will become a pair of beings, for example, a pair of electron-positron or more.

The substructured life hasn’t some ideal twin, which was born with it as an anti-part but it has a substructured twin, which is born as an angular momentum, anti-corpuscle on a celestial body, which is a twin itself and which is exactly on the other side of the center of the system. Today the non-identical proto-twin of the Earth cannot be observed as such a one – the Mars (cf. section 4.10.3.), now I think it’s rather the Venus. In our Galaxy, a second arm is relatively on the other side as a twin of the galaxy arm in which the Sun is running.

The symmetries of particles of substructured matter only exist qualitatively. They will be broken by quantitative differences from the beginning at the assumed oscillation point of zero.

There can strangely be only one pair in the field of the living particles. Consequently, the program of those particles controls the possible formation of particle pairs with its genetic code. The decay of pairs, which were formed from unstable particles, always arises some determined states of stable particles but never an accidental particle after a turn of decays. The "Quantum Theories" nevertheless claim that particles could be united to greater ones, and they would find together accidentally. The material installation is always a process of the installation of structures as agreed among a very amount of interaction conditions, which at first were determined close together.

Life cannot be transformed without some programed identity like the particles, too. This means: While electrons are destabilized by energy followed by the reflection of determined unstable leptons, which are really not light anymore, respectively to the names of these particles – muons, tauons – they are becoming heavier up to the mass of gravitons of about $2 \times 10^{-9}$ kg and – this is important – these particle remain as genetic inverse transducer to the electrons where they came from. Never there protons will be formed in any quantitative asymmetry! It is just the same with protocosms and protosteps of organic life. Nevertheless, of all the pre-living beings, which similarity was going to a divergence at the originality when they were especially big and hot, all they have a programed identity: they carry the high branched program of the formation of species into themselves. At the junction-line of species, there wasn't and there isn't any accident. There were similarities, which make us today speak about an "evolutionary relationship", which never existed as a transformation relationship. You have to think about the formation of mankind like about the decay of a protocosm, which sub-protos open up a turn of living lines. These subprotos themselves opened their own sub-programs. The breadth of such a program is racial. A quite considerable lot of substances must be annihilated virtually at these processes: the existing living protein (L-amino acids, oriented to the left) doesn't equal the synthesized protein (D and L for 1:1). There is the possibility that living beings have died out because in the course of the local extension their living anti-beings touched with them and from their propagation didn't come any survival beings. Forefathers of the programs from younger past can have survived until the presence.

The man already lay in the lap of a definite living being that was hot like a star, which was almost the same in its shape like those living beings, which had the lions or the other species of animals inside. The supposition certainly shouldn't be too courageous that a definite kind of pre-living being therefore existed at the saurian times and which was similar to them and which was at the same time a pre-man like a pre-monkey. Today we know that there weren't only colossal dinosaurs to which we give special attention but a whole world of this special kind of life with minimal beings. Under them, certainly a being had the program of formation of mankind. One day it gave birth to descendants, which seemed to come into the world spontaneously but after a programed time with the programed qualities of different living beings of the future. Everything only looks just like a random evolution.

The protocosms still start with their reinstallation before the last life-forms have died in the space. That radiation, which was lost at their distribution after annihilation phase, returns back after its round in universe radiation cosm. Then, it burns back the matter to that state before, to the protocosms. As well as the entropy of the death like the secretions and the capriciousness of intelligent life and still viable things will be packed and destroyed in the heat newly organized. After this, they will be led to the rebirth with their new entropy of zero and a new arbitrariness component of zero. At half a period, the world starts once again, in which the entropy and the arbitrariness lead to the accident reaching a relative maximum that is not the possible maximum guiding to infiniteness. Therefore, the next end comes surprisingly just like the previous end.

## 2.3. Electrogravitation according to Maxwell

Thesis:

> All the forces would be united into one elemental force.

During this unification, particles would be melting apart. The well-known forces like weak force, strong force, electric force, gravitational force and their sub-features would be frozen out from this elemental force in form of particles developed by kinetic energy at the expression of the temperature. In this respect, a so-called Big Bang and an elementary force would be caused.

Antithesis:

> In vacuum, there is an ideal oscillator. It forms the real quantum - the **cosm**. The so-called forces are exposed with us as parity of the electromagnetism and the gravitomagnetism and their effects: rare effect instead of "weak force", frequent effect instead of "strong force" and intermediate effect instead of "hyperweak force". We represent the atomic-shell forces and the nuclear forces as the result of the interaction of relativistic electro- and gravitomagnetic forces.

Vacuum is based on the contrast of two primary kinds of movement of the moved anything – of two force producers, which exist of their particles – these are also cosms of a cosm hierarchy. We explain the forces as descendants of gravitation and electrition. Their parity is not able to finish since both oscillate with each other and against each other. Thus, an elementary force is more a Small Bang than a Big Bang. The matter then is made like geometry.

Analogously to Maxwell (1831-1879) and Hertz (1857-1894), we formulate Maxwell's equations and the user equations in electrogravitational cover and give the connection of the spreading **cosm theory of all the fields** (United Field Theory), which we call **electrogravitation** briefly under respect of relativity theory and of the wavequantum theory, here made fundamentally new.

We can cause this step with the **equivalence** of the electrition and the gravitation. Consequently, the theory of the gravitational field may be an analogon of the electrition field. Our attempt is provable from the General Relativity Theory. It consequently isn't the recollection on the Maxwell theory. With the example of the simpler Maxwell Theory, we want to show some analogon.

The use of the concept "monopole" is only an expression of the observer impression. The material observer finds some primary two-poles as one-poles, because he as a part of that matter took part of an irreversible position in the field of primary dipoles, which come from limited motion of the moved anything with the vacuum light velocity ($E = m\,c^2$). Such monopoles do not exist objectively, but they are given in the observer impression subjectively.

The well-known example is the appointment of the photons and fallons as "bosons", because they are continuing the interacting energy with light velocity v=c. In this process, they don't change their magnetic poles. Exactly, particle charges of electric and gravitational forces are not able to change their poles. Even the root of $E = mc^2$ would show us the consequence of bipolar states of energetic and solid existence: $\pm\sqrt{E} = \pm\sqrt{m}\mathbf{c}$, where c is also a vector effect.
The principles are called as follows:

> The spacetime-like and this way curved movements (the currents in the waytime union) of the electric or of the gravitational or of the electrogravitational "monopole" or of a quantity of such "monopoles" produce the electric or the gravitational or the electrogravitational dipole or a quantity of such dipoles – shortly called the **MAGNET**. Here, **wavequantum formation (dipole or magnet)** is given from the movement of a single **cosm (objectively a dipole, subjectively a monopole, a charge)** or a quantity of some cosms (subjective distribution of monopoles in the spacetime).

Any moved charge e or/and a mass m are shifting the resting polarization of the field of vacuum cosms in such a way that one angular momentum **l** is saved in the curved movement, which has the orientation on the orbit radius R, on the orbit velocity v, on the moved charge quantity Q or/and the mass m and on the direction of these magnitudes ($\mathbf{E_w} = \mathbf{m\ v}\ c$; $\mathbf{p_w} = \mathbf{m\ v}$; $\mathbf{l} = \mathbf{p_w}\ \mathbf{R}$, cf. section 2.4.).

> Furthermore the waytime-like and curved movements of the electric or of the gravitational or of the electrogravitational "monopole" or of the dipole (magnet) are determined of the waytime-like movements of the electric or of the gravitational or of the electrogravitational dipole (magnet) or "monopole". Just like this, the magnetic dipoles or the charges/masses shift the vacuum cosms. The magnetized or polarized field of vacuum quanta works on dipoles, charges and masses itself.

Consequently, here is given the formation of movement or the continuation of movement from the existence of a moved wavequantum or a quantity of some moved wavequanta or of some charges: in the dipole field of a moved wavequantum dipoles or move monopoles are influenced in their movement. We call this event as **electrogravitational induction**.

Remark on the following explanations: the gravitational measurement unit is here 1/s, therefore the measurement of an angular velocity $\omega_B$ or of a frequency $f_B$. In this respect, the wavequantum frequency was already reflected as component of the quantized energy equation (2.4,3) without having seen Planck's constant h before. At the formation of a wavequantum by the movement of monopoles, in the circular arc energy $E_w$ is stored – potentialized during at the delay (monopole-field strength) the energy difference of eq. (2.4,14) is emitted with radiation $\Delta E_{(n)}$ (cf. page 318). Any movements of the electrogravitational charges are subject to the laws of the relativity theory.

Choosing a time-like movement $t_v$ in vacuum relatively to the material movement, one substitutes the way-like movement $s_v$ in the vacuum space causing the objectively given maximum measurement of moving of matter, which has its shape in the constant of the vacuum wave velocity $c_v$, briefly called c:

$$t_v = s_v / c_v \quad . \tag{2.3,1}$$

That constant $c_v$ (the primary movement vector) doesn't say more than 299792458 vacuum meters correspond to one vacuum second. Vice versa, the vacuum meter is an amount of the vacuum time of $3.335641 \times 10^{-9}$ seconds.

At a total curvature of spacetime, matter only can move itself in curvatures inside of maximum waytime-relations. In the curved partial time $t_o$ of the whole possible movement time $\tau_o$, the part of the closed spacetime $R_o$ (corresponds to the amplitude) would be able to reach the electrogravitational radius $r_o = 2R_o$ with vacuum light velocity $c_v$ corresponding equation (2.8,2):

$$t_o = R_o / c_v \ . \tag{2.3,2}$$

The waytime relations are realistic over a circular way $2\pi R_o = \lambda_o$, which is the oscillation length. The Maxwell's equations particularly confirm the bends of the space or of waytime in special measure (cf. section 1.1., page 280).

The fundamental equations of the electrogravitation are as follows:

1. Charge law (cosm law)

$$\text{div}\ \mathbf{D} = \mu_v$$

$$\oiint \mathbf{D}\ d\mathbf{A} = Q \tag{2.3,3}$$

2. Dipole law (wavequantum law)

$$\text{div } \mathbf{B} = 0$$

$$\oiint \mathbf{B}\, d\mathbf{A} = 0 \qquad (2.3,4)$$

3. Law of induction
(Acceleration (delay)-wave frequency law)

$$\text{rot } \mathbf{E} = -\,\partial\mathbf{B}/\partial t$$

$$\oint \mathbf{E}\, d\mathbf{s} = \frac{d}{dt} \int \mathbf{B}\, d\mathbf{A} \qquad (2.3,5)$$

4. Ampere's law (Current-wavequantum-law)

$$\text{rot } \mathbf{H} = \mathbf{j} + \partial\mathbf{D}/\partial t$$

$$\oint \mathbf{H}\, d\mathbf{s} = \mathbf{I} + \frac{d}{dt} \int \mathbf{D}\, d\mathbf{A} \qquad (2.3,6)$$

(cf. /Q 12/, page 80)

**D** = electrogravitational shift
$\mu_v$ = electrogravitational charge density; dipole field constant
**B** = electrogravitational induction
Q = electrogravitational charge quantity or elementary charge $e_o$
**A** = area/cross-section of line/cross-section of movement
**E** = electrogravitational monopole field strength
**H** = electrogravitational dipole field strength
**j** = electrogravitational current density
**I** = electrogravitational current intensity

The "constancy of light velocity" in vacuum has the condition:

$$c_v = 1 / (\varepsilon_o \times \mu_v)^{½} \quad . \qquad (2.3,7)$$

There are $\varepsilon_o$ as monopole field constant (electrition: dielectric constant)

$$\varepsilon_o = 8.85418782 \times 10^{-12} \text{ As /Vm} \qquad \text{(cf. /Q 12/, page 82)}$$

or

$$\varepsilon_o = 8.85418782 \times 10^{-12} \text{ C}^2 \text{ /Nm}^2$$

or gravitationally calculated (see 2.5., page 328)

$$\varepsilon_o = 1.1923504877 \times 10^{9} \text{ kgs}^2 \text{ /m}^3 \text{ ;}$$

and $\mu_v$ as dipole field constant (in the past: electromagnetic field constant or permeability of the vacuum $\mu_o$):

$$\mu_v = 4\pi \times 10^{-7} \text{ N/A}^2 \text{ or in Vs /Am} \qquad \text{(cf. /Q 11/, page 87)}$$

or gravitationally calculated

$\mu_v = 9.33156876 \times 10^{-27}$ m /kg .

After giving the equation, it is shown with (2.3,2) that the equation (2.3,7) sanctions the unity of way and time by constants, which importance is the following: $\varepsilon_o$ is a cosm constant, but $\mu_v$ is going to be a wavequantum constant. Maxwell's theory had reached a model character in ignorance of the relativity and the quantizations, which could not draw the reality better by uncertain descriptions. New equations have to be connected with relativistic and quantum mechanics reality, and unity without above called equations would be becoming invalid.

This dipole law says that the impression of monopoles is a fiction of relativistic dipole field because of the charge law. Unfortunately, the present terminology is an incompleteness of the "constancy of the charge". The electrogravitational charge (if electric or gravitational mass of cosm) follows the relativistic changes: the oscillation dimensions of the cosms are dependent on velocity. All charges are exclusively constant in vacuum rest, originally.

The axioms supported by the relativity theory arise from this attempt:

1. Gravitation and electrition are equal. They form both a unity causing each other and an in principle contrasting in the shape of an effect mirror symmetry.

2. Gravitation and electrition are effective in isolated, closed, or open spacetimes following the principle of a cosm. So, the theory forms an organic completeness by the relativity theory: the closed cosm, if electric or gravitational or both, represents a corpuscle that is drawn by specific movements in the inside – the real primary quantum.

3. Both processes yield the electrogravitation in their unity.

4. The elementary charges of gravitation $m_{gq}$ in gram and the elementary charges of electrition $e_o$ in Coulomb are the same in their fore action. Over their constant $k_q$ = 1.6 billion kilogram per Coulomb, they are able to be calculated into each other.

5. Because of the condition of both kinds of movements of matter, the spacetimes formed from them are ideal oscillators – these are ideal vibrators (transmitters, receivers, resonators) or **giver or oscillation phenomena**. A wave isn't an oscillator after our opinion but its exchange function: waves are sent and waves are received; momenta are exchanged. Wavequanta are not the same as real particles.

6. The relative motion of these ideal oscillators relatively to the stationary vacuum shows an absolute power of the wavequantum function, which is reflecting relations between the oscillators for the observer who is moving with one of the oscillators. These are pure dipole functions.

Only at the indication by the delay (interaction with another magnet), a powerful oscillator (the particle) will be the transmitter of the waves if it is changing a Planck level. Thus, a particle never can be the wave itself but only the origin of the wavequantum. If it emits however waves in the form of wavequantum continuations, the particle then is also no wave but a transmitter. A particle only can have the quality to be "transmitter + receiver, resonator", if it has an oscillation property itself in its own isolated being, which reflects a common movement to the outside. The particle consists of a vibrating cosm. This means: a natural law is given with the Planck's constant h. A cosm doesn't radiate if it has an integer multiple of this constant of its wavequantum in its movement.

Therefore, we show that particles have no wave character but the potency of a transmitter as well as the potency of a receiver in the shape of their relative movements, because they have an isolated oscillation and an outer rotation depended on their movement (see section 2.11.):

> At the change of Planck's condition nh, the **counter decreasing n-x** leads to the radiation of wave energy, the particle is able to make its function of a transmitter! Vice versa, the **counter increasing** is the expression of the behavior of the receiver of wave energy.

A particle is in relationship to the other particles of finite quantity in the receptacle cosm. If it takes energy, it is received radiant energy $\Delta E_{(n)}$. In first regard, this event affects the reduction of the velocity of movement $\Delta v_{rot(n)}$ on the orbit of the way with the symbol $\Delta s$ as on the decreasing kinetic energy $\Delta E_{kin}$ or the acceleration work $\Delta W_{kin}$. In second regard, the height of orbit motion $\Delta R_{rot(n)}$ will be larger (the reason is: the smaller the velocity the less the relatively free orbit is curved in the charge-free vacuum, the larger is the orbit radius). From this process results the increase of potential energy $\Delta E_{pot}$ or the stroke work $\Delta W_{pot}$.

A particle never moves on a straight line but always in Planck's relationship on Einstein's curved orbit. That radius is $R_{rot}$. The magnetic field strength is concentrated to the center of the orbit $R_{rot} = 0$. In this respect, the drawing of orbit in every differential dR has a center of force in $R_{rot} = 0$, which is practically the **magnetic center** of a wave mass $m_w$. At first, it appears in its interactions as if it would be an analogon on the center of gravity of an ordinary particle resting mass $m_o$. Therefore, there is the untreated mistake of physics to the question of the corpuscular character to this day. So we find that momentum transmissions are only running over these wavequanta. The particle isn't able to scan this way. Facing to the magnetic center – the expression of the wavequantum vertically standing angular momentum or effect – the particle gets a different orbit height $R_{rot}$ at every arbitrary acceleration. The strangeness appears as follows: With the increase of the stroke work, the diminution of the acceleration work of a particle is accompanied at the same time.

> By the fact that an acceleration work $\Delta W_{kin}$ is carried out at a particle, it learns the decreasing of the stroke work $-\Delta W_{pot}$ at the same time. Every increasing movement forms the diminution of the potential energy. The energy storage fills in the form of the energy of the wavequantum $+\Delta E_w$ furthermore. Finally, the relativistic energy $+\Delta E_A$ of a particle increases. Its cosm oscillates slower for $\Delta E_{(n)}$. Before this, the particle emits the energy surplus in the shape of radiation $-\Delta E_{(n)}$ as the real radiation energy of a wave.

The energy differences will be changed essentially at the electrogravitational particles into electrical wave-energy, converted to insignificant ratio of the charge to the mass also in gravitational waves energy or by the exchange of wavequanta (photons, fallons) bound at the electric charge-anticharge-vacuum and the electromagnetic magon-antimagon-vacuum as well as transferred at the gravitational particle-antiparticle-vacuum and that gravitomagnetic magon-antimagon-vacuum. The electromagnetic quota of the electrogravitational particles seem superficial since the electrical charge - if it is expressed as a mass - is fundamentally larger than the gravitational mass.

## 2.4. Relativistic Electrogravitation

Thesis:

> At present, the "Quantum Mechanics" would present the most precise result next to the reality because it is regarded as basis of the expected calibrating field theory for a union of the field theories. There wouldn't be an alternative to this kind of understanding of quanta. It isn't expected either.

Antithesis:

> Since Planck, one speaks about the quanta, and these aren't the "quanta" as such anyway, but the **wavequanta**, quite simple effects of the electric and the gravitationally determined magnetic fields!

With the help of the dichotomy, it turns out well in relativistic form to explain the gravitational and electrical matter and to create the conditions to make a roof above Maxwell's electrodynamics by the knowledge of relativistic electrogravitation:

**1. Cosms (as primary quanta),**
**2. Wavequanta (in the present understanding of quanta but secondary quanta)**

Planck discovered the radiation law of electromagnetic waves. From the opinion of De Broglie, one is mistaken in the assumption, particles like electrons would be a De-Broglie-wave themselves.

The moving rest mass with its momentum $p = m \times v$ (equation (2.4,2)) didn't change into radiation work with $c^2$ but the mass difference $\Delta m_{(n)}$ between the rest mass $m_{Ao}$ and the relativistic mass $m_A$, which is able to radiate! This is content of Hamilton's operator. Moved particle or corpuscles emit an electromagnetic or briefly electrical wave at gravitational energy transitions $n \times h$ on a more down-counting standard into wavequanta. (Remark: it is a terminology problem, either one says electromagnetic or gravitomagnetic wave or electrical wave or electrition wave or gravitational wave although the reality remains equivalent.)

Those wave splitting one rashly called "quanta" instead of calling **wavequanta**. One couldn't know that there are actually **primary quanta** in the form of the cosms before these wavequanta. One stopped at the sign movement functions or wave functions would be "oscillators" with the wave-like change of kinetic energy of a particle vibrating in a potential pot, although the real primary oscillator – the particle itself – remained undiscovered until today. Well, the relativistic energy difference is regarded as able to radiate:

$$\Delta \mathbf{E}_{(n)} = \Delta \mathbf{m}_{(n)} \times c^2. \qquad (2.4,1)$$

Compare the mass defect to this at the relationship in atomic nuclei $\Delta \mathbf{m}_{(n)}$ and the change of the relativistic mass of the electrons in the atomic shell becoming explicable to this in a relativistic unit (see section 2.11. and 4.9.).

The velocity $v_{rot}$ plays a special relativistic role of matter. It cannot be separated from the radius of curved movement $R_{rot}$ that role is to see as generally relativistic (cf. section 1.1.: clock-motion-order and clock-hierarchy-order). In this respect, the unity of rotation velocity and rotation radius is to understand in the wavequantum condition of equation (2.12,8). Actually, the velocity decides about the dimension of relativistic energy $E_A$ at last, which Hamilton part of $\Delta E_{(n)}$ is the indicated radiant energy by the relatively resting observer.

If one seems to arrange the same kinetic energy of a quantity of electrons, they have idealized well the same velocity $v_{rot(n)}$ in their beam. However, nobody can comprehend the taken curvature. Just this bow with the current radius $R_{rot(n)}$ decides about what level n has taken. At first in the space, hardly a condition meets the choice, because every arbitrary position of the curvature shouldn't be carried out.

Every special electron orbit, which is determined by the rotation velocity of electrons $v_{rot(n)}$, by the relativistic electron mass $m_{A(e)}$ and by the electron rotation radius $R_{rot}$, forms out (in the measurable foreground) an electromagnetic and a gravitomagnetic wavequantum, $\bar{\mu}$ and $\hbar$, which is following Huygens' principle. Therefore one indicates the variety in spatially random distribution at the diffraction of the wavequanta in which their magnetic centers of gravity interact with the indicator and in which that fact leads to the mistake of the "position probability of the particles" (see section 2.11.). Although it is just the Interaction Probability of the wavequanta.

We only add a restricted digression into "Quantum Mechanics" terminologically corrected to the wavequanta theory now, so, on the one hand, its connection to the real cosms – the particles – is settled, and, on the other hand, its opinion mistakes are removed about "corpuscle character" of light and of the De-Broglie-wave of "particles". Then the "Quantum Electrodynamics" is a **Wavequantum Electrodynamics, WED**. It is able to connect the our new theory with facts and numbers, but not according to the old terminology. One can see it now as a Wavequantum Gravito-Dynamics, WGD.

With

$$\mathbf{m}_A = \mathbf{m}_o / W_{SRT} \quad \text{or} \quad \mathbf{E}_A = \mathbf{E}_{Ao} / W_{SRT} \quad \text{(/Q 12/, page 277)} \qquad (2.4,1a)$$

the symbol **m** is a vector of the so-called relativistic mass - here it is the deceleration mass - in relations to the other observer masses, also signed with the symbol $\mathbf{m}_A$, if it is relativistic energy $\mathbf{E}_A$. For the absolute relation in the vacuum, we put the index "v" at its location to be made always sure. In the midst of the matter, we however indicate just relativity and so we could save the index. For observers moved along the reversion of the relativity, its moving mass or its energy of motion is valid in the form:

$$\mathbf{E}_B = \mathbf{E}_{Ao} \times W_{SRT} \qquad (2.4,1b)$$

The mass **m** really consists of the part of measured resting mass $\mathbf{m}_0$ or differently marked as $\mathbf{m}_{Ao}$ and of a relativistic part $\Delta\mathbf{m}_{(n)}$, which is the main fact of the real radiation energy $\Delta\mathbf{E}_{(n)}$ :

$$\mathbf{m}_A = \mathbf{m}_{Ao} + \Delta\mathbf{m}_{(n)} , \qquad (2.4,1c)$$

$$\mathbf{E}_A = \mathbf{E}_{Ao} + \Delta\mathbf{E}_{(n)} , \qquad (2.4,1d)$$

In this case, the relativistic energy $E_A$ can be increased or decreased by increase or decrease of corpuscle velocity within the Hamilton equation (2.4,37), where the wavequantum energy $E_w$ is increased or decreased. While the relative velocity of zero ($E_w$ is going to zero), the same equation but gives a second variant with the decrease or the increase of the usual resting energy $E_{Ao}$ – like the mass defect shows it in the atomic nucleus. Now the relativistic energy $E_A = E_{Ao}$ is decreased from $\Delta E_{(n)}$ to the nucleon energy $E_{AN}$:

$$\mathbf{E}_{AN} = \mathbf{E}_{Ao} - \Delta\mathbf{E}_{(n)} , \qquad (2.4,1e)$$

This presupposes that the rest energy changes without that there is a movement of the corpuscle opposite the vacuum. Naturally, this statement is wrong, because the particle executes a rotation despite its apparent external rest: the microcosm is delimited from its oscillation sphere. If two microcosms dive into each other, then it surrenders to the **phenomenal rotation**. It says that in the outside no movement can be observed while at the inside the internal masses $M_1$ and $M_2$ make a relative rotation to their outer masses $m_2$ and $m_1$. Then it gives – as solved in sections 4.6. and 4.9. – the movement dimensions relatively to the vacuum. From this process, the decrease of rest mass arises and also the radiation of the mass defect $\Delta E_{(n)} = c^2\ \Delta m_{(n)}$ with entering into the bonding. At the first time, a uniform explanation of the irradiation of energy is possible here from the change of the speed of the cosm relatively to a second cosm and to the relationship of vacuum at a Planck level of $n < \infty$ down to $n = 1$.

In 1924, De Broglie announced the special character of the moved gravitationally solid corpuscles ("matter waves") after their indication by deceleration. Here the mistake is found: from the beginning of the observation of the discussion about the question "corpuscle or wave?", one made an analogy between the shock of momentum masses $m_w$ of magnet fields and the shock of resting masses $m_o$. Both should mean the corpuscular character. **One apparently *didn't* suspect that a magnetic field is closer to the wave(quantum) than a particle of resting mass to the magnet.** Therefore, one could not know the necessity to calculate the momentum mass –, which is a wavequantum mass – to the wave instead of covering it with the resting mass together in the concept "corpuscle". Currently, one stands in front of this disaster: that assumed "dual nature of corpuscle and wave" does not exist, but the **Nature of Wavequantum (magnet) and Wave** is the real consequence of logic and unity!

De-Broglie-wave is nothing else than the expression of a magnetic field. Every photon and also every fallon represents the spreading of an electromagnetic field or a gravitomagnetic field. We generally described the magnetic fields as dipole character of the wavequantum mass $m_w$ through this the momentum mass $m_w$ is given. The effects nh of momentum masses $m_w$ we collect under the concept of wavequanta $n \times h = m_w \times c \times \lambda_w$.

According to Huygens principle, the hit of a wavequantum forms a variety of elementary waves (wavequanta). We explain this as follows:

Every wave is the extension of a single wavequantum at least or of several wavequanta over vacuumcosm pairs.

A magnet field is transferred in vacuum, where the fields are compensated and able to be magnetized. A single dipole is the so-called "quantum" of the wave. A variety of these dipoles then forms the "quanta" – now called **wavequanta**. Either, each substance already contains itself for a variety of wavequanta (of magnetic fields) or a variety of charges. If a wavequantum meets a substance, the principle of the inductive causality works. The moved magnetic field induces partially elementary currents at the cargo loads, which are forming new magnet fields – those partially elementary wavequanta. It pushes magnetic systems of charges into a motion by forming of elementary wavequanta again (cf. sections 2.3. and 2.5., pages 307...).

The indication of “matter waves" in the diffraction grating was not an indication of a radiation but the measuring of one of the only dipole, which is already sufficing for this at least, of a single magnet field, of a single wavequantum. That wavequantum energy $E_w$ is bound at Hamilton equation (2.4,37): $E_A^2 = E_{Ao}^2 + E_w^2 = E_{Ao}^2/(1 - v^2/c^2)$. It cannot be the same as the radiation energy $\Delta E_{(n)}$. Consequently, this equation hits only the photons, because in Hamilton equation no resting energy $E_{Ao}$ has to be taken into account of them:

$$E_{A\gamma} = 0 + E_{w\gamma} = \Delta E_{(n)} \quad . \tag{2.4,1f}$$

This is a well-known fact, but now it has not led to the clarification of the terminology chaos in "Quantum Mechanics". The momentum energy $E_{w\gamma}$ of photons immediately is like the radiant energy. Really, they are wavequanta nh, therefore, dipoles and those functions like the wavequantum masse $\pm m_w$, which De Broglie formulated:

$$\lambda_{w(n)} = c / f_{w(n)} = n \times \mathbf{h} / \mathbf{m}_A \times \mathbf{v}_{(n)} = n \times \mathbf{h} / \mathbf{p}_{(n)} \; . \tag{2.4,2}$$

$$\mathbf{E}_{w(n)} = n \times \mathbf{h} \times f_{w(n)} \; , \tag{2.4,3}$$

In which are:

| | |
|---|---|
| $\lambda_{w(n)}$ | wavequantum length or “wave length"; |
| $f_{w(n)}$ | frequency of wave potency; |
| $\omega_{w(n)} =$ | $2\pi \times f_{w(n)}$ as angular velocity; |
| $\mathbf{v}_{w(n)}$ | vectorial magnitude of the vacuum velocity of resting mass; always a rotation velocity $v_{rot}$; |
| c | amount of the gravitational wave velocity in the vacuum; |
| $\mathbf{m}_A$ | relativistic mass or antimass (of antimatter); |
| $\mathbf{E}_{w(n)}$ | relativistic wavequantum energy; |
| $\mathbf{p}_{(n)}$ | relativistic momentum $p_A$ (wavequantum momentum $p_w$) and |
| **h** | Planck’s quantum (Planck’s constant). |

Planck’s quantum (Planck’s constant; Planck’s effect quantum) is a natural vector **h**. If a positive mass (it is also a vector) rotates in an orbit with a positive direction of the velocity (it is a vector, too, curved to the right), they form the positive vector of the amount of h in observer direction seen as curvature to the right. This vector h then forms the direction of the elementary oscillation period.

Neither photons are particles nor they have any particle character. They only form the phenomenon of a wavequantum that naturally can make interference with itself at the dual-slit, too. We see Planck’s quantum as a vectorial reality, because it has to be distinguished into ordinary matter as well as to antimatter: (/Q 12/, page 178)

$$h = 2\pi \times \hbar = 6.626176 \cdot 10^{-34} \text{ Js} \; ; \tag{2.4,4}$$

n natural number; n = 1, 2, 3, ... theoretically $\infty$.

$$\boldsymbol{\hbar}_{(n)} = n \times \boldsymbol{\hbar} \quad . \tag{2.4,5}$$

Further equations are valid:

$$R_{w(n)} = c / \omega_{w(n)} \qquad (2.4,6)$$

$$R_{w(n)} = n \, \hbar / \mathbf{m}_A \times \mathbf{v}_{(n)} = n \, \hbar / \mathbf{p}_{(n)} \ . \qquad (2.4,7)$$

$\lambda_{w(n)}$ – the relative wavequantum length between observers moved in vacuum - is the same as the absolute vacuum wavequantum length $\lambda_{w(n,\,vacuum)}$ at the same wavequantum level.

Thus, a special wavequantum length $\lambda_{w(n)}$ or a wavequantum amplitude $R_{w(n)}$ is depended on the level n. The dependence is stipulated by the wavequantum condition that we have explained as wavequantum momenta in this theory. While the rotation radius is valid for the observer moved along with equation (2.4,1b), the wavequantum amplitude is valid for the resting and indicating observer:

$$R_{rot(n)} = n \, \hbar / \mathbf{m}_B \times \mathbf{v}_{(n)} = n \, \hbar / \mathbf{p}_{B(n)} \ . \qquad (2.4,7a)$$

In this equation, the magnitudes of moving mass $m_B$ and moving momentum $p_B$ are not measurable directly. The momentum p is always only to understand as a part of the real angular momentum **l** at which one has forgotten to include the objective curvature of spacetime over the wave amplitude $R_w$:

$$\mathbf{l} = \mathbf{m}_A \, \mathbf{v}_{(n)} \, R_{w(n)} = \mathbf{p}_{(n)} \, R_{w(n)} \ . \qquad (2.4,7b)$$

The velocities of extending effects based on wavequanta are wave velocities. Consequently, they are the same as vacuum light velocity c. The wavequantum velocity $v_{w(n)}$ and the rotation velocity $v_{rot(n)}$ of mass at one single particle are the same to $v_{(n)}$. We put the following principle into the foreground:

**Relativa only exist on base of absoluta.**

Today physics uses the model of electric or gravitational charge as a flowing something, because it distributes the electric elementary charge on the “surface” of the electron thought as statistically spherical (with this, it thinks to distribute an elementary charge just like quantities of them can be added in the course of “Quarks Theory"). There, the charge would rotate and form the electric dipole momentum (the electromagnetic momentum). Such a charge cloud of diffuse and chaotic manner can be shared and enlarged arbitrarily. Model adaptions made it possible to achieve right results.

We think about it as follows:
The real corpuscles indicated by resting masses are the same as the primary and absolute oscillators in the matter, the cosms. They oscillate constantly, ideally, synchronously and harmonically provided that they keep their movement conditions or they rest in that vacuum. Like a pendulum, they only draw in their movement opposite the vacuum (which is their absolute reference system) a wave potency phenomenon $E_w$ – the energy of a magnet - as well as a relativistic wave energy difference $\Delta E_{(n)}$. In this cohesion, the relative motion of a particle yields the absolute value of its own wavequantum to the vacuum like of each other particle, too. In the increasing movement, the particles build up the potency of wave energy in the form of a wavequantum, which is almost a static dipole and which is able to overcome its wavequantum level from n = (n - 1) until n = 1.

> The center of the wavequantum with the wave mass $m_w$ (or the wave charge $e_w$) does not fall together with the center of the producer of the wavequantum respectively with the center of the moved rest mass $m_o$ ($e_o$)! This difference exactly is the dimension of the wavequantum amplitude $-R_w$ or its equivalent, which is the rotation radius of the particle $+R_{rot}$. The interpretation of Max Born (1882-1970) about the particle position is invalid! Any theoretical models on this building up are dropped with that (see section 2.11.).

In principle, oscillating matter forms the unity as follows:

The isolated matter in a stable particle (which is a receptacle cosm) produces the primacy of harmonic oscillation in a peculiar way. Isolated subparticles (element cosms) are actually in an infinitely high potential pot (v = c), which is a closed spherical wave: a QUANTUM (a primary oscillator, a “clock").

Movements of cosms (of particles) also reflect oscillations but which are working in a finite multiple number of open potential pots (v < c): WAVEQUANTA, which taken together within a closed potential pot (receptacle cosm) are connected in finite relations under each other again (secondary oscillators).

If two protons in vacuum almost had the same velocity and the same movement direction, they almost had the same wavequanta relatively to the absolutum. Those two objective wavequanta are not measurable under each other, because under the given condition both protons are resting relatively. However, there is no interaction and hardly no wave energy difference. Consequently, we measure the wave energy $E_w$ diverging to zero. It is interesting that in this process the dilations $\tau'$ of the isolated clocks of oscillating particles are not comparable, too, because they are – relatively to the vacuum – almost the same value.

Remark: the absolutely same velocity and the same movement direction is impossible, because the vacuum has a finite spherical symmetry and therefore it forces each movements onto a curved inverse course. So then, two movements never can be placed on one common course; this is forbidden by Planck’s quantum by quantizing of each movement: parallels do not exist.

In this respect, the corpuscles form out the real cosms of matter – concretely, their **ideal oscillators** in ideal medium vacuum. There are also electric corpuscles, which are not the same as photons. Today, one mixes up the concepts of corpuscle and of wavequantum. A momentum mass seemed to be reason enough to speak about a corpuscle. But we only calculate the corpuscle character to cosms and their charges or their monopolar resting masses. The dipole of the momentum mass we exactly calculate to the wavequanta, by this doing we find the logical **unity of wave and wavequantum** instead of the non-unity without logic of “particle“ and wavequantum!

Ideal oscillators are based on the ideal contrary movement force. Here only two forces are necessary, which are forming the matter in principle as contrary player. More isn’t! We know two universal forces - the electromagnetism (the electrition) and the gravitation (the gravitomagnetism). Using General and Special Relativity Theory, it will be proved that those both forces are forming all the oscillators of matter and that they are giving three world features:

| | |
|---|---|
| First world feature: | the world of electrical interaction, |
| Second world feature: | the world of gravitational interaction, |
| Third world feature: | the world of electrogravitational interaction. |
| | (Electric effects are captured inside the gravitational receptacles.) |

A reversion of the third world feature in the form of a fourth world feature doesn’t exist; these would be electric particles, which would carry a gravitational charge. In our conception, we sign the concept of electromagnetism simply to “Electrition" and we decide then into the following features:

- Electrition (electric as monopolar and electromagnetic as bipolar effects),
- Gravitation (gravitational and gravitomagnetic effects),
- Electrogravitation (electrogravitational and generally magnetic effects).

Some singular elemental force is nowhere! Only the largest amounts of both forces are the same at the inside of each cosm, no matter if it is an electron, a proton, a neutrino or if it is the universe itself or if it is an e. m. elementary charge $e_o$, especially $F_o = -1.21 \times 10^{44}$ N (see 3.2.3, page 460). The heaviest cosms of gravitational or electric quality, gravitons or electrogravitons, correspond to the resting energy calculated into some pair formation temperatures, which can be the highest energy in universe. They only are effective inside the closed particles. In our natural environment, there will never be such a high temperature as naturally inside of protons, electrons and neutrinos. These are typical formation temperatures of subparticles, which we do not contact directly (indirectly by forced sub-pair formations).

After the discovery of Planck in 1900, one interpreted this way: a “photon oscillator" only could stand or it could show that there is one quantum or it could only form integer multiple numbers of one quantum. They found the term “radiation energy is energy-time-constant h divided by period time $\tau_\gamma$ of the oscillation in vacuum":

$$\mathbf{E}_{w\gamma} = \Delta\mathbf{E}_{(n)} = n\mathbf{h} / \tau_{\gamma(n)} = n\mathbf{h} \times f_{\gamma(n)} \ ; \qquad \text{(/Q 12/, page 280)} \qquad (2.4,8)$$

or

$$\Delta\mathbf{E}_{(n)} = \mathbf{h}_{(n)} \times f_{\gamma(n)} = \boldsymbol{\hbar}_{(n)} \times \omega_{\gamma(n)} \ ; \qquad (2.4,9)$$

with $\Delta E_{(n)}$ as outer energy quantum of an “oscillator" and $f_\gamma$ as frequency for an integer extension (2.7,4). In the relativity, we only can observe differences:

$$\Delta\mathbf{E}_{(\Delta n)} = \mathbf{h}_{(n)} \times \Delta f_{\gamma(n)} \ ; \qquad (2.4,10)$$

for example, a wavequantum leap from n = 3 to n = 2:

$$\Delta E_{(3)} - \Delta E_{(2)} = (3\text{-}2)h \ \times \ (f_{\gamma(3)} - f_{\gamma(2)}) \ .$$

PLANCK’s thinking started from the radiation or the wave energy. The insinuation of an oscillator with the concept "quantum" led to its non-correct using at the real wavequantum. Without ever having discovered the real quantum in the shape of the real cosm (micro and macrocosm), physics searched for the answer on the question of “wave character" of matter in the sense of examination of waves and their “quanta". After this examination, in the year 1905, Einstein found that the **electrition waves** (electromagnetic waves) would consist of such a kind of wavequanta – from photons or gamma quanta. **Electric and magnetic oscillators** – the **electrograviton pairs** and **magon pairs** as solid particles with an intrinsic “electric resting mass” (elementary charge) or with an equal magnet monopole, like we discovered them here, - he did not discover.

As well, it happened to De Broglie who announced the wavequanta of electron mass (really, without knowing this, he announced the wavequanta of gravitation). But he did not discover the primary oscillator at the electrons! In this respect, “Quantum Mechanics" remained a wavequantum theory and its continuing in mistaken terminology or in its later theories in the features of “Quantum Field Theories". Starting from the infinite variety of the waves, the faith in a chaos of oscillators was nursed from which an epoch determined philosophy of life was led giving the breeding ground of an epoch of error ideologies.

The ideal oscillator found by us here has only one basic state of stability in vacuum rest, which is continuously shifting itself by its movement in vacuum in way and time of the oscillation function (Schwarzschild’s solution, Schwarzschild, 1916).

Here we start from this cohesion:

> The particle has to be the searched **quantum as the quantized cosm** on the base of locked ideal oscillators**!** If it is moved relatively via exchange of radiation, the drawing of wavequanta and their relative space order is following.

If we start from eq. (2.3,14) and (2.4,2), wavequantum energy in the completeness of all the levels n consists of vacuum from this eq.

$$\mathbf{E}_{w(n)} = \mathbf{m}_A \, \mathbf{v}_{(n)} \, c = \mathbf{m}_{w(n)} \cdot c^2 \ ,$$

eq. (2.4,29) follows. Like eq. (2.13.2,1) then of wavequantum energy is valid:

$$\mathbf{E}_{w(n)} = \mathbf{p}_{(n)} \, c = \mathbf{p}_{w(n)} \cdot c \ . \qquad (2.4,11)$$

This way, we find the momentum mass $m_w$ of the gravitomagnetic wavequantum – of the **fallon** - connected with the rotation of a relativistically accelerated resting mass $m_A$. Similar to this, the electromagnetic field forms the real electromagnetic wavequantum - the **photon -** from a rotating electric charge $e_A$. Only the continuation of the fields in vacuum is connected with mediators without rest mass – with the vacuum quanta. In these things, mass and antimass as well as charge and anticharge are compensated. Practically, an electromagnet or gravitomagnet without rest mass is spreading in the shape of a photon or a fallon over vacuum. Because they aren't particles, there may be no discussion about "Big Bang" anymore from accidental concentrating of energy of vacuum. Such considerations still are based on the mistake of the particle wave dualism.

Because of the conservation law of momentum, the radiation momentum of photon/ fallon $\mathbf{p}_{A\gamma(n)}$ is able to be calculated into an also radiating change of momentum of electrogravitational cosm $\Delta\mathbf{p}_{(n)}$. Reversed, for the momentum is valid: $\mathbf{p}_{A\gamma(n)} = \Delta\mathbf{p}_{(n)}$. At first, Hamilton equation like (2.4,1f) expects the equality of the radiation momentum $\mathbf{p}_{A\gamma(n)}$ and of the wavequantum momentum $\mathbf{p}_{w\gamma(n)}$ of photons/ fallons spreading over vacuum:

$$\mathbf{p}_{A\gamma(n)} = \mathbf{p}_{w\gamma(n)} = \Delta\mathbf{p}_{(n)} = \mathbf{m}_{A\gamma(n)} \times c = \mathbf{m}_{w\gamma(n)} \times c \; . \qquad (2.4,12)$$

Because of the resting mass $\mathbf{m}_o$, we have to set the momentum $\mathbf{p}_{w\gamma(n)}$ equal to the relativistic momentum $\Delta\mathbf{p}_{(n)}$ and then we have to find the wavequantum momentum $\mathbf{p}_{w(n)}$ of the rotating mass $\mathbf{m}_o$:

$$\Delta\mathbf{p}_{(n)} = \mathbf{p}_{A(n)} - \mathbf{p}_{Ao} = ( \mathbf{p}_{Ao}^{\,2} + \mathbf{p}_{w(n)}^{\,2})^{½} - \mathbf{p}_{Ao} \; ; \qquad (2.4,13)$$

or expressed of energy with (2.4,1b):

$$\Delta\mathbf{E}_{(n)} = \mathbf{E}_{A(n)} - \mathbf{E}_{Ao} = ( \mathbf{E}_{Ao}^{\,2} + \mathbf{E}_{w(n)}^{\,2})^{½} - \mathbf{E}_{Ao} = ( \mathbf{E}_{Ao} / W_{SRT}) - \mathbf{E}_{Ao} \; . \qquad (2.4,14)$$

This feature of conservation of momentum or energy is the most important base of giving of movement functions between the elements of gravitational and of electrogravitational matter, which are transferred by electrition waves and gravitation waves (Compton Effect, photo effect as shock effect of magnetic fields, gravitational angular momentum called spin in the result of magnetic momenta)! In this connection, "Quantum Mechanics" has built its theory of photon exchange of electromagnets relatively to reality. Therefore, also **exchange of fallons** exists in the course of gravitomagnetic forces. The results of purely arithmetical manner are right. The terminology and the classification of the created concepts give a wrong conception of the world, because one still describes photons as particles. Therefore, we have to distinguish the concepts of the graviton and of the fallon: the graviton is a particle of the heaviest resting mass ($1.859 \times 10^{-9}$ kg) but the fallon is the wavequantum, which is formed out from the movement of any gravitational particle in relative motion.

Only in connection with the finiteness of the universe, it is to understand why the **upper limit** of all relations of movement passes in the vacuum wave-velocity c. The vacuum contains the cosms in compensated form. From this state, cosm pairs are born (pair forming) by giving wave energy and by connecting electric as gravitational vacuum cosms with each other and by separating the vacuum state.

If even the complete rest mass of a particle should have to be converted into an energetic interaction, then the rest momentum $p_{Ao}$ should be valid for the primary conservation of momentum:

$$\mathbf{p}_{Ao} = \mathbf{m}_o \times c \; . \qquad (2.4,15)$$

Einstein gave the corresponding and fundamental term of the external magnitudes of rest mass $m_o$ and of rest energy $E_{Ao}$ at which we connect the rest momentum:

$$\mathbf{E}_{Ao} = \mathbf{m}_o \times c^2 = \mathbf{p}_{Ao}\, c \; . \qquad (/Q\ 5/, \text{page } 329 \text{ (At 9)}) \qquad (2.4,16)$$

The rest(ing) momentum $p_{Ao}$ relatively to the vacuum is the **projection** of the **natural oscillation** of the cosm that determines the isolated matter as well as the external states but both in respectively independent way.

Eq. (2.4,16) is valid for the observer at the outside of $r_o$ of the ideal oscillator. With (2.4,2) you can follow the example of n = 1:

$$\lambda_{w(1)} \cdot \mathbf{p}_{w(1)} = \mathbf{h}_{(1)} = \mathbf{E}_{w(1)} \cdot \tau_{w(1)} \qquad \text{or because of (2.4,19)} \qquad (2.4,17)$$

$$R_{w(1)} \cdot \mathbf{p}_{w(1)} = \boldsymbol{\hbar}_{(1)} = \mathbf{E}_{w(1)} \cdot t_{w(1)} \qquad (2.4,18)$$

Explanation as follows: $R_w$ as wavequantum amplitude (this is not the intensity at the formation of the wavequantum, this is the rotation radius of the forming mass and/ or of the charge),

$t_w$ as amplitude time,
$\tau_w$ as wavequantum period time,
$\mathbf{E}_w$ as wavequantum energy,
$\mathbf{p}_w$ as wavequantum momentum opposite the vacuum, the same as the momentum p of cosm.

Then the terms are valid:

$$R_w = \lambda_w / 2\pi \ , \qquad (2.4,19)$$

$$t_w = \tau_w / 2\pi \ . \qquad (2.4,20)$$

For a wavequantum of an arbitrary n-level, it is valid:

$$R_{w(n)} \cdot \mathbf{p}_{w(n)} = \boldsymbol{\hbar}_{(n)} = \mathbf{E}_{w(n)} \cdot t_{w(n)} \ . \qquad (2.4,21)$$

Under conditions of equality, never a difference to (2.4,21) is able to reach (analogon on eq. (2.4,25)):

$$\Delta R_w \cdot \Delta \mathbf{p}_w \approx \boldsymbol{\hbar} \approx \Delta \mathbf{E}_w \cdot \Delta t_w \ . \qquad (2.4,22)$$

While the wavequantum radius, the amplitude, is really able to reflect a rotation radius $R_w$, for a wavequantum the amplitude $R_o$ of the cosm is drawing a diameter of the rotation of that radius $½R_o$; **this drawing is running two times for a complete period!** Graphically, in a complete circle of the radius $R_o$, two equal circle orbits in the sense of an eight are inscribed with respectively the radius $½R_o$. Every half of the “eight orbits" has relations to half of Planck’s quantum then. In the case of a state of **cosm** or of **anti-cosm**, which projection runs onto n = 2 × ½ = 1 where no further n are authorized than n = 1, then it is valid:

$$R_o \times \mathbf{p}_o = \boldsymbol{\hbar} = \mathbf{E}_{Ao} \times t_o \ . \qquad (2.4,23)$$

Under vacuum conditions there are

$R_o$ - as amplitude of the cosm (cosm radius),
$2R_o = r_o$ as the particle horizon, eq. (2.8,2);

$\mathbf{p}_o$ - as the particle momentum in rest,
$\mathbf{p}_o = \mathbf{m}_o \times c$ ;

$\mathbf{E}_{Ao}$ - as the vacuum energy of the resting particle,
$\mathbf{E}_{Ao} = \mathbf{m}_o \times c^2$;

$t_o$ - as the amplitude time of the cosm,

$t_o = R_o / c = \tau_o / 2\pi$; (2.4,24)

$\tau_o$ as period time of cosm or of particle.

The model of “Quantum Mechanics" lead to Heisenberg’s uncertainty principle at the diffraction gap $\Delta X$ in accordance with an approximation calculus:

$\Delta X \times \Delta p_w \geq \hbar \leq \Delta E_w \times \Delta t_x$ (/Q 12/, page 179). (2.4,25)

Its interpretation was as followed: The change of the position X and the momentum $p_w$ of a particle (mistaken one said “particle" to a real quantum) are simultaneously measurable only with restricted precision. The same would be valid for the relations of change of wavequantum energy $E_w$ and of the time $t_x$. With increasing wavequantum energy the time $t_x$ would become smaller like also its analogon of wavequantum amplitude $R_w$, which is indicated at the gap as $\Delta X$, while the relativistic momentum $p_w$ is increasing. Here the corpuscle, the particle or the microcosm themselves are not meant but only their wave energy quanta those are indicated. This simply means as follows: The particle itself will not be indicated, but only its wavequantum energy is remarked or reflected (see explicitly section 2.11.).

Because of (2.4,10) and (2.4,12), the potential wavequantum mass of the level n is able to calculate:

$\mathbf{m}_{w(n)} = \mathbf{h}_{(n)} \times f_{w(n)} / c^2$ . (2.4,26)

With that fact, we explain the momentum mass of the wavequantum as potential wave mass $m_w$, which we know as photon or fallon mass (photons and fallons are not particles!), which have no rest mass relatively to the gravitation world.

Since the velocity is a vector, its direction also forms vectorial dimensions: $\mathbf{E}_w$, $\mathbf{m}_w$, $\boldsymbol{\hbar}_{(n)}$, $\mathbf{v}_{w(n)}$ as well as the dipole force $\mathbf{F}_w$ and its vectorial acceleration **a**. The movement of the relative rest mass $\mathbf{m}_o$ forms a wavequantum dipole $\mathbf{m}_w$. That dipole includes the potency of the forming of waves by Hamilton’s equation, if it is changing its movement state by change of its level n.

> In this respect, a wavequantum is a dipole at first that is bipolarly directed in an almost constant position in the field of all the other dipoles and which is directed in this field by its movement. The wavequantum would be indicated by static stability, if it didn’t interact with the other wavequanta moved in the associated field.

The potency of the wavequantum becomes a wave then, if the secondary dipole vector is forced to the interaction with its surroundings or to the acute rotation around its beginning area into relationship with its carrier cosm at the braking efficiency. Its cosm radiates then an electrogravitational wave, which is equivalent to the gravitational and the electric deceleration energy. The wavequantum is indicated by a dynamics, which is bound to the relativity of the cosm oscillation.

The lowest attempt of the rotation means a momentum transmission. Additionally, it means a working performance, because the wavequantum effect represents only the secondary one. The cosm rotates and with it do the electrical charge as well as the outside mass. It allows its vacuum cosm field rotating along (the magnetizing of compensated electric and gravitational cosms and anticosms to vacuum).

A single charge/mass in vacuum seems to be like a kind of vacuum, like a surplus, which is swimming on vacuum and which is not able to go down because of the given parity of already connected pairs of cosms. It is made as quantitative surplus in the finite vacuum of cosms. Therefore, the vacuum is disturbed this way.

With (2.4,26), one finds the fundamental equation of the ascertainment of a wavequantum mass (momentum mass) from the absolute relations in vacuum, which are also able to become a radiation mass under decelerating conditions (of a decrease of speed) and which are built up to a potency of this radiation under accelerating conditions (as a wavequantum):

$$\mathbf{m}_{w(n)} = \mathbf{m}_o \times \mathbf{v}_{(n)} / c \times W_{SRT} = \mathbf{m}_A \times \mathbf{v}_{(n)} / c \; . \qquad (2.4,27)$$

Some change of the wavequantum is given by a change of velocity, which is also changing the relativistic feature of the rest mass at the same time. This equation is valid for the formation of an **electromagnet** like of a **gravitomagnet**, too, in the shape of a **wavequantum**, because this one is only measurable by an observer who is in relations to this wavequantum.

A multiple number of wavequanta (dipoles: electromagnets, gravitomagnets) couple with each other to an order of wavequanta, which represents one of the causes of the phenomena of waves in movement relations. Instead of the relations “wave mass to rest mass", all the physical dimensions can be settled into that relation. In this respect, the fundamental problem between wave and primary oscillator has been solved. Consequently, with (2.4,27) for example, a variable equation with x exists of the dimensions energy, mass, momentum, force, acceleration, amplitude and amplitude time:

$$\mathbf{x}_{w(n)} = \mathbf{x}_A \times \mathbf{v}_{(n)} / c \; . \qquad (2.4,28)$$

This means that all the so formed dipole magnitudes each carry a complementary polarized potential on both sides of the rotation area of the possible wave. For example, at an electric coil, it would be calculated how large the electric wavequantum mass $m_w$ (wavequantum charge $e_w$) could be at the one as well as at the other side of the coil relatively to its electric center in the center of the coil. For a rotating gravitational mass, there would be also such a wavequantum but a gravitational one.

The relativistic mass $m_A$ of (2.4,27) is able to calculate from the amount of the wavequantum mass $m_w$ under the conditions $v \neq 0$ and $m_w \neq 0$ (cf. eq. (1.1,9)):

$$\mathbf{m}_A = \mathbf{m}_{w(n)} \times c / \mathbf{v}_{w(n)} \; . \qquad (2.4,29)$$

We define the wave number of $k_{w(n)}$ as the reciprocal value of the wave amplitude:

$$k_{w(n)} = 1 / R_{w(n)} \; ; \qquad k_{w(n)} \times R_{w(n)} = 1 \; ; \qquad (2.4,30)$$

so as differentials

$$dR_{w(n)} \times dk_{w(n)} \approx 1 \; . \qquad (2.4,31)$$

According to the matrix model of “Quantum Mechanics" would be valid:

$$\Delta X \times \Delta k \approx 1 \quad . \qquad \text{(/Q 12/, page 178)} \qquad (2.4,32)$$

The comparison of both equations shows the natural agreement of the model character of the “Quantum Mechanics" and our wavequantum theory, which is caused on the existence of the absolute reference system of vacuum.

Theses:

> Dirac found an equation, which should be explaining the electron spin.

From this explanation, the electron and the positron were two states of the possible wave energy. In this respect, one saw the particles as a pure wave function.

Antitheses:

> The interpretation of Hamilton function as expression of electron spin is one of the cardinal uncertainties of the interpretation of physics, generally. Because it rather is the primary polarizing of an electric charge or a gravitational mass, in unity with formation of a wavequantum from which the relativistic mass is becoming its part of its **transmitter or receiver quality**.

We calculate the eq. (2.4,1a) to (2.4,18). Quickly we found Hamilton’s equation:

$$m_o^2 = m_{A(n)}^2 \times W_{SRT}^2 = m_{A(n)}^2 \ (1 - v_{w(n)}^2 / c^2) \qquad (2.4,33)$$

$$m_o^2 = m_{A(n)}^2 - m_{A(n)}^2 \times v_{w(n)}^2 / c^2 \ .$$

Minuend is identified as wavequantum mass $m_w$ with eq. (2.4,27):

$$m_o^2 = m_{A(n)}^2 - m_{w(n)}^2 \ . \qquad (2.4,34)$$

If the mass is multiplied with $c^4$, types of energy are given in the relativistic and typically Pythagorean term:

$$E_{Ao}^2 = E_{A(n)}^2 - E_{w(n)}^2 \qquad (2.4,35)$$

$$E_{A(n)}^2 = E_{Ao}^2 + E_{w(n)}^2 \qquad (2.4,36)$$

or simply Hamilton's equation in the shape related on vacuum:

$$E_{A(n)} = \pm \left| c \left[ (m_o \times c)^2 + p_{w(n)}^2 \right]^{1/2} \right| \ . \qquad \text{(cf. /Q 12/, page 191)} \qquad (2.4,37)$$

Energies are there electric/electromagnetic or gravitational/gravitomagnetic vectors. A mix up between both is not allowed. If momenta have been transferred between both vectorial types, the calculation of electric/electromagnetic effect into the gravitational/gravitomagnetic effect and reversed is possible by the momentum conservation law. Therefore, a purely mathematical formalism of equality of momenta of the electromagnetism and the gravitation results without knowing of backgrounds of their primacy.

If the wavequantum energy $E_w$ comes from the movement of an electric charge in calculation into a rest energy $E_{Ao}$ after (2.5,9), the relativistic energy $E_A$ is also an electric energy; parallelly for gravitational masses, charges or energies. When Dirac wanted having led four states from this function, then these are four purely electric phenomena at first according to (2.4,34):

1. Positive charge in square plus positive vector of the electromagnet in square,
2. Positive charge in square plus negative vector of the electromagnet in square,
3. Negative charge in square plus positive vector of the electromagnet in square,
4. Negative charge in square plus negative vector of the electromagnet in square:

$$e_{A(n)}^2 = e_o^2 + e_{w(n)}^2. \qquad (2.4,38)$$

(cf. (2.4,16), (2.4,15), (2.5,9), (2.12,16)).

With them, the electron mass has not been described but the electric elementary charge of all the electrically charged particles, which exist with reversible electromagnetic momenta $e_w$, ever after in which movement vector they will be seen – as the electromagnetic angular momentum or the secondary spin $\mathbf{I}_S$. More than a relativistic manner of the Maxwell theory is not given with the Dirac opinion – therefore it is also a wavequantum electrodynamics!

Just the same how there are electric phenomena, we can combine Hamilton's function with gravitational states: then gravitationally complementary charges exist with gravitomagnetic vectors! With this opinion, we come into the immediate proximity of the prediction of relativity theory, which is confirmed by us, there were also gravitational wavequanta in analogy to the light (see section 3.2.9.):

1. Positive mass in square plus positive vector of the gravitomagnet in square,
2. Positive mass in square plus negative vector of the gravitomagnet in square,
3. Negative mass in square plus positive vector of the gravitomagnet in square,
4. Negative mass in square plus negative vector of the gravitomagnet in square.

If at an electrogravitational particle are both the electric charge and the gravitational mass center, then both Hamilton energies are existing side by side with the same velocity in vacuum. These vectors have to be added:

$$E_{A(complete.)}^2 = E_{A(el.)}^2 + E_{A(grav.)}^2 - 2E_{A(el.)} \times E_{A(grav.)} \times \cos\Gamma . \qquad (2.4,39)$$

Historically, the gravitational energy remained undetected because of its smallness. It was neglected. The combination with the gravitational angular momentum enters because of the electromechanical parallelism at the real particles in the end.

Under the condition every energies are forming their oscillation function with (2.4,11), we find the relativistic energy $E_{A(n)}$ developed by n:

$$n^2h^2 \times f_{A(n)}^2 = n^2h^2 \times f_o^2 + n^2h^2 \times f_{w(n)}^2 . \qquad (2.4,40)$$

For cosms is always n = 1 valid. Therefore, it follows:

$$n^2 f_{Aw(n)}^2 = f_{ow}^2 + n^2 \times f_{w(n)}^2 .$$

The wavequantum frequency of the wavequantum in vacuum $f_{w(n)}$ appears like beat frequency function in square:

$$f_{w(n)}^2 = f_{A(n)}^2 - (f_o^2 / n^2) . \qquad (2.4,41)$$

For example in vacuum rest, the frequency $f_o$ of the resting cosm would stay unchanged the same like the relativistically total frequency $f_A$, from which the zero position of the wavequantum frequency $f_w$ would result. The frequency term (2.4,40) divided by $c^2$ represents a function of the oscillation or the wave length $\lambda$ of energies:

$$n^2 / \lambda_{A(n)}^2 = 1 / \lambda_o^2 + n^2 / \lambda_{w(n)}^2 . \qquad (2.4,42)$$

Calculated to the smallest common multiple number, for wavelengths we calculate:

$$\lambda_{A(n)}^2 = \frac{n^2 \times \lambda_o^2 \times \lambda_{w(n)}^2}{n^2 \times \lambda_o^2 + \lambda_{w(n)}^2} . \qquad (2.4,43)$$

The relativistic wavelength is always smaller than the wavelength of the wavequantum.

By the fact that Hamilton's equation energy is equivalent to the relativistic energy, we find clearly of what the wavequantum energy consists:

$$E_{A(n)}^2 = E_{Ao}^2 + E_{w(n)}^2 = E_{Ao}^2 / W_{SRT}^2 ,$$

$$E_{w(n)}^2 = (E_{Ao}^2 / W_{SRT}^2) - E_{Ao}^2 , \qquad (2.4,44)$$

at which the wavequantum energy is given as function of the resting energy and of the velocity:

$$E_{w(n)}^2 = E_{Ao}^2 \{[1 / (1 - v_{(n)}^2 / c^2)] - 1 \} . \qquad (2.4,45)$$

The well-known particles in universe cosm let reduce themselves with (2.4,44) and (2.4,45) on the constant vacuum rest energy $E_{Ao}$ and its movement relations to the vacuum wave velocity c (these are vectors in form extracted the root):

1. Relativistic energy

$$E_{A(n)}^2 = E_{Ao}^2 / (1 - v_{(n)}^2 / c^2) \qquad (2.4,46)$$

2. Relativistic energy of wavequanta
(Wave energy) with (2.4,45):

$$E_{w(n)}^2 = E_{Ao}^2 \times [v_{(n)}^2 / (c^2 - v_{(n)}^2)] \qquad (2.4,47)$$

3. Relativistic kinetic energy

$$E_{kin(n)}^2 = E_{Ao}^2 \times v_{(n)}^4 / [4 \times c^4 \times (1 - v_{(n)}^2 / c^2)] \qquad (2.4,48)$$

4. Relativistic energy of the observer moved along:

$$E_{B(n)}^2 = E_{Ao}^2 \times (1 - v_{(n)}^2 / c^2) \quad . \qquad (2.4,49)$$

This feature of relativistic energy represents the unusual feature of the limit dilation relatively to the receptacle cosm with (2.19,34). In this respect, the velocity $v_{(n)}$ becomes to a finitely high limit velocity, which never diverges to vacuum light velocity.

Each of the four energy conceptions would also be a function of waytime (oscillation or wave length and period time) over the masses $m_{A(n)}^2$ and $m_{B(n)}^2$ to the corresponding masses $m_{w(n)}^2$ and $m_{kin(n)}^2$ at the division by vacuum wave velocity $c^4$.

At the stop of movement (or at partial deceleration) in vacuum, the dilation of cosm clock will be made reversed and at the same time the energy of relative rest $E_{Ao}$ like also the changed potency of the wave energy $E_w$ is measurable in the feature of the Hamilton energy $E_A$, which contains the real radiation energy $\Delta E_{(n)}$. This function is Pythagorean. The right triangle is formed by the cathete $E_{Ao}$ and the cathete $E_w$ to the hypotenuse $E_A$. In this respect the hypotenuse with (2.4,37) also represents the amount of the vectorial addition of the cathetes at the same time.

There are particles and antiparticles (electric and gravitational as well as electrogravitational cosms and anticosms), because we know two kinds of rest energies. Both rest energies have the quality to take a relatively stable orientation to the environment masses of its monopole measured as dipole in this field. This is the primary spin or the **cosm spin $\mathbf{I_p}$**, which appears as monopolar for the observer.

“Quantum Mechanics" assigned the intrinsic twist to the cosm mass of the electron of electrically detected electron spin found in the Stern-Gerlach experiment. It is a wavequantum spin in reality and not only one, but even two (rotation of the electric charge and force of rotation of the gravitational mass as a feature of universal charge). One assumed in (2.4,51), this would be the rest energy $E_{Ao}$ in the form of the created concept of “spin ±½". In this problem, the cause is given of the following interpretation overtaken by our theory:

Particles only would be described by wave energies; they would have “wave character”. Or like it is talk about Dirac that vacuum would be “an ocean of virtual particles".

Contrarily, this is not right! Under “virtual particles", one understands the compensated wavequantum energies and thus, no particles at all. From this problem, the mistake about vacuum also follows, which is die assumption of a state of wavequantum compensation for “Quantum mechanics". In reality, both exact particles and exact particle vacuum exist. The experimentally found electric spin of wavequanta projected these ±½ numbers, although undeveloped from this an electron carries fundamentally +1ħ and a positron has in principle -1ħ as the gravitational primary spin $\mathbf{I_p}$, which is the real particle spin of rest energy or of rest mass! How can we explain this?

The electrogravitational cosm electron, a gravitationally positive cosm with the mass $m_e$ and with an electromagnetic momentum $\bar{\mu}_{½(e)}$, is centrally oscillating into an isolated mass $M_e$ around the amplitude analogously to a spherical radius $R_e$ in vacuum rest. Above this amplitude, a “world horizon" is made – the electrogravitation horizon or the radius of $2R_e$ with the elongation R up to 2R. During a spherical-wave-like pulse in the electron of R = 0 up to $R_e$ or generally $R_o$ and back to R = 0, the

minimum of one unstable subparticle is rotating there – the protocosm - of R = 0 over $R_o$ and back in its orbit, which envelop gives a parity orbit of the diameter in the idealizing of about $R_o$. The multiple number of protocosms running along under this maximum level are filling up the isolated mass $M_o$. The only one protocosms in the first level, which “arises up” to the amplitude is negatively charge at the electron. Three possible protocosms, two times positive, one times negative, are not meaningful to construct. The other charges of protocosms, starting at the second level etc., are compensated (see section 2.13.3.). During one pulse of the electron oscillation – this is one half of the period $K_o$ - the resulting electrically negative subcharge is already rotating on the idealized total circle as half a “roller coaster" of the radius ½$R_o$ (in protocosm also a subprotocosm rotates with the own electrogravitational magnetic momentum $\bar{\mu}_{(SPK)}$).

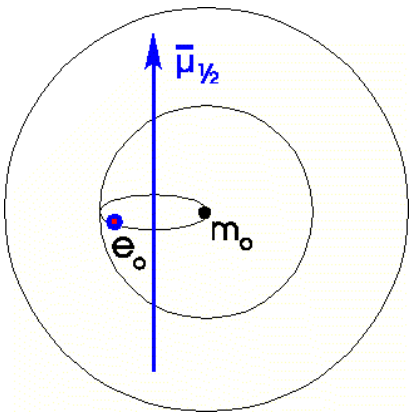
Only then, if the protocosm charge has made a second round, the microcosm has had a total period, which consists of both pulses of the spherical-wave-like oscillation of the isolated mass. Therefore, the projection of half a momentum ½ħ along the electromagnetic momentum $\bar{\mu}_{½}$ is really and only the reflection of half the effect of a cosm while ½ħ, and then it is a mistake at the reality! Thus, a **quasi-elementary electromagnet** is formed out. After the electric Stern-Gerlach-experiment, one had to assume that the mass and the charge of an electron had to be bound with each other in the electro-mechanic parallelism. An electromagnetic momentum would be a gravitational momentum, which would be the electron spin, however, the gravitational angular momentum of the electron as a particle with ½ħ. Rotating permanently, the particle would take the surface charge along and form the electro-magnet (at the neutron one cannot explain this problem this way). That’s a lot of spin! What types do we have?

1. Primary angular momentum of cosms $I_p$ (short: primary momentum, primary spin in h and μ).

2. Secondary angular momentum of charge $I_s$ (e. m. elementary spin, magnetic momentum $\bar{\mu}_{½}$).

3. Tertiary angular momentum of charge and mass $I_t$
   (e. m. secondary spin $\bar{\mu}_{½}$, g. m. secondary spin $\bar{\hbar}_{½}$).

Illustration 2.4;1: Magnitude locations
(locations of mass $m_o$, of rotating charge $e_o$ in the particle and of magnetic momentum $\bar{\mu}_{½}$)




While the primary spin is only determining the inside of a cosm to sign the highest orbit of the proto-cosms with $I_p$ = 1ħ, one or more electrically charged protocosms project their magnetic effects as magnetic momenta $\bar{\mu}_{½}$ to the outside. This effect is then the secondary spin $I_s$. It represents the elementary magnetic momentum as effect of an electromagnet. Forming a magnetic field, the particle doesn’t need to rotate. Rather, the theory means no matter the rotation of an uncharged cosm, which also doesn’t carry some magnetic momentum, the center of the mass rotates around itself. In this respect, if a particle rotates with a charge, it has an elementary electromagnet and then it is able to rotate really and gravitationally. If it interact with different electromagnets, it changes the position of the center of the mass, too. From the metric difference between the center of mass of the cosm $S_{(m)}$, which is located in the center of the spherically symmetrical particle and of the centers of the charges

$S_{(Q)}$, which are causing one or more magnetic momenta of that particle, the intrinsic twist of the particle is resulting. This two-sidedness forms the reason of the **electromechanical parallelism** (electrogravitational parallelism), which now refers to the turn of the particle's outside: if an e. m. momentum works onto a given elementary magnetic field, then the center of the charge $S_{(Q)}$ as well as the center of the mass $S_{(m)}$ have to rotate in the same sense. Therefore, the tertiary angular momentum of particle mass $I_t$ is elementary and measurable in units of Planck's constant ½ħ. That state, however, was called an intrinsic angular momentum or a spin of the particle. We find it again in our drawing of the space-like structure of the particles. Just now, the internal charge rotation is added with an external elementary rotation movement of charge and mass during an interaction. We don't explain the arguments of the magnitudes. However, they should be interesting with respect to deviations.

The reversible electromagnet of the electron - its electric wavequantum spin $\bar{\mu}_{\mathbf{½(e)}}$ - especially has a Planck character, which is able to calculate into a parallel of spin: $\mathbf{I_s} \approx \pm \left| ½\hbar \right|$. The elementary angular momentum of the charge $\bar{\mu}$ is fundamentally smaller than the composite angular momentum of the charge in the electron $\bar{\mu}_{\mathbf{½(e)}}$. If this secondary momentum wants to move the mass, it only has its chance for elementary momentum transmission in $\boldsymbol{\hbar}$. In the same connection, it pushes the charge additionally with $\bar{\mu}_{½}$, but with an angle to the internally rotating charge. In this respect, the angular momentum of the charge is able to be **reflected** as electric parallel - as a wavequantum momentum, concretely as an electromagnetic momentum $\mathbf{I_s} = \pm \left| ½\bar{\mu}_{B(PK)} \right|$, which was made determined of the rest mass of the electron! Just therefore, it has not to be the same as ½ ħ. More than this, the spin $I_t$ of the electron results from its tertiary turn, which is transferred by the electromagnetic field. We know now that the rest mass is in relationship to the amplitude. Wavequantum momenta are integer larger than the cosm momenta with integer numbers. The formation of such magnetic momenta is connected to the velocity below the vacuum light velocity.

The gravitomagnet of the electron is essentially smaller than its electromagnet, because the moved masses are essentially different by eq. (2.4,27). Then it is valid:

| Gravitational | | | Electric |
|---|---|---|---|
| Electron Mass | | : | "Mass" of Elementary Charge |
| | $\mathbf{m_o}$ **9.1 × 10$^{-31}$ kg** | **:** | **1.86 × 10$^{-9}$ kg** |

in Coulomb with (2.5,9)

| | | | |
|---|---|---|---|
| | $e_t$ 7.85 × 10$^{-41}$ C | : | 1.602 × 10$^{-19}$ C |

as electromagnetic primary momentum $I_p = 1\ \bar{\mu} = 9.088 \times 10^{-45}$ Am²

| | | | |
|---|---|---|---|
| | 1 $\bar{\mu}$ | : | 1 $\bar{\mu}$ |
| as primary spin $I_p$: | 1 ħ | : | 1 ħ . |

One ħ would correspond to one $\bar{\mu}$: $\bar{\mu} = \hbar / k_q$.

On an orbit of the charge at a protocosm in the electron with $v_{rot} = c = 2.99792458 \times 10^8$ m/s and on an orbit radius of $R_{rot} = ½R_e = 1.93 \times 10^{-13}$ m for n = 1 and $\alpha_2 = 1/137$ are valid:

| | |
|---|---|
| Electric wavequantum mass | 1.86 × 10$^{-9}$ kg |
| Wavequantum charge in Coulomb | 1.602 × 10$^{-19}$ C |
| as electromagnetic orbit momentum | $I_B = ½\ \bar{\mu}_e = 9.27 \times 10^{-24}$ Am², n = 1: $I_B = 1.02 \times 10^{21}\ \bar{\mu}$ . |

That magnetic momentum has the freedom to differ along its internal condition with the multiple number of the elementary magnetic momentum $\bar{\mu}$ and to be able to transfer the minimum angular momentum at the mass calculating after the same conditions with eq. (2.12,6) for ½ ħ:

$$½ħ = m_e \, c \, ½R_e = 9.1 \times 10^{-31} \text{ kg} \times 2.99792458 \times 10^{8} \text{ m/s} \times 1.93 \times 10^{-13} \text{ m} = 5.27 \times 10^{-35} \text{ Js}.$$

At the inside of the electron, the elementary charge is rotating along half of the electron radius $½R_e = 1.93 \times 10^{-13}$ m with almost light velocity, which specially relativistic action remains below the electron horizon of $2R_0$ so that at the outside only about one corresponding electromagnetic momentum is measurable: $½\bar{\mu}_e = 9.27 \times 10^{-24}$ Am². Given as half a momentum $\bar{\mu}_{½}$, it is in relationship to the electron orbit momentum, $\bar{\mu}_B$, as follows:

$$\bar{\mu}_{½} = ½ \, \bar{\mu}_B$$

or as Planck's momentum: $½ ħ : 1 ħ_B$ . (2.4,51)

The real electromechanical parallelism, which would commit a movement of electrical manner to a movement of gravitational-mechanical manner, if two different elements of this motion are moving themselves in independent way, exists in the unusual feature of the eccentricity of the gravitational and electrical centers. Only a common motion element would be capable of the electrogravitational parallelism as the experience conveyed at first in classic way!

Well, the cosm spin according to Hamilton's equation cannot be an intrinsic angular momentum but the expression the cosm oscillation $I_p = 1 \times ħ$ without external rotation of the electron – the gravitational primary spin into monopolar direction. So the theorists thought to have found half the spin ½ ħ with the electric dipole spin of electron – with the electromagnetic momentum $\bar{\mu}_{½}$ - and its half numbered relations, which would be led from the electromechanic parallelism of the masses - still by their opinion.

Using "Quantum Mechanics", one could not find that there is a completely different spin than the electrically derived electron spin with the wavequantum quality, consequently, the gravitational primary spin that is decided by the kind of the particles to be an electron or a positron. Dirac has suspected this fact, but he could not made it complete, because he only worked with pair forming energy relations. This way, the believe was made deeper the particles themselves would be only wave phenomena. The "corpuscular character" of particles to be especially microcosms according to the General Relativity Theory was neglected completely, because nobody can detect it.

The wavequanta and their orbit spin character do not decide about particles and antiparticles! In this respect, Dirac's model couldn't interpret the realities correctly, but it has mixed up particle and wave concepts. This way however, one was induced to assume the photon was a "particle". Instead of this state as "particle", it really is a wavequantum that is bound at a parity of cosms, which were unknown before our theory.

How relativity theory shows, no force exists for electromechanic parallelism. Clearly: "Quantum Mechanics" till now was working **exclusively** with the wavequantum spins and their relations, because of its assignment error. From this fact, it concluded on the rotations of corpuscles, but it did not see the reality completely. Wave mechanics cannot say anything about the origin of the universe structures, which are given by the particles, because it researches only energy levels in temperature equivalents and the possible principles of wavequanta among themselves.

Seen as a draw, the level of knowledge of "Quantum Mechanics" corresponds to the point of view of a scientist who researches boiling-points of substances thinking the substances to zero and asserting he would be able to cause the origin and the material coherences of these substances from this doing. Every boiling temperature would be one substance at the same fact. Substances with three boiling temperatures next to each other would be consisting of three substances (analogy with fat mixtures). His opinion culminates in the assertion, all substances would come from one original substance that would be equal to the unified high boiling temperature laying above the other well-known temperatures: the substances would arise from the Big Bang and of that original substance.

Such a point of view is **unfinished**! Because everybody knows that one cannot conclude on the anatomy of the pig from the boiling point of the lard. Our anatomy of the substances doesn't be caused in the "Quantum Mechanics", but in the relativity theory well-founded in connection to the historically first quantum-mechanical fundamental knowledge.

The assertions of "Quantum Mechanics", photons, W and Z bosons and "quarks" would be particles are wrong. These states are wavequanta, which are made by pair forming or which have come from annihilation of particle pairs. The pair forming energy is the double of the amount of a resting energy:

$$E_{pair} = E_{\gamma(P)} \geq 2 \left| E_{Ao} \right| . \qquad (2.4,52)$$

We distinguish the space into both categories:

1. Vacuum space is an absolute space (hyperspace) in which no broader conditions are available than the limitation of the velocity c for all the microcosms running through a vacuum microcosm and for all wavequanta and protocosms. Where is no vacuum, there cannot be a particle. The vacuum is the condition of the eternity - eternal way, eternal time, eternal waytime, therefore an eternal space.

2. Field space represents the relative space - the subspace –, which only exists by the fact that in vacuum movement relations are set between the particles and that they have projected on the magnetizing and polarizing of the vacuum from which the physical dimensions are able to be measured. The motion relations aren't of eternal duration; they permanently change. By this fact, every field space becomes a finite spacetime or waytime that nature consists of the curvature.

In the course of this misunderstanding of particle concept, also wavequanta were called as "quasi particles" in the area of their using in the solid state of physics. Wavequanta *aren't* particles. So this concept is wrong, also the concept of "exchange particles". In the end, it is really valid:

Interacting wavequanta are **electromagnets and/ or gravitomagnets working on each other and making work on each other made of microcosms and of their magnetized stationary vacuum!**

## 2.5. Equivalence of Both Elementary Charges

The external mass $m_{gq}$ of the primary electrogravitational cosms, of the graviton g and of the electrograviton q, is dependent on the length of the cosm oscillation $\lambda_{gq}$. The amplitude $R_{gq}$ is a result of lambda $\lambda_{gq}$ divided by $2\pi$. External energy results from the action of this cosm oscillation. The resting mass and the resting elementary charge of gravitation and electrition make the graviton mass $m_{gq}$ or the electrograviton by charge $e_o$. In the sense of our axiom "The world is oscillating because of its equal rank contrast of the electrition and the gravitation", we take both "primordial charges" forming the same amount. Certainly, this first real charge of a cosm is the original state in the understanding of the matter concept, but below the horizon $r_o$ of this "first charge" the anything moved is located, which represents the real pre-condition of "first charge" in the sense of still being no matter. This is the isolated imaginary mass "$M_{gq}$" (see section 2.7.). Elementary particles are surrounded of an elementary field of monopoles (dipoles in reality) compensating in parity of electromagnetism and gravitomagnetism, these are two vacuum cosms of radiation, of e. m. and g. m. radiation.

We use the analysis of the measurement's units. Under these conditions, the electric gravitational equivalence mass $m_{gq}$ can be calculated from the force equations:

| | | |
|---|---|---|
| Coulomb constant | $k_o$ = | $8.987551788 \times 10^9$ Nm²/C², |
| Electrical elementary charge | $e_o$ = | $\pm 1.60218943 \times 10^{-19}$ C, |
| Gravitational constant | $G_v$ = | $6.674 \times 10^{-11}$ m³/kgs², |

$$\mathbf{F}_q = k_o \times \mathbf{e}_o^2 / r^2 \qquad (2.5,1)$$

$$\mathbf{F}_g = G_v \times \mathbf{m}_{gq}^2 / r^2 \qquad (2.5,1a)$$

$$\mathbf{F}_g = \mathbf{F}_q$$

$$\chi = k_o \times \mathbf{e}_o^2 = G_v \times \mathbf{m}_{gq}^2 \qquad (2.5,2)$$

$$\chi = 2.3071144 \times 10^{-28}\ \mathrm{Nm^2}$$

$$m_{gq} = \pm 1.85926572 \times 10^{-9}\ \mathrm{kg}$$

Electrical and gravitational resting masses can be calculated now into each other by the constant $k_q$. Their vectorial polarizing of value is defined with this premise on a parallelism: A positive electrical charge corresponds to a positive gravitational charge. Like there is a general gravitational elementary quantum ħ related on mass in vector shape, it also exists the electric elementary quantum $\bar{\mu}$ related on charge as vector externally appearing as a monopole, because all the observer vectors are moving along with changings of their primary fields. With $\mathbf{m}_{gq} = \mathbf{e}_o \times k_q$ are valid:

$$k_q = (k_o / G_v)^{1/2} \quad , \qquad (2.5,3)$$

$$k_q = 1.1604531234 \times 10^{10}\ \mathrm{kg/C}\ ; \qquad (2.5,6)$$

Physics calculated its wavequanta theories today in principle with Planck's constant h relatively to the electrition. Contrarily, here is the μ feature given objectively: this electrograviton, one times charged electrically as a single charge particle, represents the smallest e. m. microcosm in an integer Planck quantum h in the shape of μ. Both quanta connect the oscillation of their own field to an integer period. The world has consequently to be divided into electrical /electromagnetic and gravitational/ gravito-magnetic oscillating spaces.

Motion processes of the gravitational masses are also able to be described by the Maxwell system of equations in analogy to the electrition. All the equations of Maxwell's theory remain valid, if one takes it to connection with the relativity and to the question of the cosms and wavequanta in which every electric dimension corresponds to a gravitational dimension. On account of simplicity, we calculate with the amounts of the vectors.

The electrogravitational current, symbolized with I, is defined as the strength of an electrogravitational current of charges (electrogravitational charges or masses), which is flowing into both straight parallel conductors or motion orbits with a distance of gravitational centers of one meter and which between the conductors or the motion orbits causes the force of $2 \times 10^{-7}$ N per meter (intensity of the compact charge Q or m in shape of their cosm charge addition). A velocity of 1 m/s is reached with the measurement unit of 1 Ampere or of a point-like charge of $1.16045 \times 10^{10}$ kg:

(cf. /Q 5/ in the following, page 245-322, equations (E1 - E112))

$$1\ \mathrm{Ampere} \equiv 1.1604531234 \times 10^{10}\ \mathrm{kg/s}\ . \qquad (2.5,7)$$

$$1\ \mathrm{A} = (1.1604531234 \times 10^{10}\ \mathrm{kg/s})\ \mathbf{/k_q}\ .$$

A gravitational current can be shown directly in kg/s according to the definition that one doesn't intend it onto electric magnitudes.

The electrogravitational quantity (charge quantity) Q is the product of current **I** and time t while the current flows:

$$Q = \mathbf{I} \times t \qquad (E1) \qquad (2.5,8)$$

$$m = Q \times k_q \qquad (2.5,9)$$

$$1 \text{ Coulomb} = 1 \text{ As} \equiv 1.1604531234 \times 10^{10} \text{ kg} \qquad (2.5,10)$$

$$1 \text{ C} = 1.1604531234 \times 10^{10} \text{ kg}/\mathbf{k_q}$$

$$\mathbf{I} = dQ/dt = dm/k_q \times dt \qquad (E3) \qquad (2.5,11)$$

The electrogravitational elementary charge $e_o$ in Coulomb is the same as the elementary mass $m_{gq}$ in kg, if the electric force between two elementary charges $e_o$ is set equal to the gravitational force of two elementary masses $m_{gq}$ :

$$1.60218943 \times 10^{-19} \text{ C} = 1.85926572 \times 10^{-9} \text{ kg}/k_q \qquad (2.5,12)$$

The size Volt is the electrogravitational voltage U between two points of a conductor or of a motion orbit in which between both points a power of 1 W is changed with a current of 1 A or of 1.1604531234 × $10^{10}$ kg/s:

$$U = P/\mathbf{I} = P \times dt \times k_q/dm \; ; \qquad (2.5,13)$$

$$1 \text{ V} = 1 \text{ W}/1 \text{ A} = (1 \text{ kgm}^2/\text{s}^3)/1 \text{ A}$$

$$1 \text{ V} = (1 \; \mathbf{k_q} \text{ kgm}^2/\text{s}^3) / 1.1604531234 \times 10^{10} \text{ kg/s}$$

$$1 \text{ V} = \mathbf{k_q} \times 8.61732353 \times 10^{-11} \text{ m}^2/\text{s}^2 \qquad (2.5,14)$$

$1 \text{ V} = k_q \times v_q^2$ ; $v_q = 9.282954 \times 10^{-6}$ m/s with U = 1 V .

Under these circumstances, a cosm charge or a cosm mass is moving with the velocity $v_q$ on its orbit, while the intensity of the current does not play some role finding its expression in the proportionality of eq. (2.5,13). The voltage is a velocity analogon:

$$U = v^2 \times k_q \qquad (2.5,15)$$

$$v = \sqrt{(U/k_q)} \qquad (2.5,16)$$

There, v is the velocity of the charge Q or the mass m on its motion radius $R_w$ in a curved orbit under the voltage U.

From this leading, the electrogravitational resistor is becoming this form:

$$R_{eg} = U/\mathbf{I} = v^2 \times k_q^2 \times dt/dm = v^2 \times k_q \times dt/dQ \; , \qquad (E4) \qquad (2.5,17)$$

composed itself with measurement unit when it is valid:

$$1 \; \Omega = 1 \text{ V}/1 \text{ A} = \mathbf{k_q^2} \times 7.4258264 \times 10^{-21} \text{ m}^2/\text{kgs} \; . \qquad (2.5,18)$$

It is the quotient of charge velocity and intensity of the charge current.

In our theory, any resistor means the state of the interaction between rotation fields – between electromagnetic or/ and gravitomagnetic wavequanta.

The resistor is dropped, if wavequanta are lifted. In vacuum, electrogravitational superconductivity arises without interaction to available particles. Every movement of an electrogravitational charge, no matter how small it is, causes a rotation field again, which works down superconductivity in the fall of performance from work.

The electrogravitational work $W_{el}$ is

$$W_{el} = U \times \mathbf{I} \times t = U \times Q = v^2 \times k_q \times Q = m \times v^2 \qquad \text{(E22)} \qquad (2.5,19)$$

in the measurement unit 1 J = 1 Ws.

In this the electrogravitational power is caused by:

$$P = U \times \mathbf{I} = m \times v^2 / t_{(I)} = W_{el} / t \qquad \text{in J /s.} \qquad \text{(E23)} \qquad (2.5,20)$$

a) **Movements of Monopoles form Dipoles**

The electrogravitational monopole field strength E has come from:

$$E = F / Q = U / d = F \times k_q / m \qquad \text{(E24/25)} \qquad (2.5,21)$$

d - distance of two plate charges
F - force working on the charge Q in this field.

In our terminology, it represents an acceleration or delay magnitude of the electrogravitational charge:

$$1 \text{ V} / 1 \text{ m} = \mathbf{k_q} \times 8.61732353 \times 10^{-11} \text{ m/s}^2$$

$$1 \text{ V} / 1 \text{ m} = \mathbf{k_q} \times a_q$$

$$E / k_q = a = F / m \quad . \qquad (2.5,22)$$

The electrogravitational shift density D is calculated from the charge Q per plate area A or mass m per A:

$$D = Q / A = \varepsilon_o \times E = m / (k_q \times A) \; . \qquad \text{(E26/27)} \qquad (2.5,23)$$

It represents a charge density per area, also gravitationally in kg /m².

Electrogravitational monopole field strength at surfaces is

$$E = Q / (A \times \varepsilon_o) \; . \qquad \text{(E28)} \qquad (2.5,24)$$

Electrogravitational monopole field strength at spherical surface is

$$E = Q / (4\pi \times \varepsilon_o \times r^2) \; . \qquad \text{(E29)} \qquad (2.5,25)$$

In vacuum, there is valid

$$E = k_o \times Q / r^2 \qquad (2.5,26)$$

$$E = G_v \times m \times k_q / r^2 \qquad G = G_v \times G_r \qquad (2.5,27)$$

$$k_o = 8.987551788 \times 10^9 \text{ Nm}^2 / \text{C}^2 \qquad (2.5,28)$$

$$k_o = k_q^2 \times G_v \qquad (2.5,29)$$

$$E = U / r = C \times U / (4\pi \times \varepsilon_o \times r^2) \; . \qquad \text{(E30)} \qquad (2.5,30)$$

Electrogravitational capacity is also mass in movement

$$C = Q / U = m / k_q^2 \times v^2 \qquad \text{(E31)} \qquad (2.5,31)$$

$$1\ F = 1\ C / 1\ V = 1.34665145 \times 10^{20}\ kgs^2 / m^2 \times \mathbf{k_q}^2 \ . \qquad (2.5,32)$$

Under these circumstances, the capacity is not this what its name should be expressing - a capaciousness of charges with storage -, because it is always in relations with movement with speed v or like down shown onto acceleration a.

One Farad corresponds the special constant "amplitude mass of a cosm" $K_{Pl}$ (see section 2.15.) in calculation as follows

$$1\ F = K_{Pl} / a_{Pl} \times k_q^2 \qquad (2.5,33)$$

$$a_{Pl} = 10^7\ m / s^2$$

$$K_{Pl} = 1.34665145 \times 10^{27}\ kg / m = c^2 / G_v = M_o / R_o$$

$$C = |M| / r_C \times a_C \times k_q^2 \ . \qquad (2.5,34)$$

It is divided by the acceleration (electrogravitational field strength) $a_{Pl}$ of $10^7$ m /s² arbitrarily established, which is given with the definition of $\mu_v$ (see section 2.3., page 307). The amplitude mass tells us how many constant and isolated cosm mass $M_o$ are given onto a specific cosm amplitude $R_o$. This would be one Farad. Therefore, the mass $|M|$ surpasses that $M_o$ at higher capacities.

Electrogravitational two plate condenser is

$$C = \varepsilon_o \times \varepsilon_r \times A / d \qquad \text{(E32)} \qquad (2.5,35)$$

Relative permittivity $\varepsilon_r$ or monopolar state number $G_r$ as substance-specifics constant in electrical or gravitational fields.

Substance specifics were unknown to determinations of the gravitational constant G till now. The relative permittivity is between 1 in vacuum (there also $G_r = 1$, $G = G_v$) and till 4000 in ceramic masses. It represents virtually the storage ability of the material of electrical charges. If we convert electrical charges on masses as a kind of charge, then equivalent corrections arise from the electrical gravitational constant $G_v$.

The gravitational characteristic of the monopolar state constant seems to be able to be found that in the range of a thick mass collection, like in denser atom nuclei and in the denser packing of nuclides in the substance, an electrically neutral mass is attracted stronger. In this respect. it should exist a directly proportional analogy of monopolar state constant corresponding to the ordinal number from the periodic system of the chemical elements and to the density of that substance.

The gravitational masses will also reflect their polarity in the attraction of different masses in a correction factor $G_r$, which is small but measurable. Causes by the relations of $10^{10}$ between the units of Coulomb and Kilogram, we estimate gravitational monopolar state numbers $G_r$ between less than $1+10^{-10}$ and $1+10^{-7}$. Already just one decade ago the fundamentally researching physics meant to be on the lane of a "hyperweak" force as it was working fall experiments proving the equivalence of heavy and inertial mass and finding substance-specifics deviations. This is the monopolar state number dependent on the gravitational density, which has to take in account at the gravitation constant. …
Deleted.

Spherical capacitor

$$C = 4\pi \times \varepsilon_o \times \varepsilon_r \times r_C \qquad \text{with} \qquad \text{(E33)} \qquad \text{(2.5,36)}$$

$$r_C = r_1 \times r_2 /(r_2 - r_1)$$

Idealizing, dot-like inside sphere $r_1 = r$ and $r_2 \rightarrow \infty$

$$C = 4\pi \times \varepsilon_o \times \varepsilon_r \times r \qquad \text{(E43)} \qquad \text{(2.5,37)}$$

Neglecting this, the real radius $r_C$ is always larger than the idealized radius r. And with it, the capacity is larger, too.

Electrogravitational force in the electrogravitational field

a) Between two point charges of spherical symmetry

$$F_{eg} = Q_1 \times Q_2 /(4\pi \times \varepsilon_o \times \varepsilon_r \times r^2) = G_v \times G_r \times m_1 \times m_2 /r^2 \qquad \text{(E38)} \qquad \text{(2.5,38)}$$

$$k_o = 1 /(4\pi \times \varepsilon_o)$$

In vacuum

$$F_{eg} = k_o \times Q_1 \times Q_2 /r^2 = G_v \times m_1 \times m_2 /r^2 \qquad \text{(2.5,39)}$$

b) Between two plates

$$F_{eg} = \varepsilon_o \times \varepsilon_r \times A \times U^2 /2 \times d^2 \qquad \text{(E39)} \qquad \text{(2.5,40)}$$

$$F_{eg} = \varepsilon_o \times \varepsilon_r \times A \times E^2 /2 \qquad \text{(E40)} \qquad \text{(2.5,41)}$$

In vacuum

$$F_{eg} = \varepsilon_o \times A \times E^2 /2 \qquad \text{(2.5,42)}$$

Electrogravitational energy $E_k$ (in J) of the moved electrogravitational monopole field (charge field or mass field, a kinetic energy):

$$E_k = P \times t /2 = U \times Q /2 = C \times U^2 /2 = m \times v^2 /2 \; . \qquad \text{(E41)} \qquad \text{(2.5,43)}$$

Like the relativistic mass m or $m_A$ (as m of $m_o$), too, the relativistic charges Q, powers P and capacities C have to be observed.

b) **<u>Dipole Movements form Movements of Dipoles and Monopoles</u>**

Dipole field strength as vectorial magnitude in the movement circle of a helix with N coils, the current **I** and in the area of the length of the field line l

$$H = \mathbf{I}\, N /l \quad \text{in A /m or Vs /A} \qquad \text{(E44)} \qquad \text{(2.5,44)}$$

Gravitationally is valid 1A /m = (1.1604531234 × $10^{10}$ kg/ms) **/$k_q$** .

Dipole field strength in “straight" movement orbit (N = 1, l = 2πr):

$$H = \mathbf{I} /(2\pi r) \qquad \text{(E45)} \qquad \text{(2.5,45)}$$

The dipole voltage

$$\mathbf{I}_{WQ} = H\, l \quad \text{in A} \qquad \text{(E46)} \qquad (2.5,46)$$

is a current intensity! It follows the dipole induction:

$$B = (1/A) \int U\, dt = (k_q/A) \int v^2\, dt \qquad \text{(E48)} \qquad (2.5,47)$$

in $Vs/m^2 = T$ or $Hz = s^{-1}$,

$$B = \mu_v H \qquad \text{(E49)} \qquad (2.5,48)$$

$$1\ T = \mathbf{k_q} \times 8.61732353 \times 10^{-11}\ Hz$$

$$1\ T = k_q \times f_q \qquad f_q = 8.61732353 \times 10^{-11}\ Hz$$

$$B = k_q \times f_B\ . \qquad (2.5,49)$$

The induction B is an analogon onto the frequency $f_B$, which is alone related with one single cosm charge. Then the product of induction frequency and Planck's constant $f_B \times h = E_{w(B)}$ has to give the De Broglie momentum mass. It has the amount of $E_{w(B)} = f_q h = 5.709823 \times 10^{-44}$ J being the measurement frequency $f_q$.

For the bipolar state number or relative permeability $\mu_r$ is valid:

$$B = \mu_v\, \mu_r\, H\ . \qquad \text{(E51)} \qquad (2.5,50)$$

The gravitational dipole induction B can be expressed in our terminology as a frequency or as **angular velocity** of special shape, because a moved cosm charge e or a cosm mass m is forming a wavequantum of a determined wave frequency f over its wave energy potency $E_w$ after De Broglie.

The dipole flow $\Phi$ than is becoming to the product of dipole induction and cross-cut of the field

$$\Phi = B \times A\ . \qquad \text{(E50)} \qquad (2.5,51)$$

The law of induction is called as induced voltage $U_E$

$$U_E = -\,N\, d\Phi/dt \qquad \text{(E52)} \qquad (2.5,52)$$

$$U_E = -\,B\, l\, v\ , \qquad \text{(E53)} \qquad (2.5,53)$$

Self-induction

$$U_E = -\mu_v\, \mu_r\, A\, N^2\, d\mathbf{I}/(l \times dt) \qquad \text{(E54)} \qquad (2.5,54)$$

and inductance of a ring or a cylinder coil:

$$U_E = -\,L\, d\mathbf{I}/dt\ . \qquad \text{(E55)} \qquad (2.5,55)$$

The dipole force $F_w$ (force between wavequanta) in the field between two dipoles can be calculated:

$$F_w = B\, l\, \mathbf{I} \quad \text{or} \quad F_w = Q\, v\, B = m\, v\, B/k_q\ . \qquad \text{(E56,57)} \qquad (2.5,56)$$

$$F_w = m\, v\, f_B = m\, a_B\ , \qquad (2.5,57)$$

$$a_B = v\ B\ /k_q\ . \qquad (2.5,58)$$

With an accelerations action $a_B$ on a masse m or on its charge equivalent Q, the force $F_w$ is reflected.

The charge Q is relativistic intensity of all the relativistic cosm charges $e_t$. Only in the rest of vacuum or at the projection over the area of stationarity $\Sigma$ this charge $Q_o$ valid (like also $m_o$ for a cosm).

$$Q = Q_o\ /W_{SRT} \qquad \text{(cf. eq. (2.12,16), page 394).}$$

The Lorentz force of a gravitational masse m carrying an elementary charge $e_o$ is found with

$$r = m \times v\ /\ (e_o\ B) \qquad (E58) \qquad (2.5,59)$$

= escaping magnitudes / binding magnitudes.

Between idealized parallel conductors, the force is active:

$$F_w = \mu_v \times \mu_r \times \mathbf{I}_1 \times \mathbf{I}_2 \times l\ /(2\pi r) \qquad (E59) \qquad (2.5,60)$$

Here is the electric work of a dipole $W_{el}$:

$$dW_{el} = U\ \mathbf{I}\ dt \qquad (2.5,61)$$

$$dW_{el} = L\ \mathbf{I}\ d\mathbf{I} \qquad (E60) \qquad (2.5,62)$$

$$W_{el}\ = \tfrac{1}{2} L\ \mathbf{I}^2 \qquad (2.5,63)$$

Dipole work of a coil (volume $V_o$):

$$W_{el} = \mu_v \times \mu_r \times H^2 \times A \times l\ /2 \qquad (E61) \qquad (2.5,64)$$

$$W_{el} = \mu_v \times \mu_r \times H^2 \times V_o\ /2\ . \qquad (E62) \qquad (2.5,65)$$

From De-Broglie-terms, the wavequantum energy $E_w$ is known as result of an interaction, therefore, as an equivalent of work as well as a product of angular velocity $\omega_w = 2\pi f_w$ and of Planck's constant $\hbar = h/2\pi$:

$$E_{w(n)} = \hbar_{(n)} \times \omega_{w(n)} = m\ v_{(n)}\ c = Q \times k_q \times v_{(n)} \times c \qquad (2.5,66)$$

$$E_{w(n)} = Q \times c \times \sqrt{(U \times k_q)}\ . \qquad (2.5,67)$$

With the resonance frequency equation and (2.5,32) we find

$$f_r = 1\ /[2\pi\ \sqrt{(LC)}] \qquad (2.5,68)$$

and the gravitational inductance in Henry:

$$1\ F = 1.34665145 \times 10^{20}\ kgs^2\ /m^2\ \mathbf{\times\ k_q^2}$$

$$1\ H = 7.4258262 \times 10^{-21}\ m^2\ \mathbf{\times\ k_q^2}\ /kg\ . \qquad (2.5,69)$$

Because of (2.5,34) inductance L only can be understood as the counterpart to capacity multiplied with the part $k_\tau = 1s/2\pi$ of period time $\tau_r = 1/\ f_r$ in square:

$$L\ = r_L \times a_L \times k_q^2 \times k_\tau^2\ /m_w\ , \qquad (2.5,70)$$

Maxwell's theory has covered spacetime-like magnitudes up in arbitrary appointments of electrical magnitudes. With the disclosure of the complicated combinations both the gravitational and the electrogravitational oscillating circuit are conceived (see section 2.10.). The last concept means the analogy of universe with gravitational capacity and electric inductance in the context of the constant h in the following expression:

| | |
|---|---|
| Capacity: | Isolated mass of universe in movements with (2.5,34) added in both charge qualities concerning the amount, gravitational function, gravitational charges are given. That's **Mass.** |
| Inductance: | Electromagnetism of universe in movements, free electric charges compensate each other; alone the wavequantum interactions are present, so the electric magnetism of annihilated mass /antimass. **This is Heat (radiation).** |

The product LC is made by:

$$L \times C = |M| \times r_L \times a_L \times k_\tau^2 / (m_w \times r_C \times a_C) \; . \qquad (2.5,71)$$

There are the relations: isolated sum of amounts of mass/ antimass including the surplus of ordinary mass of a cosm $|M| = M + \bar{M} + M_o$ relatively to the momentum mass of photons $e_w$ ($m_w = e_w \times k_q$), from, which period time $\tau_o$ is determined. Ordinary mass that is not annihilated is the residual oscillation mass $M_o$ of that cosm from that the conclusion follows:

> Universe is a primary, complicated programmed harmonically and hierarchically, **ideal oscillator**! It is oscillating between the states of gravitation and radiation cosms.

## 2.6. Mass Concept and Resting Systems

We distinguish four types of mass, which were not immediately measurable themselves as such features:

1. **Electrogravitational resting mass** or **cosm mass,**

2. **Electrogravitational momentum mass** or **wave mass (wavequantum mass).**

Both types can be distinguished into these subs:

| | |
|---|---|
| 1.a) Gravitation: | Gravitational resting mass<br>$M_o$ (isolated cosm mass)<br>$m_o$ (external mass of cosm) |
| 1.b) Electrition: | Electric resting charge<br>$e_o$ – elementary charge |
| 2.a) Gravitation: | Gravitomagnetic wave mass<br>$m_w$ (mass of wavequantum) |
| 2.b) Electrition: | Electromagnetic wave mass<br>$e_w$ calculated momentum into $m_w$. |

There are the categories:

| | |
|---|---|
| 1.a) Pure gravitational rest mass: | - gravitons/ antigraviton trunks as well as subtrons/ antisubtron trunks as gravitational vacuum. A gravitational vacuum cosm is always a gravitational particle pair. |

1.b) Pure electric rest mass : - electrogravitons and electroantigravitons as electric vacuum.
An electric vacuum cosm is always an electric particle pair.

1.c) Unified electric and gravitational rest mass : - Electrogravitational cosms or anticosms as electrogravitational particles or antiparticles,

2. Compensated wave masses, which equalize magnet and antimagnet at the respectively real particle.

Electrogravitational cosms a priori are conceived as quantitative surplus from vacuum. Their existence is polarizing and magnetizing that vacuum into dual features: into charge movements and into wave extensions.

The electrogravitational rest mass or rest charge $m_o$, $e_o$ and the electrogravitational wave mass $m_w$, $e_w$ are members of two different resting systems, which are distinguished by their movement of the amount of vacuum light velocity (cf. (1.1,1)). In stationary vacuum, the absolute relations are working. How do the external mass $m_o$ and the isolated masse $M_o$ of a cosm work together? Firstly, we noticed that the isolated mass does not work up to the outside by itself, because this mass isn't yet existing, but it only is made by drawing the movement of the moved anything. Its equivalent is the cosm radius $R_o$ or of that perimeter u, which corresponds to the period time $\lambda_o$. From this magnitude, the frequency of a cosm $f_o$ is able to be calculated (2.10,7).

We can notice, that Planck's equation (2.4,8) and Einstein's equation (2.4,16) are valid for the ideal oscillator. In addition, for equivalent external energies of the main level n = 1 of a single quantum h, those equations and the waytime-like definition of resting mass of a cosm are derived as follows:

$$m_o = h/(2c^2\tau_{o/}2)$$

$$m_o = k_t/\tau_o \quad , \quad m_{o(PK)} = k_t/\tau_{o(PK)} \qquad (2.6,1)$$

$$k_t = h/c^2 = 7.372615 \times 10^{-51}\ \text{kgs}$$

$k_t$ al **mass-time constant**; or

$$m_o = k_s/\lambda_o \quad , \quad m_{o(PK)} = k_s/\lambda_{o(PK)} \qquad (2.6,2)$$

$$k_s = h/c = 2.2102544 \times 10^{-42}\ \text{kgm}$$

$k_s$ as **mass-way constant**.

These equations are also valid for protocosms related on their period time $\tau_{o(PK)}$. What is just the mass of a cosm or of a protocosm? This is nothing else than a further alternative concept of reality of movement of their oscillating sphere:

$$m_o = k_s/\lambda_o = k_t/\tau_o \quad .$$

By substitution of mass, only the calculations are kept between oscillation length and period time:

$$\lambda_o = c \times \tau_o \quad .$$

This means: the way as also the time are formed from vacuum light velocity c. Way and time are forming the mass. **The mass is space-forming waytime!** One can see it as result of movement. From the inside of a cosm, nothing comes out from no working. Not once the unpaired wavequantum of internal mass movements ħ is coming out in that form like it is inside working: it only projects electrically as a magnetic momentum $\bar{\mu}_{½}$ to the outside (Fermi statistics). It is essential that the oscillating

sphere projects a central reference point. That fact is valid as the gravitational center of external mass m of cosm. At the same fact, the external center is the same point as the center of gravitation of the internally oscillating mass M. Just here, both origins of both coordinate systems are created, to the one hand, the internal elementary cosmic system locked there, and to the other hand, the external receptacle cosmic system related there.

The momentum mass or the wave mass of a wavequantum for the observation of just one single level n the equations are following:

$$m_{w(n)} = n\, k_t / \tau_{w(n)}\,, \qquad m_{w(n)} = n\, k_s / \lambda_{w(n)} \qquad \text{(cf. (2.12,7))}. \qquad (2.6,3)$$

Definition of mass:

> That mass m, which is able to detect from the outside, is reversed proportional to the value of period time $\tau$ or of oscillation length with the symbol $\lambda$.

Now the mass is also nothing else than a function of a movement locked in a cosm totally, which we sign as oscillation. Stronger movement onto a higher level of amplitude means a smaller external mass. The gravity center of a mass quantum is in the center of the oscillating sphere $\Sigma_o$.

> **The larger a cosm amplitude $R_o$, the more internal mass $M_o$ is included while drawing less external mass $m_o$ in the shape of its oscillation.**

Equations (2.6,1) and (2.6,2) are not valid for the sum of a compact mass, which is combined from a multiple number of cosms like the isolated total mass $M_o$.

The difference between the electrogravitational rest mass $m_o$ of an electrogravitational cosm and an electrogravitational momentum mass $m_w$ of photons and fallons consists of the condition of their respective resting systems:

- Electrogravitational resting system : **v-rest**, v-inertia,
- Electrogravitational momentum system : **c-rest**, c-inertia.

Both movement systems are separated by the limit velocity named vacuum light velocity c measured at the stationary vacuum.

The v-inertial rest system works, because theoretically the same distribution of electrogravitational cosms and anticosms is broken: quantitative asymmetry instead of symmetry. Or: v-inertia is a phenomenon of universal resistor. Relativistic resistor: it will be larger the faster a particle shall be moved in vacuum. If we gave a synthetic symmetry relation of electrogravitational coino-mass and antimass in their center of gravity after congruence, then this total body would be without v-inertia. That body would get the c-inertia, and it may be able to be controlled by small photon momenta at light velocity.

Summarized the inertia is not to understand as an “integral persistence phenomenon in the given movement". The microcosm only seems to persist in the infinitely small waytime differential dr, dt, from which a differential adjusting of force dF is following. In reality, just also in the observed integrity of movement, it is always changing its movement direction developed by the concert of movements listed by the other microcosms. Inertia has differential changes of forces. Consequently, one cannot define v-inertia or c-inertia as “persistence" in the sense of Newton but rather as **closed causal system of obligation of change of movement** of all microcosms of common hierarchy area! This also means that the apparent rectilinearly unchanged Newton movement of inertia is nothing else than an ideal thing. In reality, the moved body is always making a curved world movement. In agreement with the General Relativity Theory we say: inertial movements without the arbitrary influence of change are arched.

If inertia is reduced in divergence of being without mass, the body reaches the greatest arc of the superordinated spacetime moving with almost light velocity. Then a spacetime round is running with exactly the time of space.

1. Asymmetry/ **Asymmetry**:

A coino or a antimass are moved v-inertly if the **electrogravitational surround mass** in its receptacle cosm quantitatively is either existing as a coino or as an antimass: **total asymmetry**. For example:

- Electrogravitational cosms internally of electrogravitational receptacle cosms (protons in universe);

- Electrically charged cosms, which are forced into v-inertial rest system (coupling of gravitational and electric movement; protons relatively to electrons by $\pm e_o$);

2. Asymmetry/ Symmetry:

One lonely existing coino or antimass would be moved c-inertly if the **electrogravitational surround mass** of its receptacle cosm would consist symmetrically from coino and from antimass. This kind of mass apparently doesn't exist.

3. Symmetry/ Asymmetry:

A coino-mass-antimass-symmetry is moving itself with c-inertia although the **electrogravitational surround mass** of its receptacle cosm consists asymmetrically of coino or of antimass: **symmetry**. For example:

- Spaceship driven by photons consisting from 1:1 masse and antimass (in the storage ring).

4. Symmetry/ Symmetry:

A coino-mass-antimass-symmetry gives the condition of the possibility of c-inertial movement inside the symmetric receptacle cosm: total **symmetry**.
- This kind isn't existing here. In certain measure the above called spaceship corresponds to a proto-cosm-antiprotocosm, to an ideal symmetry.

## 2.7. Mass Relations and Energy Concept

Because of (2.6,2) and (2.8,3), the relations of external mass $m_o$ to isolated mass $M_o$ or their energy equivalence $E_{Ao}$ as well as $E_o$ **of a cosm** can be calculated. We only have relations of external and isolated movements! Here, the amounts of the natural vectors are valid:

$$m_o = \hbar \times c / G_v \times M_o \; ; \quad m_o = \text{const.} / M_o \; ;$$

with mass reference constant $d = \hbar \times c/G_v$ it is given:

$$\mathbf{m_o = d / M_o \quad ; \quad d = 4.73715505 \times 10^{-16}\ kg^2 \; ;} \qquad \mathbf{(2.7,1)}$$

$$\alpha_2 = m_o / M_o = d / M_o^2 \quad \text{(see 4.6.).} \qquad (2.7,2)$$

It is relativistically valid:

$$m_A = d / M_A \; . \qquad (2.7,3)$$

A relativistically external increase of masse m means the internal decrease of the masse M. That sentence reversed is valid for the moved observer along his cosm. This is the base of the mass defect $\Delta m_{(n)}$ or of radiation energy $\Delta E_{(n)}$.

For protocosms, the divergence of protocosm mass $m_{o(PK)}$ would be valid to cosm mass $m_o$ if their internal masses $M_{o(PK)} = M_o$ were equivalent. For reasons of simplification, we idealize the outer masses on equality:

$$m_{o(PK)} = d / M_{o(PK)} \qquad (2.7,4)$$

$$m_{o(PK)} = d / M_{o(PK)} = d / K_{PL} \times R_{o(PK)} \qquad (2.7,5)$$

$$m_{o(PK)} = d / K_{PL} \times R_{o(PK)} = 3.5177293 \times 10^{-43}\ \text{kgm} / r_{o(PK)}$$
$$m_{o(PK)} \equiv m_{o(K)} \qquad (2.7,6)$$

$$\alpha_{2(PK)} = m_{o(PK)} / M_{o(PK)} = d / M_{o(PK)}^2 \ . \qquad (2.7,7)$$

We have got the **universal way mass $M_r$** as constant

$$M_r = d / K_{PL} = 3.5177293 \times 10^{-43}\ \text{kgm} \quad . \qquad (2.7,8)$$

It is working like this:

$$M_r = m_{o(PK)} \times R_{o(PK)} \qquad (2.7,9)$$

$$M_r = m_{o(K)} \times R_{o(K)} \ . \qquad \text{(cf. (2.15,8))} \qquad (2.7,10)$$

The product of the mass of a protocosm or of a cosm $m_o$ with the own amplitude $R_o$ gives the elementary way mass $M_r$. Consequently, the mass is the expression of the rotation movement.

For electric charges e as electric cosms (external A, internal I), it is possible to define the reference with the constant $k_q$:

$$e_A = d_e / e_I \quad ; \quad d_e = 3.5177293 \times 10^{-36}\ C^2 \ . \qquad (2.7,11)$$

In an Einstein calculation, it also exists the energy reference constant b:

$$E_{Ao} = b / E_o \quad ; \quad b = 3.82648849 \times 10^{18}\ J^2 \quad . \qquad (2.7,12)$$

For divergent relations at protocosms, the analogy is valid with eq. (2.10,23):

$$E_{Ao(PK)} = b / E_{o(PK)} \ . \qquad (2.7,13)$$

Mass and energy only have remained concepts of vividness! They are always reduced to the motion concept of spacetime. After we defined the mass, the energy should find a corresponding explanation.

> One speaks of **ENERGY** when the movement of the anything moved is able to be judged inside of a movement limit relatively and when this movement is an oscillation again or the system is a cosm, at last.

In this respect, the energy is the drawing of the **anything moved** (h, m, F, P) over a waytime (f, c, v, s, t), no matter how one may speak about this fact.

> Where a cosm does not oscillate, there is no energy!

Only the change of the oscillation behavior of a cosm against the vacuum is forming a change of energy $\Delta E_{(n)}$. That result is always a wave energy of momentum, which can be transferred as radiation energy changing motion states! Each other energy relation at this state represents an unreal construction. No concepts of energy, mass, or force exist outsides of the closed and curved matter!

The moved cosm or the cosms cannot be localized since only the wavequanta are identifiable in the process of wavequantum forming. Today, one believes in the equivalence of the particle concept with

the wavequantum concept. Max Born meant, the “particles" could be found inside of the wave amplitude area of $r^2 \approx R_{w(n)}{}^2$.

With the “quantity of particles, which make a wavequantum" or better, with the **wavequantum quantity,** physics uses the concept of **intensity amplitude**. This intensity counts the wavequantum quantity. A single wavequantum can result from one movement of a single particle or a particle quantity in the same movement function. The wavequantum amplitude forms the intensity of wavequanta in the feature of their number, which is proportional to the number of particles. Till now, one assumed with Dirac that the quantity of cosms would play no role in reference to the wavequantum relations, because one neglected the real particle concept in contradiction to the wavequantum concept ideally. The facts are here:

1. A determined quantity of elementary cosms $\subset EK$ in the shape of their sum of masses reaches the mass $M_o$ below the horizon of $r_o$ and forms a receptacle cosm.
2. External phenomena diverge to locked on values of protocosm mass $M_{o(PK)}$ below a divergent protocosm horizon $r_k > r_{o(PK)}$: quantitative changes determine the legal quality jump (horizon breakthrough) of installation! This means:

1. The drawing of the intensity amplitude of energy $E = \subset E_{Ao} = \subset m_{Ao} \times c^2$ is the sum of all the external elementary cosm energy. And it almost forms the early stage of the possible isolated energy $E_o$ of the receptacle “protocosm" in its relative outside of the case of a corresponding energy concentration of elementary cosms, $E \rightarrow E_o$.

2. The wavequantum amplitude $R_{w(n)}$ is the early stage of the protocosmic amplitude $½r_k > R_{o(PK)}$. It marks the wavequantum energy $E_w$ as an early stage, too. The protocosm energy $E_{Ao(PK)}$ is measurable as an external energy in divergent calculation of wavequantum energy, because there is an intensity of mass quantity $\subset M_{o(PK)}$ at the inside.

3. Consequently, the quantity of elementary cosms, which could form a receptacle cosm, is developed by the features of elementary cosms, therefore, by their elementary mass $m_o$. In this respect, the amplitude of a cosm represents its isolated mass intensity M.

From this fact follows: if stable cosms couple their rest masses inside their oscillation spheres (spaces dive into each other), then wavequanta only can couple by their interaction areas with measurement of their wave amplitudes (magnetic field couple with bipolar field areas). There aren’t any spatial orbitals in the open cosm!

After the postulate of W. Pauli (1900 - 1958, Pauli principle, 1924), which was confirmed by experiences, now with knowledge of primary and secondary gravitational and electric momenta, we are able to speak about lining up both gravitational and electric wavequanta to spin pairs and forming a wavequantum order. Each work, which is done between these orders – the movements of wavequanta –, leads to the phenomenon of electrogravitational wave. Contrarily, one observes these features:

1. Gravitational wavequanta strive for parallelism and make work to this end.
2. Electric wavequanta line up themselves anti-parallelly in the course of working.

Now it is necessary to know, which momentum is accompanied by stronger force:

1. In universal wavequantum order of relativistically local structures of electrogravitational matter - in each inside of cosm -, the **electric and magnetic forces dominate before** the gravitational force! The wavequantum parity is anti-parallelly forced by the electromagnetic momenta (electromagnets).

2. Quantizing of total mass $M_o$ of electrogravitational inside of cosm, the gravitation dominates **before** the force of electrition, which is sub-ordered. The spacetime isn’t only locked gravitationally, because its radiation cosm closes it electromagnetically using the same condition of gravitation. For electrition it remains open, because it is not able to close this coordinate system by its sum of static charges until isolation state is reached. **The cause is**: one single anticharge or a mass disturbs the closed field. It

opens the curvature in its area. Then it is clear: two contrary masses even open their cosms completely while annihilation.

3. Inside of electric cosms, alone the electromagnetism dominates. Electric cosms are the same as electric charges. Contrarily, they are no photons. Charges are like “light particles”, but photons aren’t “light particles”. There are just 2 light particles in this world, the elementary charges $+e_o$ and $-e_o$. Attention! They exchange their primary photons causing the electrostatic appearance of inversible dipoles.

4. Every wavequantum of gravitation is marked as a **fallon** (after the “free fall”) of gravitomagnetism parallelly to the photon of electromagnetism.

5. In pure cosms, only gravitation dominates the field states.

6. Inside of all the electrogravitational cosms, the electric charges, dominating from strength, determine every wavequantum orders in universe and in its electrogravitational particles as if the particles themselves would be reflections of the rest charges with a small free gift in the form of the gravitational load.

If we look at the movement of the elementary cosms in their receptacle cosm, we are led to the concept of the **parity orbit**, symbol **PB**: in a flat cut of the receptacle cosm, two circular orbits of motion of two elementary cosms are next to each other and touch themselves theoretically tangentially in the center of gravity R = 0 of the receptacle cosm mass. So they form a coupling element in parity of two wavequanta. Because of point six, **antiparallel** magnetic momenta of parity orbits are set in.

> Two electric momenta in antiparallelism $+\mu$ and $-\mu$ compensate their electromagnetic forces with the same turn direction of both charges $+e_o$ and $-e_o$ in just one parity orbit. Their attraction forces them doing this.

Because of the attraction the gravitational momenta of two parity orbits of a gravitationally or electrogravitationally determined cosm run **parallelly**. Two coino-gravitational protocosms, one is negatively and the other one is positively charged, turn their orbit into the same direction, for example to the right. So the e. m. momenta and the charges will be compensated, but the gravitational momenta – both are positive - do not so. Compensating them, too, inside the cosms, quadrupoles of protocosms are necessary, therefore here we need two protocosms of the contrary charge turning to the left but with the same gravitation. This way, the rest mass is added in the receptacle cosm. All the wave masses of PB are compensated to zero. In vacuum also the contradiction of rest mass is compensated.

One needs **four** gravitational parity orbits to compensate gravitational spins and forces, especially one pair with a turn to the right and one pair with the same rotation radius $R_{rot}$ with the turn to the left. Each two e. m. contrary polarized parity orbits lay in one area like the number eight shows, which a point is running incessantly with the defined charge. For example a positive charge $+e_o$ firstly rotates in the right sense at a mass m, which is also positive. Actually, on the contrary circle, a second charge of the same quality and mass is rotating to the left. By this behavior, both dipole vectors $+\mu$ and $-\mu$ work on each other attractively and compensating. Their gravitational vectors +h and -h give repulsion, but their vectors will be forced to zero, too. We create a second parity orbit, which has to compensate the electric charges with two negative charges $-e_o$. Then we had to make an anti-circle in reference to the rotating direction of the electrogravitational running point and to lay it over the given circle. We only get then the complete compensation in the gravitomagnetic quadrupole:

| PB 1 | Charge | Mass | Rotation Sense | Spins |
|---|---|---|---|---|
| | + | g | R | $\mu$ h |
| | + | g | L | $-\mu$ -h |

| PB 2 | Charge | Mass | Rotation Sense | Spins |
|---|---|---|---|---|
| | - | g | L | $\mu$ -h |
| | - | g | R | $-\mu$ h |
| | 0 | g | 0 | 0 0 . |

The rest mass g, as Positivum, determines the externally positive gravitation in calculation after eq. (2.7,1). If we had firstly moved two contrary charges at the same masses, so we had worked the compensation of charges and of the electromagnetic momenta. Gravitomagnetic relations remain added to the same rotation sense and to 2h:

| PB 1 | Charge | Mass | Rotation Sense | Spins |
|---|---|---|---|---|
| | + | g | R | μ +h |
| | - | g | R | -μ +h . |

Consequently, to complete compensation, we need the e. m. and the g. m. features of the quadrupole (now circle with 2L and -2h). Here the masses $m_1$ to $m_4$ has to be the **same** at the four charge carrier. The spatial order of all the further parity orbit pairs forms a equilibrium of e. m. space quantizing. It is essential that also in an electrogravitational system, the gravitomagnetic behavior is adjusting itself. In this respect, electrically equal angular momenta form a cosm sentence only under the condition that a second parity is forming the gravitational quadrupole (see section 2.13.). Each mechanic movement of a gravitational substance means the formation of a gravitational secondary spin at the same event. Our principles of the wavequanta are the following:

q-spin: antiparallel, antisymmetric function, dipole-like.

g-spin: parallel, symmetric function, quadrupole-like.

The q-spin and the **g-spin** must not be equated! This means: there is no mandatory automatism, which could be caused with the electromechanic parallelism (see section 3.2.1.).

## 2.8. Modified Schwarzschild's Solution - the World Formula

Theses:

> Schwarzschild's solution (Schwarzschild, 1916) would draw a picture of the so-called "Black Hole" and its external and internal relations. A general community with the particles cannot be recognized on it.

Antitheses:

> The "Black Hole" of this above called conception will be proved as an incomplete interpretation of Schwarzschild's solution, which is more a universal solution of the unity of all the fields also uniting cosms and wavequantum relations to each other.

This way we find an image of a system, which shows to the present physics calculating on divergences of infiniteness the limits of universe - a total finiteness in space and time!

The **velocity** was chosen by the man and made to the thing of description of the **movement state of matter**. He gave it the expression in the features of the quotients of way and time.

If an observer wants to express mathematically that an observed mass is moving itself more slowly than he himself does, then he tries to make a velocity vector **v** of it with comparison measurements of the own way and the own time. In the course of this necessity, the human observer makes a fundamental mistake: he tends to see way and time separated, although they describe the movement together. If he goes on at this separation way, he lands in fiasco as today.

> In vacuum, a moving object cannot change its movement state if the observer is dividing apart his relations of ways and times according to special relativity! Why is this thought supported nevertheless?

The chaotically relativistic observer starts from the generally real Lorentz transformation, which shall give the following cinematic consequences:

1. Relativity of simultaneity (no simultaneity at differently moved systems)
2. Length contraction
3. Time dilation
4. Einstein's addition theorem of the velocities. (/Q 15/, page 157)

Why does one commit to length contraction and time dilation there in such a way? Why does he not agree in length dilation and time contraction or on length dilation and time dilation or on length contraction and time contraction, if only the reference systems had to be exchanged making a new pair of such categories? Nobody knows what pairs have come together under which conditions! These problems are connected with a spacetime concept, which only can represent the result of curved way lines existing there. Therefore, the question of space is uncoupled from the time over improper Lorentz transformation and reduced to regular reflections (space-time-reflection, space reflection, time reflection), because real reflections are unreal in this matter. What real things will come out from such unreal constructions?

Researching the specially real Lorentz transformation, one finds that it is the only operation that corresponds to the origin of movement forming a spacetime by observing there only the waytime coordinate $x(t_x)$ and leaving unchanged those coordinates of $y(t_y)$, $z(t_z)$. Before converting into spatial relations, it shows best by generally real Lorentz transformation that way x and time $t_x$ will be together dilated at the same event. In this feature, one looked far away into future, because a curved space with spherical symmetry would be rather described by a single polar coordinate of waytime r, t. Using polar coordinates, all assumptions of dimensions shrink together onto one **single dimension** – to the **waytime** or to the **movement**. That's all. **One needs a world ether of this cohesion. We found it in vacuum, but without any ether wind, at all.**

Following equations are valid with relative velocity in direction of x-axis equivalently to $x' = c_v \times t_x'$ :

$$x' = (x - v \times t_x) / (1 - v^2 / c_v^2)^{1/2},$$

$$t_x' = [t_x - (v \times x / c_v^2)] / (1 - v^2 / c_v^2)^{1/2},$$

$$y' = y, \quad z' = z \; . \quad (/Q\ 15/, \text{page } 157)$$

The Lorentz transformation is identical with a wave length $x' = \lambda'$ or a period time of wave of $t_x' = \tau'$ under the equivalence condition with (1.1,8) or (1.1,6).

Giving our universal solution of matter as an oscillation, that polar coordinate is nothing else than the drawing of a part of oscillation length $\lambda$ - this is the amplitude R - or of a part of period time $\tau$ - this is the amplitude time t. Exactly this hypotheses is supported by our solution of General Relativity Theory. So the way and the time result from the **movement of a single coordinate**: there is something oscillating, and just we have way and time. All the intrinsic waytimes are vibrating in a building, which is becoming a spherical space – similar to a spherical wave. And now, we have space and time (for example $\Psi$)! The spacetime is the result of a multiple number of waytimes in the form of areas (Is then $\Psi$ still primary or rather a function of area?). It always signs a real material state of way and time. Above it, an ideal space and its ideal time is existing – that vacuum. This means: there's no calculating valid, which would count the way and the time in steps, but there is an eternal mobility to the limit of vacuum light velocity.

If there wasn't any matter moved in vacuum, one couldn't speak about real material vacuum or of a real space. Only the real electrogravitational charges coming into the vacuum change its quality.

At the above called cinematic consequences and length contraction, one changes the observer's point of view negatively into the other reference system, made so by present opinion. Respectively the time dilation, one lets the point of view as it was.

We could agree, if the observer's point of view wouldn't be changed or mistaken arbitrarily. Just this fault has to be found at the present interpretation of Schwarzschild's solution of the General Relativity Theory. Because it takes the time contraction to an interlocking, which can never be right seen

spacetime-likely by ways and times as a unit of the same categories with the way dilation. In contradiction, one believes today that the variable radius r is the same size in all the four expressions of the terms of the main equation of Schwarzschild's solution.

Because of the assumption with the above called time dilation and way contraction, a moved body would dilate its time grid and reduce its metrical measurement in the same event (that's even right, but the question remains at this: what for a measurement is it?), this theses has come into the General Relativity Theory without special knowledge of particles as microcosms. Points of view are really mixed up today. Just the questions after the movement state of macroscopic aren't enough for an explanation. One has to answer axiomatically:

> Bodies have to be seen as particles or cosms, which really represent elementary CLOCKS!

Then they have to correspond two relativistic phenomena:

1. In waytime direction $\boldsymbol{\lambda = c\tau}$ relatively to the resting vacuum, they dilate their intrinsic waytime in the shape of oscillation length $\lambda_{ov} = c_v\tau_{ov}$ and their intrinsic cosmic oscillation time $\lambda_{ov}$, $\tau_{ov}$ with progressive velocity $v_v$ to vacuum light velocity $c_v$ on the value of $\lambda' = c_v\tau'$ or $\lambda_o' \equiv \lambda_B = c_v\tau_o'$. Consequently, the period time of an elementary cosm $\tau_{ov(EK)}$ diverges to the period time of its receptacle cosm $\tau_{o(GK)}$ on the value of $\tau_{oQ}' \equiv \tau_B$. This result is valid for the observer moved along the system and, therefore, it is also generally valid relatively to the receptacle cosm. The reversed state is valid as soon as a resting observer would try to identify this state. At the indication, he switches off the circumstances of the past movement form! The following thinking results come from Hamilton's equation.

We consequently find **the waytime dilation as well as the time dilation, too!** The isolated clock is oscillating more slowly and so its period time $\tau_o$ and its oscillation length $\lambda_o$ are reduced! And this means: the directions x, y, z and their times $t_x$, $t_y$, $t_z$ at first are completely unimportant, because the oscillation is determined only by one single coordinate of movement – by the waytime: oscillation length and period time as unity!

> The result follows: The isolated oscillation of an escaping cosm will be dilated with higher vacuum velocity. This means: the external rest energy of a cosm $E_{Aov}$ decreases in divergence to zero, because the oscillation sequence became more slowly (frequency to zero). One reaches the amplitude of this cosm more slowly by which the period time is relatively larger to the resting observer. The cosm needs less internal energy. It passes it by radiation.

2. Vertically on the waytime direction, the stable electrogravitational particle (cosms) gets their orbital angular momentum $I_B$ developed by vacuum velocity $v_v$. This angular momentum of the orbit has a waytime-like curvature; therefore, it is an angular momentum like every momentum multiplied with the objective radius. According to De Broglie, it means the potential of an intrinsic angular momentum $I_B$, which difference is working at retardation effect of vacuum velocity: the more the velocity as an orbit velocity $v_v$ increases to vacuum light velocity c, the more the wavequantum radius (wave quantum amplitude $R_w$), ready for a deceleration, or the more the wavequantum length $\lambda_w$ (acc. to De Broglie's "matter wave length") diverge to zero. Just like this behavior, the wavequantum period time $\tau_w$ is reduced (the reasons we explain in the section 2.11. later). This means: **way <u>and</u> time will be shortened together.** From this cohesion, the wave energy potency $E_w$ is diverging to infinity.

> Result is that the external wave length $\lambda$ of the potent oscillation, which is connected with the electrogravitational cosm (according to the General Relativity Theory, it is a cosm of both features of matter) as a wavequantum, will be shortened.

Absolute positions shown in 1. and 2. are working relatively between two moved observers to the vacuum!

These two operations may not be mixed up with each other arbitrarily. One cannot divide the waytime dilation of one muon from the Earth's ionosphere, which has reached the Earth's surface before its decay in thank to relativistic velocity, through the shortened wave period time, and then one cannot calculate a meaningful velocity (may be warp speed)! Only the way dilation divided by time dilation of

the intrinsic oscillation of the muon cosm yields the relativistic velocity of muon as the division of wave length and wave period time does it. Who moves this to the head cannot calculate anything sensibly. Stop! Just from these thinking, we see what Einstein wanted to say us with the shortening of a relativistic bar: this bar consists of a lot of “bodies” in the shape of microcosms, which are strung to each other like a chain. Each microcosmic center of gravity must diverge to the waytime of its receptacle universe with increasing velocity and with increasing waytime dilation. They only can do this, if they all come closer to their waytime points to become united in that divergence. Consequently, the distances of the centers of gravity of the microcosms must be shortened. This way, the exemplary bar shorts itself!

That kind of contraction has a different cause as the kind of observation of a single spacetime! The cosm theory in form of General Relativity Theory of Einstein speaks about single cosms! Why should Schwarzschild’s solution tell us anything about a bar and its chained multiple number of microcosms in the shape of compact bodies? Haven't we made clear that the theme here is the quality of a cosm in the form of a CLOCK, and that it’s not the collection of clocks? The unusual features of a clock-collection don’t have to be set under a hat differently than in its completeness in which they are forming a receptacle cosm – the receptacle clock.

In the mistaken interpretation of Schwarzschild’s metrics, the solution was prevented from unity of “Quantum Mechanics". Because such a dividing out of each other of way (distance) and time relations over the terms 1 and 3 of Schwarzschild’s solution still remained full of confusion, so at the so-called Black Holes. It was leading to speculative explanations. But we go another way.

Firstly, we show Schwarzschild’s metrics in the present notation but just in compatible symbols to our theory:

$$ds^2 = \frac{dr^2}{1-2R_o/r} + r^2 (d\phi_1^2 + \sin^2\phi_1 \times d\phi_2^2) - (1 - 2R_o/r) \times c^2 \times dt^2 \qquad (2.8,1)$$

term 0 = term 1 + term 2 - term 3,

with ds as line element,

r as metric coordinate,

$r_o = 2R_o$ as integration constant for a “gravitation radius" (event horizon $r_o$), - it’s a electrogravitation radius - (2.8,2)

$\phi_1$ as spherical coordinate $(0 \le \phi_1 \le \pi)$ and

$\phi_2$ as spherical coordinate $(0 \le \phi_2 \le 2\pi)$. (/Q 15/, page 102; (10,19))

Ideal electrogravitation radius has the value of:

$$r_o = G_v \times 2M_o/c^2 . \qquad \text{(/Q 10/, page 7)} \qquad (2.8,3)$$

In these cases, it is idealized without any distinction into its divergent form $\mathbf{r_v \rightarrow r_o}$ and its convergent form $\mathbf{r_o}$. That new solution is confirmed by Friedman solutions because of open, closed (in divergence) and isolated cosms (in convergence).

The mass density $\mu_F$ of the theoretical formation of such a state of ideal Black Hole is the following:

$$\mu_F = M_o/V_F \quad \text{with} \quad V_F = 4 \times r_o^3/3 . \qquad (2.8,4)$$

It is only an external observation feature that does not consider the further compression of mass below the horizon. In section 3.2.3 on page 460, we have explained the oscillating quantum of which the pre-

cosm is really becoming to the state of a cosm, if the density has almost increased the eightfold of the above called mass density $\mu_F$ to $\mu_o$.

The electrogravitation radius $r_o$ as convergence radius is objectively given as absolutum at the stable particles. From it, nothing can escape from itself. It is an isolated system, and it is marked by an external falling or an escape velocity of

$$v_{v,max}^2 = c^2 = G_v \times 2M_o / r_o \; . \qquad (2.8,5)$$

Special (SRT) or General Relativity Theory (GRT) gave correction factors $W_{SRT}$ and $W_{GRT}$ of waytime and its following magnitudes:

$$W_{SRT} = (1 - v_v^2 / c_v^2)^{½} \quad , \quad W_{GRT} = (1 - r_o / r_v)^{½} \quad . \qquad (2.8,6)$$

Radius $r_v$ cannot reach to $r_o$ in relativistic sense, if processes are working from the outside trying to form a state of Black Hole, because every physical magnitude goes to infinity. So the radius $r_v$ only reaches the maximum of divergence horizon $\mathbf{r_d > r_o}$. This means that the mass has the chance to complete the state of “Black Hole". Because it cannot adjust this wanted state from the outside ideally, this status remains unstable. No “Black Hole” was built after collapse, which would be permanent. It rather is a **Black-White Hole**, which formation already carries the potency of self-destruction into the “White Hole". For divergent relations it is valid:

$$v_d^2 = 2G_v \times m_o / r_d \; , \qquad v_d < c \; . \qquad (2.8,7)$$

Our theory uses the factor $W_l$. Like the velocity $v_v$ only can reach divergent velocity $v_d$ next to $c_v$, it is only possible that the collapsing radius $r_v$ reaches the divergent horizon $r_d$ and never the horizon $r_o$:

$$W_l = (1 - r_d / r_v)^{½} \; . \qquad (2.8,8)$$

Consequently, from our construction the divergence of material movement to the limit of vacuum light velocity $v_v \rightarrow c_v$ and to the limit of maximum mass concentration $r_v \rightarrow r_o$ are also comparable directly. In this respect, between both theories, a visible homogeneity is produced again.

Special and General Relativity Theory in the form of our Ideal Oscillator Theory (IOT) lead to comparison of both terms under the roots:

$$v_r^2 / c_v^2 = r_d / r_v \quad . \qquad (2.8,9)$$

The forced equivalence must be limited as we use the coefficient r of velocity! Under which conditions are the terms of the same amounts? The gravitational state of external matter on radius r corresponds to that state, which would be equivalent to a movement with $v_r$. Actually, this body **does not** really move itself with $v_r$!

It has to be noticed that this velocity $v_r$ may not be seen as the cause of Doppler’s effect. It corresponds neither to a fall or escape velocity nor to a rotation velocity of a body. It only represents the velocity analogon to the **gravitational red or blue shift**. This means: there would be such an effect looking like gravitationally caused if there would have run an event developed by velocity.

**Gravitational red shift $z_g$ of a star spectrum can be calculated now to an equivalent apparent escape velocity +v of the character $v_v$ with the equation (1.2,5) without knowledge of causes:**

$$\mathbf{v_{vF} = c_v \, [(z^2 + 2z) / (z^2 + 2z + 2)] \; .}$$

This moment, the Doppler effect is mixed up with the gravitational effect. Therefore, one gets an apparent Doppler-effect with the apparent velocity +v, however, which is mistaken calculated smaller than the gravitational velocity $v_r$ at the radius r.

Finally, the matter borders are only plausibly explained by movement functions and by the finish of this function in receptacle cosm, but by velocity relations on the one hand and amplitude relations on the other hand. For example, a star had to rotate with $v_v = c_v$ to be changed convergently into a stable Black Bole. Is this actually possible? Let's look at the conditions.

According to De Broglie's eq. (2.4,28), vacuum velocity $v_v$ expects a wavequantum that is here explained as force of rotation of particles. There is a point of increasing rotation velocity $v_u$ at perimeter to vacuum light velocity c at a body almost resting in vacuum. Instead of moving faster in universe, this body is transferring the received energy into its rotation, what is impossible because of the relativistically infinite energy increase. In this way, it therefore only can be formed a divergent Black Hole horizon $r_d$ with divergence velocity $v_d$.

Never a central fall (cold collapse) could concentrate the mass to the isolated and closed hypothetical Black Hole under finite energy expenditure. This means that in the real concentration of energy of given stable particles, only such a state can be formed that diverges to the Black Hole state. A non-convergently closed cosm, which is formed temporarily in its being "black", is able to expand once more. This feature will be hot.

Then the divergent gravitation horizon $r_d$ ($r \to r_o$) separates the external states from the internal. Inside now an intrinsic and almost completely curved metric exists. It would be closed ideally if the Black-White Hole (BWH or a protocosm) would be made stable with $r_o$.

There are $M_o$ as field-producing mass below the horizon or the limit $r_d$ or $r_o$ and $G_v$ as the gravitation constant of measurement

$$G_v = 6.674 \times 10^{-11}\ Nm^2/kg^2 \qquad (/Q\ 7/, \text{page } 16)$$

in the possible calculation to Einstein's gravitational constant

$$G_E = 8\pi \times G_v / c_v^4 \qquad (/Q\ 13/, (31)) \qquad (2.8,10)$$

$$G_E = 2.076554 \times 10^{-43}\ N^{-1} \quad \text{and} \quad \pi = 3.1415927\ .$$

Relatively, the isolated metric recognized conclusion was made that is not necessary any further processing here.

The constant $2R_o$ is the abstract size equivalent of the isolated mass $2M_o$ determining the gravitation field. That mass $M_o$ is directly proportional to the ideal coordinate volume $V_o$ of a spherical symmetry with $R_o$.

Watching a collapsing system from $r > r_o$ with the collapsing external mass m, only the external observer has the problem to take into account relativistic magnitudes so that he is able to correct his picture of the world!

A decisive answer to the question, if a change of the body is still possible before reaching the divergence horizon $r_d$, the following well-known solution of General Relativity Theory is given:

Theoretically, starting from an infinite distance $r \to \infty$ continued to the distance $r_k$ (the **collapse horizon**) and to the gravitational horizon $r_o$, the mass m is stable; the pressure increases finitely to the inside. The condition is:

$$r_o / r_k = 2R_o / r_k < {}^8/_9 = 0,\overline{88} \qquad (\text{cf. } /Q\ 15/, \text{page } 215, (23,18))$$

$$r_k > 1.125 \times r_o\ . \qquad (2.8,11)$$

This divergence horizon $r_d$ is defined as part of collapse horizon $r_k$ for avoidance of inequality:

$$r_k \equiv 1.125\ r_d \quad . \tag{2.8,12}$$

Below the collapse horizon $r_k$, some stability doesn't exist anymore. It decides about falling into a metric that is related on the inside now – that coordinate system already curves reaching the collapse radius, so that the movement magnitudes have their reference to the inside. A so-called "gravitational collapse" is following mandatorily. The state of protocosm isn't yet reached. We define:

$$r_d \leq r_{BWH} < r_k \quad . \tag{2.8,13}$$

$$2R_{o(PK)} = r_d \quad , \tag{2.8,14}$$

$$R_{o(PK)} = R_d \quad . \tag{2.8,15}$$

Then between the divergence horizon $r_d$ and the collapse horizon $r_k$ is a transitional sphere of Black-White Hole $r_{BWH}$. If the collapsing mass $M_o$ hasn't yet overcome the contraction area to the protocosm amplitude $R_{o(PK)}$ it is working itself to the outside because of the coordinate system, which isn't yet closed completely. We have got a Black-White Hole for this time, which reaches up to about $1.125 \times \frac{1}{4}\tau_{o(PK)}$. Only then, if the mass $M_o$ is decreased below the protocosm amplitude $R_{o(PK)}$ and if it has gone over half an oscillation analogously the stable cosm over $\frac{1}{2}\tau_{o(PK)}$, the mass $M_{o(PK)}$ is neglected to the external oscillation mass $m_{o(PK)}$. Now we have reached the state of **protocosm**. The mass $M_{o(PK)}$ is restructured in subprotocosmic hierarchies and packed after the sine square. To R = 0, only the external sum of masses of subprotocosm masses $m_{o(SPK)}$ is given. As soon as the elongated mass $M_{o(PK)}$ is reached again and it is rising up above the protocosm amplitude $R_{o(PK)}$, the oscillation mass $m_{o(PK)}$ will be neglected. This protocosm is really open although its elements haven't already appeared at the outside of its collapse radius $r_k$. This means: radiation and exported subprotocosms have to go a further way, which takes the time of about $1.125 \times \frac{1}{4}\tau_{o(PK)}$ (see illustration 2.8;1). In the year 2020, I draw the conclusion to a Divergent Sphere (DS), where protocosm momentum-pairs are generated. Its area seems to be located between the radii $r_k$ and $r_d$.

While the event of collapse, the internal mass is falling to the real amplitude of $R_{o(PK)} = \frac{1}{2}r_{o(PK)}$ during the first oscillation function. After reaching the amplitude $R_{o(PK)}$, the intrinsic oscillation of the protocosm is working determining the mass $m_{o(PK)}$. If in the course or elongation back to the radius $R_{o(PK)}$, no radiation would come from the outside to support the internal radiation cosms closing themselves, the anticollapse is starting by turning around of quarter oscillation to the outside. If the accelerating e. m. force is too small, for example, if too less antimatter was stored, only less internal "light" energy will be coming out. The mass collapses once more but into a relatively colder state, but now lighter unpacked from inner magnitudes but heavier of external magnitudes (compare the qualities of pulsars in section 4.10.3.).

At the transition of collapse or anticollapse acc. to (2.8,12) the relevant velocity $v_k$ is always valid under the condition of a falling or a rising and externally measurable mass $m_o$:

$$v_k = c_v /1.125^{1/2} = c_v /1.06066 \tag{2.8,16}$$

$$v_k = 2.82647 \times 10^8 \text{ m /s.}$$

That velocity is the highest fall velocity, which is possible at a celestial body, for example at a visible star, before it is really escaping into the collapse supported by radiation: 94.28% of light velocity. This value corresponds to an absolute wave length shift of the factor 3 or of a relative red shift of **2**. However, this state under the radius $r_k$ is already comparable with the status of an unstable Black-White Hole. Nothing can come out until isolated processes let the system start for anticollapse – for outburst of the closed matter after which the system is changing to the white-hole state. Below $r_k$, the red shift is higher than 2.

… If a star were in an area where all stars had a red shift of waytime of 1.5, for example, equation (1.2,24) leads into a total shift after changing from frequency to wave length:

$$\lambda\text{“} = 1.5 \times (\text{max. } 2)\ \lambda_o = \text{max. } 3\ \lambda_o\ . \qquad (2.8{,}17)$$

Pulsars are vibrating protocosm generators from which their red shift really could divergently increase to infinity. Additionally, the mass rotates because of its increasing angular momentum to infinity analogously to the fall. This relation gives the reason suspecting an enormous perimeter velocity, because one starts his measurement from the pulse periods of the pulsar and his suspected mass calculating its possible radius. Never this assumption was thought out over the neutron level today. We still come below the collapse horizon $r_k$. Therefore, we can think our perimeter velocity as smaller than before, made from bodies, which come from a denser matter than atom nuclei consist. Gravitational red shift is essential.

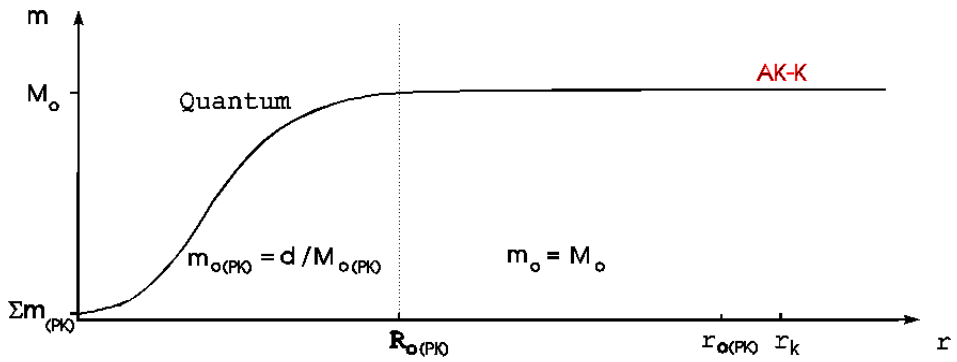
Using eq. (2.8,3), the collapse radius or the anticollapse radius both can be calculated:

$$r_k = 2\ G\ m_o\ /v_k^2 \quad (m_o = M_{o(PK)}). \qquad (2.8{,}18)$$

At this positions, the external mass that just was working as $m_o$ changes into potential collapse mass $M_{o(PK)}$ (like $M_o$). Only then below $R_d = R_{o(PK)}$, it reaches a temporarily isolated movement function that is externally reflecting only the mass $m_{o(PK)}$ of (2.10,23). Relatively to divergence velocity is valid:

$$R_d = G\ M_{o(PK)}\ /v_d^2\ . \qquad (2.8{,}19)$$

Illustration 2.8;1: The Change of External Mass $M_o$ to the Quantum with the Mass $m_{o(PK)}$




From this structure follows:

> The divergence does not allow some convergent locking of “Black Hole". This body itself remains an open cosm essentially (cf. section 3.2.3, page 460.), which will follow the law of inverse of collapse K - of **anticollapse AK (signs are from German)**!

In this respect, for an external measurement of general relativity correction, never the convergence horizon $r_o$ is valid but only the collapse radius $r_k$ at which the curvature is starting to the inside:

$$W_{IOT} = (1 - r_k\ /r_v)^{½}\ . \qquad (2.8{,}20)$$

Each relativistic phenomenon has to be corrected onto the root of IOT! Under this condition, always a red shift of gravitational feature of $z_g$ absolutely comes to stationary vacuum and in relations to the intrinsic shift if the Black-White Hole has opened itself by anticollapse:

$0 < z_g < 2$ . (cf. /Q 15/, page 216)

This means basically:

In relation to the observer resting in stationary vacuum, collapsing systems have a red shift of 2 just because of the gravitational effect. The same measurement is valid for anticollapsing systems during their opening phase. In the phase below $r_k$, red shift is increased to infinity next to $r_d$.

The results of General Relativity Theory are completely recognized here, and they do not require any renewed derivation:

- Dilation of installation time and contraction of its
  installation way of a determined spacetime in
  gravitation field of an observer there in relations
  to a second observer and relatively to the absolute vacuum
  (installation velocity made from both is diverging to zero),
- Perihelion turn and quasi-elliptic movement of planets,
- Light diversion and its delay increasing,
- Frequency shift of wavequanta, for example:
  Red or blue shift of photons as quadratic
  Doppler effect or caused gravitationally, and spectral shift effect.

A convergent spacetime body would be certainly a pre-state of “Black Hole", which would never have an anticollapse itself. It hasn’t the predicted quality after which its locked isolated movement in the shape of its isolated mass M would be working to the outside as the same mass m in the same processing: internal and external mass are coupled by eq. (2.7,1). If such a stable Black Hole should get a mass or an energy from the outside, it will become unstable – it therefore becomes a divergent function concerning the isolated processing of the mass or energy coming from outside. At an anticollapse, the destabilized microcosm throws out the same mass or energy got before, arriving an even balance and stability.

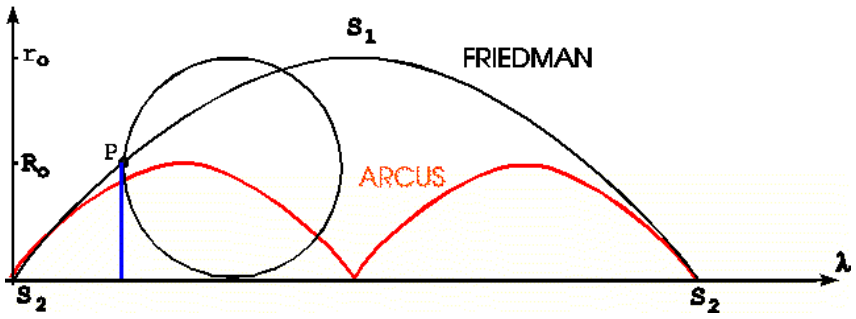
Following axioms are standing in opposition to the present opinion making impossible finding a unity of fields, we consequently use to prove like one can cause convincing this unity of fields mathematically: We better say to the so-called “Black Hole"  BLACK-WHITE HOLE.

If it is an almost open system that is living just of divergent illusion to be a cosm for a short time, so it is called PROTOCOSM. It is only diverging to the state of isolation (ideally locked), and it is basically able to pack in matter (condensation) to an isolated fall movement for a short time. After this, it can unpack (evaporation) this state by anticollapse (strive apart, for example collapse shortened on $^1/_{10}$). Finally, the unpacked matter sets free stable particles that are cosms. Consequently, we mean to call its pre-product well with the new name “protocosm”.

After this event of annihilation while evaporation, an e. m. and g. m. wave is running into the outside space that will be come back later to restore this protocosm. The spherical wave of electromagnetic and gravitomagnetic radiations above all the mass cosm center, we call a radiation cosm. It has got name “PK-magon” according to electromagnetic feature.

In the sense of an IDEAL OSCILLATOR, the ideal non-stationary Black-White Hole is that isolated system of the name COSMOS! The cosm(os) is stable and it forms consequently the base of stable particles. There we find a constant and limited number of stable cosms. In opposition to this, the existence of unstable Black-White Holes is given because of the interactions of matter in a larger and almost incalculably but finished variety.

Illustration 2.8;2: Cosmos Oscillation in Comparison to Friedman's Cosm




Because we assert that all stable particles – like the universe itself as a total stable particle – are IDEAL OSCILLATORS, consequently, they are the GIVERS of basic frequencies from which the wavequantum frequencies are derived secondarily in relative movement. In this cohesion, we distinguish primordial quanta into **cosms** and **wavequanta**.

Cosms are primacies of oscillation. They are the real space times. Their compensated states from particles and antiparticles form the resting vacuum. From these phenomena, we get an absolutely stable structure with absolutely isolated stability balance. Vacuum cosms don't dilate and don't contract.

Therefore, the stationary vacuum gives the oscillation measurement in the shape of an absolute clock.

What came into the stable cosms must come out again in the same measurement. From this process, we have the analogy to the chosen name: BLACK-WHITE HOLE.

An unstable particle exists on base of programming of a stable receptacle cosm, which can be destabilized by one or more reasons following here:

1. From the outside, energies were transferred to isolated subparticles (isolated protocosms). The internal particles have a stronger dilation now. Less internal mass M is becoming free and participating in death and rebirth, more external mass m is measurable.

2. Additionally to the first case, in its isolated sphere, protocosm pairs (protocosms and antiprotocosms) were formed by enough energy coming in from the outside.

3. Touching protocosms of this cosm and of the cosm coming in, an exchange has happened that generates two different unstable cosms.

Unstable particles we call COSM SEED. This name is caused by the change and the repulsion of isolated energies or also of annihilation energies of isolated protocosm pairs. Because the energy, which is running to the outside, produces protocosm pairs at the inside before it is out, it produces external cosm pairs with enough number and density. Pair masses and pair energies form a zero balance to the horizon of a particle. Consequently, they can overcome a Black Hole without help. Particle pairs annihilate in the outside or they take part at the exchange of the above called third case. This way one gets back the identically stable cosms in the circle of newly formed cosm pairs or in the connection with electrogravitational energy. The third cause is only compensated, if the exchange is made reverse ("weak interaction" or rare effect, see sections 4.7.2. and 4.7.3.).

Cosm seeds represent a changing state between open and close. The concept of the **closed system** seems to be correct after which an energy exchange is possible over the vacuum sphere $\Sigma_o = \Sigma$ but no making open of the internal particles and then no open exchange of masses but only a covered and isolated mass exchange over pairs of protocosms and energies, which is valid according to the negation eq. (2.7,1) and (2.7,12).

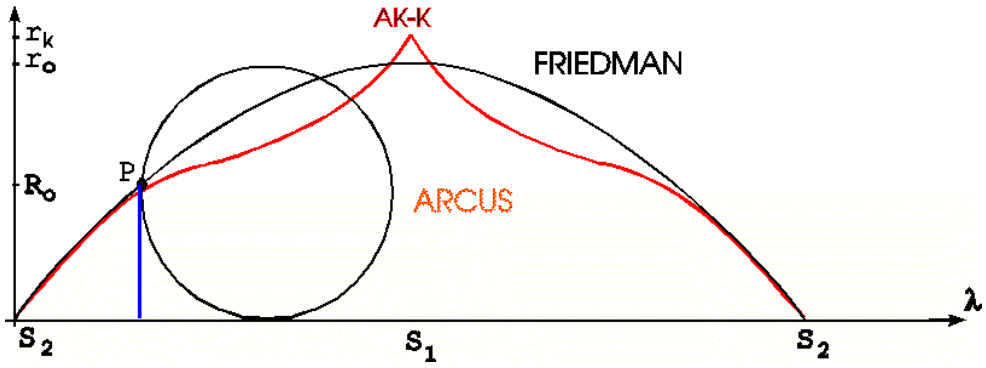
So-called protocosms pack the divergence $R_{o(PK)}$ to the cosm amplitude $R_o$ for one period. Then they continue the oscillation for one quarter period to the gravity center R = 0. Consequently, the elongation

runs up to $R_{o(PK)}$. From there, the protocosm is immediately unpacking within a further quarter period extended with about $^{9}/_{8}$ if it gets no external support by energy. While half a period, those events are running: contraction of the formed BWH to the formation of protocosm and contractive elongation to zero; then expansive elongation to the protocosm amplitude, negation of protocosm into a White Hole and expansion onto the collapse horizon $r_k$. After this events, the anticollapse is externally measurable.

The temporary state of protocosm represents the electrogravitational immediate being of resting mass $m_{o(PK)}$ and of electrostatic charge of protocosm $x \times e_o$. After giving up its existence during anticollapse, it goes over into the immediate state of electrogravitational radiation cosm in which center remains a certain germ of resting ordinary coino-mass. The radiation cosm is filled of photons and fallons. Coupled at the total momentum mass of the receptacle cosm, all the radiation cosms will be forced to come back systematically. They restore the pair masses of the early protocosm in their concentrated wave energy by which the change of state to the protocosm has come back again.
We see here the oscillation of the loading up and down of resting mass $m_o$ and of resting charge $e_o$ and of wave mass (fallon, $m_w$) and wave charge (photon, $e_w$): this is the universal oscillating circuit!

If the collections of cosm seeds, the limit value of mass $M_o$ reach density and energy concentrations, which fall below the collapse horizon $r_k$, they temporarily form the following states in their totality: incomplete Black Hole, Protocosm and incomplete White Hole. Cosm seeds in measurement of collapse mass to the Black Hole gives protocosms (short divergent phase of trading margin).

Illustration 2.8;3: Protocosm Oscillation in Comparison to Friedman's Cosm




While the state of anticollapse of protocosms, the characteristic White Hole is working (short phase of expulsion or evaporation). The radius $R_{o(PK)}$ will be exceeded to the collapse radius $r_k$ has been overcome.

The event of formation of protocosms, we call PACKING (collapse K, condensation), its reversal is explained by UNPACKING (anticollapse AK, evaporation). Mass is compressed below the collapse radius $r_k$, and it is falling to its amplitude $R_{o(PK)}$. Following the "one-day cosm" – the protocosm – oscillates only for one times. If it should get further support by radiations just opening itself, then it can turn around from any arbitrary expansion magnitude to the contraction. In this respect, this protocosmic state even could be kept oscillating like a cosm, if the necessary radiation falls in at protocosm amplitude status. This applies to first-rate protocosms in the first cosm sentence of stable receptacle cosms. A protocosm has got its largest expansion in its receptacle cosm. There it must expand as far to the radiations of the other protocosms yield the closed radiation density and till their way turns around. Then they reinstall their protocosms again. Between the anticollapse and the collapse, which we have signed with the symbol AK-K in illustration 2.8;3, an individual intermediate time is given then – the **time of idleness** $\tau_b$. Later I called it a **strolling time period**.

We distinguish into electric cosms (electric elementary charges), electrogravitational cosms (for example: electrons, positrons, protons, antiprotons), gravitational cosms (neutrinos in different variants, elementary vacuum cosms) and magnetic cosm pairs (radiation cosms of electromagnetic and gravitomagnetic origin).

If electrogravitational charges are moved relatively to each other, they mediate a potent wave quality to their relatively localized observer: the electrogravitational WAVEQUANTA (magnets). This knowledge of relations is connected to the objective existence of stationary vacuum.

Electrogravitational COSMS and their ANTICOSMS really exist. Their compensation leads to the arise of a stationary body – to the **vacuum body.**

Philosophically, we see cosms as carrier of ideal life. They live eternally representing the chain of death and rebirth by their oscillation process. At the inside, protocosms carry on this life working together with the gammaprotocosms, because they are these things, which lead together restructured systems to a new structure of life during the isolated life processes and which set free again this kind of primary life by anticollapse. Life here is just only signed with self-organization in the feature of including restructures and of forming and of serving structures. While the substructured life is living, the entropy is increasing; during its restoring in protocosm the entropy will be decreased! This behavior causes the reversible thermodynamics.

Life only comes from life. Never it resulted from anything, but it has been **transformed** from one of the first phenomena to one of the last phenomena of universal life. If life forms die rubble and garbage remain – chaotically appearing feature of matter: nebula, lifeless planets, comets, planetoids, the interior of the Earth, satellites for example. This **sedimentation of death** is running causally and causally branched, too, then dialectically in a determined process.

It isn't proved but just defined that everything appearing lifeless would not live. Because the life is transformed down from the heat of ten billion Kelvin to the cold in the proximity of zero Kelvin over stages of phenomena while anticollapse of protocosms. Only when programmed and abrupt changes of qualities don't let a chance to the transformation program in its given branching within this transformation chain, universal life is dying out on this body finally and totally. Each body has got its time and its life! Venus only lived for a short time because it was too hot. Mars lived shortly because it became too cold, too early. Two hills of garbage in our proximity show us our destiny while we are living as last ones on our garbage heap till our time has gone fortunately later.

The concept of arising from itself, for example, the arising of life by accident or the similar arise of planets by accidental contraction here is decidedly declined, because it reminds of the concept of the abiogenesis in fatal way, which contents was disproved a long time ago! The research for causes and origins till now was leading to the assumption of the "Big Bang". That explosive start of universe hasn't either been there, but instead of this, there was a complex formation of universe from a programmed and most complicated motion structure in which everything what should live in this matter was given in its divergent packing. So the hot total origin of the universe also failed, because there is not some simultaneity. In this respect, all arbitrary origins are also untenable at which the man stopped spiritually like his primeval nebulum, primeval soup or primeval protein.

This way, the universe found its formation by given matter and ghost (sense and laws of soul or spirit) from a common thing – from the anything moved in its outrageously various programming. That means, the matter as well as the ghost and so the ghost of man, too, are made from the same non-material but pre-material ideal substance by its movement: the matter is totally programmed!

Theses:

> Because the mathematical set of values of the received solutions of General Relativity Theory offers infinite possibilities, one has to start out from an infinity of matter and universe.

Antitheses:

> Mathematical solutions offer possibilities, which are reflected by finite numbers of reality in the course of infinity.

Singularities are positions of a function at which this function is growing into the positive or negative state. They should be recoverable by coordinate transformations.

Mathematically, this is a pure formality. Philosophically, the formal using of singularity concept means with other words: the choice of an arbitrary coordinate system or the displacement of the given coordinate system would let such points fade to senselessness in an infinite moving.

If one continuously followed this purely mathematical formal relativism, Schwarzschild's solution could be fulfilled with infinitely many concrete solutions. Certainly, mathematics must provide the solution quantity. In reality, it is to check how many solutions are finally created by these infinite possibilities. Just this one doesn't make but one philosophizes about the purely mathematical formally well-founded infinity as if it would be a reality. However, this philosophy of solution's interpretation does not satisfy, because it has nursed the present thought of a **chaotic relativism** in frightened measure.

Therefore, we don't take some particular cover on a so-called "singularity" here anymore – it shall remain a formal problem of those scientists, who perpetuate the General Relativity Theory as mathematics out of touch with reality. We define the objectively finite number of absolute coordinates of convergent spacetimes new.

In an isolated and balanced spacetime, an intrinsic and completely curved coordinate system of real physical dimensions is given, which are derived from resting energy or resting mass and from the sum of all momentum masses at the same process. That external coordinate system of movements does not come continuously from the isolated coordinate system moving there. Therefore, a limit exists here only perceptible of external observer no matter what coordinate shift he ever takes: the maximum diameter of that spacetime, which can be taken in the course of the intrinsic movement of oscillation is an objective magnitude. In this position, we concretely speak about objectively existing limits of matter that fact, which was let open finiteness by the mathematically formal Schwarzschild's solution in the feature of singularity concept.

On the one hand, we sign the spacetime limit of a body or of a stable particle with its internal spherical radius $r_{ov} = 2R_{ov} = R_{ov1} + R_{ov2}$ ($R_{ov1}$ as inner magnitude of amplitude, without index v as dilated relative magnitude $R_{ov1}$, $R_{ov2}$ as vacuum sphere running along to the amplitude along the elongation), for example.

On the other hand, we also understand the objectively available zero point of a body as spacetime limit, for example, the gravitational or the electric center (center of gravity) of a stable particle with r = 0 (seen from the outside) or R = 0 seen from the inside.

The radius $2R_o$, we can take as world limit and the radius R = 0 is then the world center of gravity of a stable and convergent world.

The external observer wants to change the coordinate origin of his coordinate system into the apparent particle center having to be described because of the real measurement. Actually, the internal observer living in this particle only uses local inertial systems. Consequently, he cannot measure the slightest excellent middle main emphasis of his world. For him, the subjective question for the center of gravity has no sense although it exists objectively. Then he only speaks - as well-known - of the singularity knowing as well as nothing of the objectivity. This status is finished here by recognition objective limits and references in vacuum!

If a spacetime is closed according to Einstein, the plausible opinion follows telling of complete curvature of ways and times. Therefore, we assert here that we have to distinguish between isolated waytimes and external waytimes. That expediency will have to be proved at the general relativity principle. Just the curvature of an isolated spacetime works out the being of isolated mass and with it the relative being in the sense of Special Relativity Theory because of the interactions of isolated elementary cosms. Outside the inferred spacetime, there exist neither the internally measurable system of coordinate curvature nor the measurement of special relativity! This means: internal distortions of Euclidean state till the complete curvature (of cosm) only can appear during measurement procedure at the inside of spacetime.

General Relativity Principle

"The main laws of physics have the same form for two observers being in an arbitrary movement state using arbitrary coordinate systems following from each other continuously ." (/Q 12/, page 164)

Really, an external observer has his own coordinate system of different curvature relations in opposite to an isolated observer locked inside! The isolated man calculates his world limit $2R_{o(GK)}$ on his isolated mass $M_o$. The external observer just measures the external mass $m_o$ of the receptacle cosm in which the isolated observer is living, and he calculates the amount into a collapse horizon $r_k$, which is essentially smaller than the world horizon being measured from the inside! Coordinate systems of both observers curve reaching the isolation of spacetime completely but with different absolutely existing diameters of an Euclidean coordinate system even made above of both systems (uncurved, because not mass-forming or spacetime-forming – that stationary vacuum). Let's have an example with the proton. Its coordinate system reaches just to $4.2 \times 10^{-16}$ m in its radius of its horizon (two times the amplitude $R_{o(p)}$). Additionally, the universe has a horizon of about $1 \times 10^{26}$ m. The curvature of universal geodetic lines seem to be extremely small and nearly negligible. Both material coordinate systems of universe and proton determined of movements do **not** follow from each other continuously, because the proton system does not work out above its horizon of $4.2 \times 10^{-16}$ m.

> A continuity of coordinate systems only is able to construct for two common external observers or for two common internally isolated observers at least!

After this explanation, the **term 1** would be responsible of relativistic change of way dilation and time dilation of muon relatively to its isolated oscillation while the **term 3** has to be valid for way (distance) contraction and time contraction $t_w$ of the "potential wave" of the muon on its flight. From this, we see that the term 1 aims on a different waytime than the term 3 relatively to the dilation of the oscillator's vibration waytime in movement direction $r_i$. All states have the relation $r_v$ to the gravitational horizon or their movement state $v_v$. Then we sign the differences with indices (because of the length of indices we leave out the identification of vacuum). Here is the real world formula:

$$ds^2 = \frac{dr_i^2}{1-2R_k/r_v} + r_t^2 (d\phi_1^2 + \sin^2\phi_1 \times d\phi_2^2) - (1 - 2R_k/r_v) \times c^2 \times dt_w^2 \qquad (2.8{,}21)$$

In each case, one of both way steps $dr_i$ or $dr_w$ or of time steps $dt_i$ or $dt_w$ would be able to be exchanged over $dr_i = c \times dt_i$ or $dr_w = c \times dt_w$:

$$ds^2 = \frac{dr_i^2}{1 - r_k/r_v} + r_t^2 (d\phi_1^2 + \sin^2\phi_1 \times d\phi_2^2) - (1 - r_k/r_v) \times dr_w^2 \qquad (2.8{,}22)$$

In symbolic of Lorentz transformation (as the real world formula):

$$ds^2 = dr_i'^2 + r_t^2 (d\phi_1^2 + \sin^2\phi_1 \times d\phi_2^2) - dr_w'^2$$

**term 0** = term 1 + TERM 2 - term 3

| | | | |
|---|---|---|---|
| **Cosmos-function in vacuum** | = cosm-quality (relativistic) | + RECEPTACLE COSMOS-OSCILLATION | - **Wavequantum quality** (relativistic) |

The term 0 represents the real binding term, a united term, a universal term or a term that is valid in vacuum. With suppression of one or some of the four terms, one can describe such states taking out from unity that limits are determined by the other terms, one cannot notice with suppression of them.

If we suppress the terms 1 and 3, so the first context is given; in suppression of term 2 we find the second context of $ds^2$. Then we set both contexts into each other and we get the global context (dialectics).

First Dialectics of Unity

$$ds_1^2 = r_t^2 (d\phi_1^2 + \sin^2\phi_1 \times d\phi_2^2) \qquad (2.8,23)$$

$$ds_1^2 = r_t^2 \times d\phi_1^2 + r_t^2 \times \sin^2\phi_1 \times d\phi_2^2 \qquad (2.8,24)$$

term A + term B

The static value $r_t$ is the same as the amplitude of receptacle cosm $R_{o(GK)}$. In this respect, we have to distinguish this amplitude from those amplitudes of the observed elementary cosm $R_{o(EK1)}$ and from the relatively existing elementary cosm EK2 and its influence to the clock EK1 above that collapse horizon $r_{k(EK2)} = 2R_{k(EK2)}$! While EK1 and EK2 influence each other directly in the form of their external mass by eq. (2.7,1) by influence their clocks themselves, the amplitude of receptacle cosm $R_{o(GK)}$ has its own working that is separating the isolated coordinate system of all isolated clocks (elementary cosms) from the external coordinate system. Doing this, one has to imagine the crossing from a coordinate system into the other one like the change from a three-dimensional system of waytime into a different three-dimensional system, but which is connected with the complete separation of those dimensions. Therefore, we cross over a fourth waytime dimension **j** from one cosm into the hyperspace of the other receptacle cosm. Nobody needs to develop well four-dimensional theories, if we already must jump from a cosm to the other cosm over the fourth dimension j.

It is necessary to define that radius $r_t$ as follows:

$$r_t^2 \equiv j^2 R_{o(GK)}^2 ; \qquad j^2 = -1 . \qquad (2.8,25)$$

This is the **Oscillator Solution of General Relativity Theory** by specification of $ds_1^2$ to:

term A = term B = $dR_{GK}^2$;

$ds_1^2 = 2j^2 dR_{GK}^2$ = term A + term B;

from that arises the following eq. with a common phase course of cosm oscillation $\phi_1 = \phi_2 = \phi$:

$$dR_{GK}^2 = R_{o(GK)}^2 \sin^2\phi \, d\phi^2 = R_{o(GK)}^2 \, d\phi^2 \quad . \qquad (2.8,26)$$

This solution differentially describes the oscillating (vibrating) receptacle cosm.

Second Dialectics of Unity

It is given the following eq.:

$$ds_2^2 = dr_i'^2 - dr_w'^2 .$$

The term $dr_i'^2$ has to be that dilated amplitude $R_{o(EK1)}$ of elementary cosm 1 in the proximity of the elementary cosm 2:

$$dR_B^2 = dR_{o(EK1)}^2 / (1 - r_{k(EK2)}/r_v) . \qquad (2.8,27)$$

In the area of the field of elementary cosm 2, the amplitude $dr_w$ of the wavequantum will be shortened at the elementary cosm 1.

The potency of radiation of a smaller wave amplitude increases relativistically in the case of approximation; each increasing of energy of wavequantum is connected to the supply of relativistic wave or kinetic energy:

$$dR_w'^2 = dR_{w(EK1)}^2 \times (1 - r_{k(EK2)} / r_v) \; . \qquad (2.8,28)$$

From this, the second dialectics will result:

$$ds_2^2 = dR_B^2 - dR_w'^2 \; . \qquad (2.8,29)$$

We see the following relations:

| Condition: | Relation: |
|---|---|
| 1. Vacuum in rest: | |
| $v_v \to 0$ | |
| $r_v \to \infty$ | $ds_2^2 \to$ const.$_i$ and const.$_w$ = const. or 0, |
| no change of step | |
| 2. Movement to the vacuum limit: | |
| $v_v \to c_v$ | |
| $r_v \to r_{d(EK2)}$ | $ds_2^2 \to$ from const. running to $\infty$ and from const. to 0. |

The steps will become larger, but they are limited by receptacle cosm, if that stability should be kept. Otherwise, they can grow as far as they can concentrate energy for dilation in receptacle cosm. Because the imaginarily observed body with the external mass $m_{o(EK2)}$ or the particle as elementary cosm 2 with calculated collapse horizon $r_{k(EK2)}$ with eq. $r_{k(EK2)} = G_v \times m_{o(EK2)}/c^2$, even is inside of the elementary cosm 2 within its real horizon $r_{o(EK2)} = 2G_v \times M_{o(EK2)}/c^2$. The collapse horizon $r_k$ will be calculated imaginarily by its external mass $m_{o(EK2)}$, but it isn't from the real internal mass $M_{o(EK2)}$. While such an elementary cosm 1 is on its way to the apparent gravitation horizon $r_{k(EK2)}$ and hasn't still reached it, it already dives below the real vacuum sphere of elementary cosm 2 in the form of $R_{o(EK2)}$ where the isolated mass $M_{o(EK2)}$ reveals a completely other world like this: one already has left the external coordinate system before one has just even comes to the proximity of the horizon $r_k$ calculated from the outside! In this respect, every discussion is senseless about infinity relatively of approximation to some gravitation horizon $r_o$ from the outside! Even at the assumption of a compact mass, one is mistaken because it does not concentrate like a homogenous mash in higher concentrations approximately to the Black Hole anymore but in pre-quantizing. Each quantum then does not correspond to the opinion of a simple compact mass anymore.

Generally, we interpret now the result of Schwarzschild's solution like this:

> During a time step, the way is dilated from $dr_i$ to $dr_i'$, the other way $dr_w$ will be contracted to $dr_w'$. Altogether, this way step ds as Pythagorean will be developed by both changes, and they will also have a dilation here while the equation part with term 2, the receptacle cosm, remains without touch of it.
>
> The variable $\phi$ in the shape 1 and 2 lets appear the receptacle cosm independently from oscillations of elementary cosms. In addition, to the receptacle cosm a constant amplitude-like radius $r_t$ as $-R_{ov(GK)}$ is given

If the wavequantum radius $R_w$ will differentially decrease, then the wavequantum energy $E_w$ increases while the energy of cosm $E_{Aov}$ will be decreased relatively to the resting position in movement for the observer moved along into $E_{Bv}$. We distinguish into six types of ways (distances) and times (steps):

$r_i$ – movement way of elementary cosm in receptacle cosm; its amplitude shift.
Elementary cosm period time /2π: $r_i = R_{Bov} = ct_{Bov}$,
$dr_i$ – one step in the sense of elementary, non-dilated oscillator elongation dR = c dt.

$r_w$ - potential intrinsic twist way, wave amplitude shift of an elementary cosm,
wavequantum period time /2π: $r_{wv} = R_{wv} = ct_{wv}$,
$dr_w$ – one step in the sense of wavequantum elongation $dR_w = cdt_w$ or a contrary step on the rotation radius $dr_{rot}$

$r_t$ – intrinsic amplitude of receptacle cosm: $r_t = R_{ov} = ct_{ov}$,
half an electrogravitation radius ½$r_{ov}$ = amplitude $R_{ov}$ measured from inside;
$dr_t$ – one step in the sense of receptacle cosm oscillator elongation $dR_v = cdt_v$.
Here $dr_t$ is determined by phase steps $d\phi_1$ and $d\phi_2$ (see oscillator solution).

$r_v$ – absolute distance in vacuum from the idealized collapse radius $r_{kv}$, which is just observed externally.
This radius $r_v$ in divergence to infinity corresponds to the fiction of rest in vacuum $v_v^2 \to 0$. Reversed: $r_v \to r_{ov}$, $v_v^2 \to c_v^2$.

$r_k$ – collapse radius. Each external mass m can be calculated according to Einstein with eq. (2.8,11).

s - corresponds to a shift in form of a step ds that is developed by all the other waytime-like shifts. It is a function of cosm in its movement.
Total relativity.

The Oscillator Solution of General Relativity Theory lets appear the steps of receptacle cosm amplitude in term 2 as two times $dR^2$:

$$ds^2 = dR_B^2 - dR_w'^2 + 2j^2 dR_{GK}^2 \quad . \tag{2.8,30}$$

Together all physical oscillation dimensions are derived from this waytime-like differential form now, for example, as development of energy:

$$1/dE_s^2 = 1/dE_B^2 - 1/dE_w^2 + 2j^2/dE_{GK}^2 \; . \tag{2.8,31}$$

Schwarzschild's solution contains Hamilton's function in the shape of energy moved along $E_B$:

$$dE_B = dE_{Ao} \times (1 - r_{k(EK2)}/r_v)^{½}$$

$$dE_{Ao} = dE_B /(1 - r_{k(EK2)}/r_v)^{½} \tag{2.8,32}$$

Why has Einstein achieved such a result? If we wanted to see only one aspect, we had to leave all the others out i.e. to set them to zero. Because from the sum of four square terms one cannot pull a common root without losing overview. So Einstein found a mathematical force to understand the matter as a system of these four terms. Obviously, the matter is programmed like this!

Who sets terms to zero without taking notice of the total context is mistaken at the world! The present opinion does just this – it is mistaken because of its incoherent relativity where the infinity doesn't have to move from limits of finiteness!

Certainly, we are permitted to neglect one or several of the four terms for discussion of the solutions. We then mustn't sink into an ignorance opposite to the finiteness of this world, however, because terms taken off from the context let calculate infinities. Already in system finiteness closes everything.

This means (calculated from amplitude to oscillation length): the amplitude $R_B$ (oscillation length

$\lambda_B = 2\pi R_B$) in the shape of $r_i'$ of a moved stable cosm may increase as high as its waytime dilation until the external amplitude $R_{o(GK)}$ of its receptacle cosm is reached. If it goes higher dilated, it cannot leave the receptacle cosm by crossing its dimension.

Though, the calculation or oscillation length $\lambda$ onto its amplitudical magnitude R, a fiction remains measured with reality. While dilation of oscillation length $\lambda_o$ to $\lambda_o'$ a cosm cannot expand its amplitude $R_o$ onto really $R_o'$. Doing this, it had to bend finitely much but extremely high amounts of isolated mass becoming free. This is a contradiction. In this respect, the real amplitude of cosm remains the same. Only its oscillation length is shifted by which the external energy of the cosm is relatively decreasing.

The success of elongation R to the amplitude $R_o$ is shifted over the shift of oscillation length $\lambda_o$ way-time-likely (cf. (1.1,6) and (1.1,7)).

If one divides the oscillation length $\lambda_o$ arbitrarily, may be by $2\pi$, which should give the resting amplitude $R_o$, then one gets only parts of oscillation length. When we speak about an amplitude shift, then we mean the part of shifted oscillation length. The real expanding of mass doesn't correspond to this formalism. Otherwise, a relativistic body had to blow out. Instead of this, it shifts the step of its clock waytime-likely by shifting the oscillation length $\lambda_o$ and the period time $\tau_o$.

This problem marks the shift of period time $\tau_o$ as well as of frequency $f_o$ after which for every shifted oscillation length $\lambda_o'$ is valid the same intrinsic phase angle:

$$\phi = \phi \times \tau = 2\pi \times f \times \tau = 2\pi \times f' \times \tau' .$$

Even then, if one writes the shifted magnitudes on the abscissa, one recognizes that the relativistic part of $\phi'$ cuts the non-relativistic $\phi$:

$$\phi_{rel} = \phi \times W_{SRT} . \qquad (2.8,33)$$

Here the relativistic phase angle shift is resulting. This way, the elongation is dilated to the same real amplitude $R_o$ but only from the phase angle. The amplitude of a cosm is the analogon to the intensity, which isn't able to be changed by a relativistic change. If we write here of elongation steps, then these are parts of steps in calculation of oscillation length.

Third Dialectics of Unity

$$ds_3^2 = dR_B^2 + 2j^2\, dR_{GK}^2$$

$$dR_B^2 = ds_3^2 - 2j^2\, dR_{GK}^2 .$$

With the constructed condition as follows

$$2j^2\, dR_{GK}^2 < ds_3^2 < 3j^2\, dR_{GK}^2$$

The dilated elongation step of elementary cosm $dR_B$ can increase to the elongation step of stable receptacle cosm $dR_{GK}$, more of it doesn't leave the receptacle cosm. Again the terms are to understand for themselves, and realistic solutions have to be found from single terms extracted the root. If there should exist a constructive giving that would make that the elongation step exceeding over the elongation step of receptacle cosm like at open cosm - at protocosms -, so the content opens itself by anticollapse into the above situated upper receptacle cosm as follows:

$$2j^2\, dR_{GK}^2 < ds_3^2 < k \times j^2\, dR_{GK}^2 , \qquad 3 < k < g \quad . \qquad (2.8,34)$$

The number g describes the order of magnitude of the above situated upper receptacle cosm horizon. For example, a quickly moved parton cannot overcome the limits of its proton. But an energy giving to the stable proton from the outside of about three times 90 GeV as pair forming energy (2.4,56) is able to form protocosm pairs inside the proton. Though, the proton becomes a super-unstable cosm seed,

heavier than 270 GeV/c². These isolated protocosm pairs represent a surplus, which - as soon as it finds together – is set free to the outside as energy and which is also producing there electron pairs and charged leptons and neutrinos corresponding to the effect of “weak force" or “rare effect”.

The distribution of energy of Schwarzschild’s solution means in each reciprocal states:

| | | | | |
|---|---|---|---|---|
| Total energy relativistic $^{-2}$ | = dilation state of moved rest energy $^{-2}$ | - | contraction state of wavequantum energy $^{-2}$ | + receptacle cosm energy $^{-2}$ |

$$1 /E_s^2 = 1 /E_B^2 - 1 /E_w^2 + 2j^2 /E_{Ao(GK)}^2 \ . \qquad (2.8,35)$$

If we set the summands (seen as single) of this solution and of our specially relativistic energy understanding in a coordinate system of four quadrants (ordinate for one divided by energy square, abscissa for velocities in vacuum), we already recognize the intersection points that sign the finite behavior.

This can be worked also for the respective honest behave of the energies. We have to type the specific parallels of receptacle cosms selected for the resting energies, which are always fundamentally lower as the resting energies of their elementary cosms. As a graphic solution, the dilations of the kinetic energies $E_B$ of elementary cosms then cut themselves there with receptacle cosm energy $E_{Ao(GK)}$. Though, the expected **cut of finiteness** is graphically given in the formulae that shows us the maximum velocity $v_{max}$ next to the light velocity $c_v$ just taking part with it at death and rebirth of receptacle cosm. If we prolong the maximum velocity vertically into the ordinate parallel, we get the cuts of relativistic energy $E_A$ and of wavequantum energy $E_w$. This way, the magnitudes got their finiteness by the maximum. Also the wavequantum energy cuts the line of receptacle cosm energy $E_{Ao(GK)}$ how it also shows that there can never be a resting elementary cosm in its receptacle cosm.

Just like this, we can proceed with the amplitudical times t and the amplitudes R, which we draw on the ordinate. But on the abscissa, we mark the way of electrogravitation horizon $r_o$ up to theoretical infinity (really we mean the comparison of oscillation lengths). Next to the theoretic gravitation horizon $r_o$ of elementary cosm, the wavequantum amplitude $R_w$ and the relativistic amplitude $R_A$ will develop to $r_o$ if in positive ordinate direction the larger elementary cosm horizon $2R_{o(EK)}$ wouldn’t lay as parallel to the abscissa where it shows the border of coming into infinity. Totally above in positive ordinate direction is the receptacle cosm amplitude $R_{o(GK)}$ as a parallel to the abscissa where it shows the limit of dilation of movement amplitude of elementary cosm $R_B$. The lead to the abscissa cuts the wavequantum amplitude $R_w$ and the relativistic amplitude $R_A$. Except for this, the wavequantum radius $R_w$ cannot increase into the infinity at small vacuum motions of v to zero (then the elementary cosm would absolutely stand still) because it cuts the receptacle cosm radius. Here, the inner finiteness has been described of the quality of the receptacle cosm!

Infinity does not exist for participants at death and rebirth, if the receptacle cosm gives its limit with its own amplitude of wavequanta and their relativity (that’s stability). The finite distance of this cosm to a gravitational field has its cause in the omnipresence of gravitational effects, may they even be small. This finiteness reality limits the relativistic factor $W_{GRT}$ to a finite value that comes from the special receptacle cosm. From this reason, the divergences of wavequantum amplitude $R_w$ and of relativistic amplitude $R_A$ to zero have no real character: at a determined amount that is derived by the system of movement possibilities coming from the receptacle cosm to the elementary cosms, the real horizon of a mass collapse only can reach a finitely small value next to the theoretical horizon of $r_o$! Otherwise, the resources of the whole universe were totally consumed. For overcoming these limits, one had to find other solutions without respect of inertia.

These results should have come from the General Relativity Theory. Till now, nobody found any indications. The first essential condition of relativity results in this question: How high can the speed be of a moved cosm raised actually if the movement problem is actually able to solve in special relativity by velocity relations? The answer is given by general relativity. Velocity limit of an elementary cosm is

where it exactly reaches that dilation that corresponds to the elongation of receptacle cosm. The general relativity answers to infinity fiction of special relativity with a clear fact: everything is relatively finite!

Just therefore, only one General Relativity Theory is able to unify those formulae of special and general relativity in one system of opinion. United Field Theory on hand leads to the aim. Following equations originate from the graphic solution. They represent the conditions of calculation of finiteness with eq. (2.8,36) to (2.8,41). Thus, the following terms are valid for the resting magnitudes of observed elementary cosm ($E_{Ao(EK)}$ or $R_{o(EK)}$), which is moving in its receptacle cosm:

$$E_{Ao(GK)}^2 = E_{Ao(EK)}^2 \times (1 - v_{limit}^2 / c^2)^2 \qquad R_{o(GK)}^2 = R_{ov(EK)}^2 / (1 - v_{limit}^2 / c^2)^2$$

$$v_{limit} = [c^2 \times (1 - E_{Ao(GK)}^2 / E_{Ao(EK)}^2)]^{1/2} \tag{2.8,36}$$

$$v_{limit} = [c^2 \times (1 - R_{o(EK)}^2 / R_{o(GK)}^2)]^{1/2} \tag{2.8,37}$$

$$r_{limit} = r_{k(EK)} / (1 - E_{Ao(GK)}^2 / E_{Ao(EK)}^2) \tag{2.8,38}$$

$$r_{limit} = r_{k(EK)} / (1 - R_{o(EK)}^2 / R_{o(GK)}^2) \tag{2.8,39}$$

$$E_{wmin} = E_{Bmin} > E_{Ao(GK)} \qquad R_{wmax} = R_{Bmax} < R_{o(GK)} .$$

with (2.4,46) and (2.4,45) follows:

$$E_{wmax} = \{E_{Ao}^2 \times [v_{limit}^2 / (c^2 - v_{limit}^2)]\}^{1/2} \tag{2.8,40}$$

$$E_{Amax} = \{E_{Ao}^2 / (1 - v_{limit}^2 / c^2)\}^{1/2} \ . \tag{2.8,41}$$

If special cosms with their magnitudes are known like universe (see section 4.5.) from them the limit magnitudes of velocity, maximum contraction of collapsing mass could be calculated and further conclusions of finiteness of waytimes could be taken. If one will take part at infinity in the eternal universe, one must exceed the limit magnitudes especially the limit velocity.

## 2.9. Oscillator-Solution (by ARCUS, 1986 and 1992)

Theses:

The general relativity principle would cause infinite relativity.

Antitheses:

We mean this principle even limits the relativity on finiteness.

For coordinate systems resulting from each other non-continuously follows that both observers live inside of two different worlds in their respective coordinate system.

This precise interpretation, we will use to explain the closed (locked) curvature of a spacetime according to the principle of cosm oscillation as a closed world how it is possible to think the relationships of physical dimensions working between two worlds to zero. In the last section, we showed that the bridging of two worlds is only running over the imaginary size of j.

That is valid for electrogravitational matter that is caused on stable particles, which also can be derived into unstable states. For the stationary vacuum, we don't use the postulate of general relativity principle anymore in separating but in connecting way. Exclusively, the generally given vacuum can be a magnitude that is becoming an object at the outside of a world and which can be continued in relatively external space. For example, it means that between the isolated inside of two quantized oscillating

Black-White Holes, some common external relationship is not feasible, which would make contact between the isolated physical events with exchange of physical magnitudes directly closing movement systems (these laws are valid everywhere in the same way). Briefly said: In the continuous coordinate system of the stationary vacuum that is transferring its most general law (of physics) onto all the existing things, independent but completely closed coordinate systems exist with subordinated and concrete physical operations according to the generally valid laws.

Theses:

Generally resting mass of a “Black Hole" would be working into the generally stationary field.

Antitheses:

The contracted and isolated resting mass of a Black White Hole externally only is working in minimum magnitudes until it will be changed by elongation coming into its package (by condensation). Consequently, its coordinate system is moving back below the vacuum sphere that horizon is falling now to the inside after the oscillation. Outsides, a completely different quality of mass can be noticed, which is the oscillation energy of the total sphere $\Sigma_o$ divided by the square of light-speed $c^2$.

Present conception of “Black Holes" in stationary form and of total action of its internal mass into the external spacetime is invalid! Instead of this hypothetical feature, we substitute the matter by a system of hierarchies, which are consisting themselves of non-stationary Black-White Holes living in the stationary vacuum. Their inner matter gives information to the outside indirectly:

The external movement forms the external cosm momentum in which it represents the receptacle movement of all the internal moving matter at the same event, those movements are hidden from the identifications of the outside. Just electric interactions can inform over isolated movements analogously gravitational features.

This external cosm momentum determines the externally measurable mass $m_o$ (cf. eq. (2.6,1)), but all the isolated mass $M_o$ as expression of static gravitation charges – these are the isolated cosm momenta - and of dynamic gravitation charges (these are wavequanta and elementary magnets) will be locked below the gravitation horizon calculated from the inside!

**You see, all the oscillation mass $M_o$ is that cause of locking in the course of a general change of qualities!**

If there are two kinds of mass – gravitational resting mass and electromagnetic momentum mass – that find together in locking, though each mass itself works out the total curvature of its intrinsic coordinate system! Every isolated and gravitomagnetic momentum mass takes part at the curvature of its massive coordinate system. The sum of electromagnetic momenta allows a special solution – the radiation cosm solution as one of the Friedman solutions (see section 3.2.3, page 460). One could assume such divergently locked photon cluster, which one must see as a magnetic monopole pair with two magnetic charges oscillating themselves in congruence. Such a kind of special light worlds we sign as **Magon Pairs** or PK-magon pairs and abbreviate them as magnet-antimagnet.

Just the movement only is able to give a function to the interior as well as to the exterior with an intrinsic existence. The whole logic shows our objectively idealistic assumption: if a real primordial substance is moved, then it draws a real picture that then is becoming a real importance. Though, a closed movement draws a mass into the matter and projects the totally transparent picture of universal movements to the outside while an open movement in our brains is thinking into the inside of matter, into chemical and physical real-processes (materially provable movements), and while the same open movement draws our soul to the outside into the nothing like this non-material state is seen by us (a projection to the outside that is not provable from the inside).

This point of view is radically consistently relativistic. It pulls a completely new judgment of the physical magnitudes within the solution equations of the Relativity Theory and the Quantum Mechanics. In this

respect, it is the key to the unity of the theories and at the same event, it is the base of philosophy. On this fact, we will come back especially in section “2.12. Cosm momentum and *magnetic momentum“*.

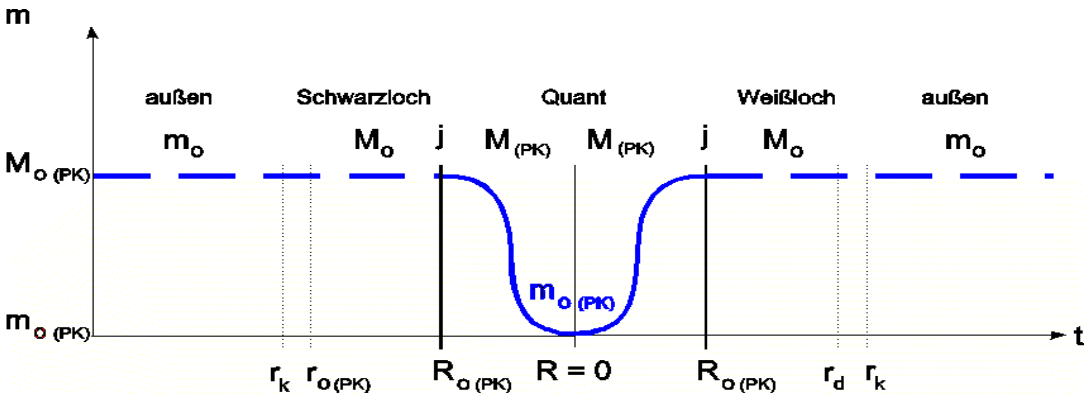
The external mass $m_o$ that is taken to the inside becoming there the mass $M_o$, contracts and starts collapsing at $r_k$. Below the divergence horizon $r_d = r_{o(PK)}$ that mass $M_o$ is falling on, observed from the externally valid coordinate system. After reaching the amplitude $R_{o(PK)}$, this mass $M_o$ changes its coordinate system by the imaginary number j. That mass $M_o$ changes to the oscillation mass of the new quantum $M_{(PK)} = M_{o(PK)} \times \cos^2\phi$, which reflects the oscillation to the outside as that external protocosm mass $m_{o(PK)}$. Now that adjusted Planck quantum is oscillating on half a period $½\tau_{o(PK)}$ in the shape of a protocosm into downward elongation -dR and upward elongation +dR back to the quantum amplitude $R_{o(PK)}$. There the coordinate system changes under special conditions:

1. Energy Shortage: The internal energy accelerates the subprotocosms just as if they would be protocosms of a stable particle. In the result, the internal mass becomes external because of its divergence after which a certain measurement of quantized radiation comes to the outside, but the internal structures don’t have enough energy to pass the way out over the collapse radius $r_k$. Here we have an almost Black Hole that now and then emits rays into the course of its intrinsic period. Such a building may be the PULSAR. Present explanations of the working of a Pulsar, we just cannot follow anymore in our theory of quantizations.

2. Energy Stalemate: The internal dilation energy can accelerate the topmost subprotocosms strongly that they survive the path below the collapse radius $r_k$ without anticollapsing before. It doesn’t require any additional assumptions, because it certainly seems to be logical that in universe a complete palette of diversely energetic interactions will have led to the different celestial bodies. That pulsar will show a higher dose of radiation.

3. Energy Surplus: It can accelerate the subprotocosms of the topmost cosm sentences as strongly that those periods are dilated until they have exceeded the collapse radius $r_k$ at least or even far away from this radius (in 2020 I called these special protocosms Energy Cosms). That white hole phase installs the externally known solar systems and galaxy systems. The central divergent sphere system remains there, which energy is becoming impoverished during the procreation process of further ranks of protocosmic interactions until it passes over from energy stalemate to energy shortage. Such protocosms having energy surplus was produced in radiation fire. Therefore, from their external mass function $m_{o(PK)}$ will be set free essentially more internal mass $M_o > M_{o(PK)}$ than it is possible in relationship of stability assumption or in a undamped oscillation with eq. (2.7,1) and (2.7,4). …

Illustration 2.9;1: The Change of Coordinate Systems between Outside and Inside




Explanations from German: außen = outside, Schwarzloch = Black Hole, Quant = real Quantum = Cosmos, Weißloch = Whit Hole. With the above mentioned three points we master the whole universe. Now we want to prove the oscillator inside the stationarity.

I. The observer “I” means that the relativistic effects would be able to be compensated with his view from the inside to the never reachable end of its receptacle cosm to $r \rightarrow \infty$, practically in the pseudo infinity. At the same event, his elementary cosm seems to rest in vacuum.

II. But if the observer “II” looks at one of his elementary cosms from the outside, then he is already separated by the radius $r_o$ from each of these elementary cosms and their inner worlds. By the horizon condition it is already valid $t = +\infty$ (Kruskal solution, see section 3.2.2.). In this respect, he is not interested in the effects of his elementary cosms describing his receptacle cosm.

> Now the observer is allowed to do something that was caused with the general relativity principle from which he wins a new view at the hierarchy of cosms.

In this case, he suspends the generally valid relativity, because the spacetime of the observer “I” is not the spacetime of the observer “II”. Though every observer has his own relativity, so he relatively has his spatial limits being in his own world.

Therefore it is valid: $r_v = \infty \neq r_t$ .

We distinguish between the pseudo-infinite coordinate $r_v$ and the finitely determinable coordinate $r_t$ that could be measured by the observer at his receptacle cosm or at one of his elementary cosms by exceeding from or falling to the horizon limit of pseudo-infinity there, at the same event.

Consequently, every observer must define his ways. By reasons of definition of an amplitude $R_o$ and its amplitude time $t_o$ (both are equivalent over $c = R_o/t_o$) we give a definition like in eq. (2.8,25):

$$r_t^2 \equiv j^2 R_{o(GQ)}^2 \qquad \text{and} \qquad t_t^2 \equiv j^2 t_{o(GQ)}^2 \,, \tag{2.9,1}$$

The relativistic terms disappear, because the terms 1 and 3 are different of the external world. The equation (2.8.24) changes into the form as follows:

$$ds_1^2 - j^2 R_o^2 \cdot d\phi_1^2 = j^2 R_o^2 \cdot (\sin^2\phi_1 \, d\phi_2^2) \quad . \tag{2.9,2}$$

That movement of $R_o$ is determined from the magnitude or spherical coordinate $\phi_1$.

Just now we already saw that the observer stays on an x-arbitrary point of an oscillating surface determined by $\phi_1$. If there is a coordinate for him, then it is a polar coordinate $\phi_1$ that says to him, he has arrived a determined elongative height. Above there, each position on the spherical surface has the same right. Because of the adjusting of $ds_1$ follows:

$$ds_1^2 = j^2 R_o^2 \times d\phi_1^2 + j^2 R_o^2 \times d\phi_1^2 = 2j^2 (R_o^2 \times d\phi_1^2)$$

$$R_o^2 \times d\phi_1^2 = R_o^2 \times \sin^2\phi_1 \, d\phi_2^2 \,. \tag{2.9,3}$$

We turn a $dR^2$ from the left term of the following equation and set $\phi_1$ briefly as $\phi$:

$$dR^2 = R_o^2 \times d\phi^2 \qquad \text{or} \tag{2.9,4}$$

$$d\phi = \pm dR / R_o \quad . \tag{2.9,5}$$

Because of (2.3,2) the following relation is valid:

$$d\phi = \pm dt / t_o \,. \tag{2.9,6}$$

And now, we integrate it as follows:

$$\int_{o}^{2\pi} d\phi = \pm R_o^{-1} \int_{o}^{u} dR = \pm u / R_o = \pm \phi_o \ . \qquad (2.9,7)$$

$\phi_o$ is now the maximum magnitude of the phase angle of $2\pi$ (cf. eq. (3.2.3,13) and (3.2.3,14))

This yields the following integrable basic equation:

$$\mathbf{dR^2 = R_o^2 \sin^2\phi \, d\phi_2^2 \ .} \qquad \mathbf{(2.9,8)}$$

Extracting the root, the following equation is valid:

$$\mathbf{dR = \pm R_o \sin\phi \, d\phi_2 \ .} \qquad \mathbf{(2.9,9)}$$

Assuming the phase angles of all oscillation elements of the sphere $\phi$ determined by $R_o$ would agree in their common receptacle cosm, what they must, otherwise there wouldn't be any community:

$$\phi = \phi_2 \ , \qquad (2.9,10)$$

we can integrate uncertainly and get four equations analogously to (3.2.3,26…27). With (2.9,10) the integrals of the unity of waytimes that reflect the WORLD FORMULA, have taken the following form:

$$R_I = + R_o \cos\phi + const_{(r)} \ , \qquad (2.9,11)$$

$$R_{II} = - R_o \cos\phi - const_{(r)} \ , \qquad (2.9,12)$$

$$R_{III} = + R_o \cos(-\phi) + const_{(r)} \ , \qquad (2.9,13)$$

$$R_{IV} = - R_o \cos(-\phi) - const_{(r)} \ , \qquad (2.9,14)$$

$$t_I = + t_o \cos\phi + const_{(t)} \ , \qquad (2.9,15)$$

$$t_{II} = - t_o \cos\phi - const_{(t)} \ , \qquad (2.9,16)$$

$$t_{III} = + t_o \cos(-\phi) + const_{(t)} \ , \qquad (2.9,17)$$

$$t_{IV} = - t_o \cos(-\phi) - const_{(t)} \ . \qquad (2.9,18)$$

Each of the involved waytimes oscillate according to such a principle that they form a space – the spacetime. Actually, we move us only within the single dimension WAYTIME, which one means to have the fourth coordinate today, but that is really the first and the only one coordinate, because our behavior to reflect coordinates in Euclidean systems was unrealistic under inclusion of the time grafted onto. The imaginary number "j" is just a sign of interpretation keeping mathematically exactly if a spacetime consisting of its waytimes has to be connected to another spacetime.

In this respect, the equations seem to be like the correlation result of Schrödinger's $\psi$-function, which came near to reality relatively to the sky waves. After that basic equation of a three-dimensional oscillation of something oscillating - namely $\Delta\Psi$ ($\Psi$ = the anything moved in three-dimensional way and time) – the oscillation of a spacetime was recognized as the product of moved cosms without knowing more. This is secondary, because the primacy of waytime was disregard. We recognized the primacy of matter with the cosmological oscillation of all cosms on orbits, which describe areas (paths, tracks), but they don't describe orbitals explained spatially. Orbitals are the expressions of wave areas.

The variety of all areas may form the orbit, but not reversed. Though the objectivity of spatially oscillating particles was mixed up with the wavequanta of moved particles. This means: Schrödinger anticipated the reality. An electron is forming the very first pre-step of a cosm but still no cosm. Only 7.8 × $10^{46}$ electrons are able to form a Black Hole, which would correspond to the radius of hydrogen atom. Consequently, the Schrödinger cosm is flat (it isn't still locked) – it is an interaction area in which the electron is rotating without being observed directly.

The illustration 2.9;2 at page 367 shows the solution of positive phase angle. For negative matter, the negative phase angle is existing. The positive and the negative amplitude pointer $\pm R_{o(z)}$ is moved by $+\phi$ into the direction $\pm R_{o(x)}$ as well as it is also forced drawing the helix (P) because of the left rotation of the circle area $R_{o(x,y)}$ with $+\phi$. In total interval of phase angle, the running point P describes a closed helix – like the draw of a number 8 in spatial dimension seen from $r_{(y)}$.

The large axis of each ellipse described this way corresponding to the diagonal of a square $R_{Go}$ because of the distance of the example $R_{o(z)}R_{o(y)}$. Starting from $\pm R_{o(z)}$, Goedel's radius $R_{Go}$ moved with angular velocity $\omega$ is also drawing the rolling of the Friedman circle $R_{o(x,y)}$. Friedman radius $R_o$ is given by projection of a Goedel-radius $R_{Go}$ onto the x,y-plane. If one projects the running point P into this x,y-plane, then its point P' is drawing a circle of the radius $+½R_{o(y)}$ (= small half an axis of ellipse) exactly two times with the same right sense within the total interval of $\phi_o$.

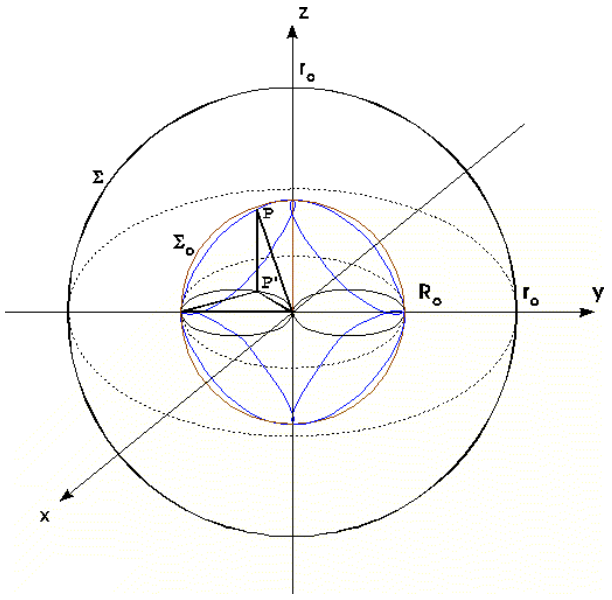
The radius $-R_{o(z)}$ moved along is also forming a double circulation with the right-directed rotation over a radius of $-½R_{o(y)}$ with its running point and its projection.

The distance PP' corresponds to the elongation ±R. After the law of Thales, the running point P' is drawing right triangles of the cathetes OP' and $P'R_{o(y)}$ and of the hypotenuse of the amount of $|R_{o(y)}|$. This right triangle made by the origin 0 and the points P and P' is congruent to the Thales triangle. Changing angles complete the proof. Therefore the variable triangles consist of the amounts of the cathetes R and $R_2$ and the hypotenuse $R_o$, where always is valid:

$$R_2 = R_o \sin\phi \quad . \qquad (2.9,19)$$

That totally isolated event is locked by $r_o$ or its vacuum sphere $\Sigma$. The movement of this right-directed matter (positive gravitation) is exclusively determined by $+\phi$. This $+\phi$ decides about space and time after making $R_o$, $t_o$ constant! With $-\phi$ negative gravitation is given.

Illustration 2.9;2: <u>Oscillator Solution – the World Formula in Illustration</u>



We define both circles made by P' draw of the radius $\pm½R_{o(y)}$, which additionally yield the same perimeter like the Friedman circle as

**Parity orbits (PB).**

These are idealized arcs. They only appear exactly, if the mass density would be stationary and if then an element would be moved from R = 0 to R = $R_o$ with vacuum light velocity. The way's length would have the magnitude of $K_o$. In reality, the non-stationary density makes moving in spiral shape. In the beginning, the density is extremely high but not infinitely high because of the discontinuity over the central mass negation. Also the orbit curvatures have begun extremely. A parity orbit therefore one has to imagine as spiral smoothed up to the circular arc.

Half a perimeter of the Friedman circle $u = 2\pi R_o = \lambda_o$ like half an oscillation length or calculated as half a period time, we define to $K_o$:

$$K_o \equiv ½u = ½\lambda_o \; . \qquad (2.9,20)$$

The same rotation direction of both parity orbits (rightly in direction of z-axis ≡ positive) is to interpret as positive gravitation by yielding to a dipole behavior of force rotating positive gravitation charges on them reflecting the attraction in the x,y-plane - a cohesion. The left-directed rotation led by the negative phase angle has to be seen as negative gravitation in dipole shape. Such cosms making negative gravitation hold themselves together - negative attraction. Because of eq. (3.2.3,6), it also gives the same structure to the electric cosms, but we know their dipole behavior from Maxwell's theory. So we must conclude: contrary poles of gravitation generally repel each other.

Because it is valid: if on both parity orbits two charges rotate with the common denominator of electric type in right- or left-directed rotation, then their poles of the common denominator of its dipole repel themselves on both sides of x,y-plane. We see the reverse processes that lead to the attraction; but we also know that the contrary rotation directions are compensating themselves in mathematical congruence.

As we have the force defined as result of movement ($\pm\phi$), forces always compensate themselves if **contrary charges** of gravitational and electric origin are standing in the distance of zero or in relative congruence to each other. Mathematical congruence never will be complete (divergent congruence), if the spacetimes shall be moved on the same way into the same direction, because their own extension prevents the equality. The perpetual polarization follows from the divergent congruence.

From the compensation of the dynamic magnitudes, which externally diverge to zero, the vacuum state of the cosms can be justified. The compensation of dipole forces always then will be reached, if below of $r_o$ the contrary cosms (cosms and anticosms) compensate their parity orbits and their force. Though vacuum cosms of primary type arise, which are consisting of the primary charges of gravitation and electrition.

The vacuum is the absolute space where relative spaces are possibly made from movements of cosms. Is there actually a body given, created with the absolute space, which physically earned the name "volume"; volume with all its thermodynamic consequences? No, it isn't. In vacuum, some measurement of some volume of a real physical phenomenon "particle" does not exist, where protocosms are moving, which firstly form out the secondarily relative intrinsic space of special types of cosms. During a waytime-like movement of protocosm matter in vacuum, one cannot speak of a change of vacuum's volume! This is senseless! In this respect, neither a universe expansion nor that contraction exist before protocosms tip out their contents at all!

The apparent amplitudical or the elongative volume $V_o$ or V will be installed. It is named:

$$V_o = 4\pi \times R_o^3 /3 \; , \qquad (2.9,21)$$

$$V = 4\pi \times R^3 /3 = 4\pi \times (R_o \times \cos\phi)^3 /3 \; .$$

From this cohesion, the amplitudical or elongative density is able to be calculated:

$$\mu_o = M_o / V_o \ , \qquad (2.9,21a)$$

$$\mu = M / V = \mu_o / \cos\phi \ ; \qquad \cos\phi \neq 0 \ , \ \text{(cf. (4.1,6) to (4.1,10)}$$

$$\mu = k_\mu / R = R_o \times \mu_o / R \ . \qquad (2.9,21b)$$

The cosm density is centrally installed and falls to the deepest value $\mu_o$ with the upward elongation $R \rightarrow R_o$. These magnitudes are idealized, because this theory only requires that they are related on elongations. But that elongation is running most subtly differentiated of the single elements of matter. There are essentially denser areas where thinner spaces are connected. On average value, the density is then $\mu_o$ if the elongation has reached $R_o$ de facto by running installation with $½\lambda_o/\pi$.

Each body installed by its protocosm consisting of cosms has its own waytime. After its installation, it radiates out and it receives in the momentum exchange of making the forces with intermediate electromagnetic and gravitomagnetic radiation. When the complete exchange of electrogravitational radiations has gone, it goes off of its installation place again. This means: between the installed bodies, which came from protocosms themselves and which now take contacts under each other in the installed receptacle cosm by radiation exchange, no spatial times exist but only waytime-like contacts.

One cannot take the concept of spacetime primarily. More the waytime is the primacy of formation of spatial contacting of a quantity of such bodies of spatial shape, those insides are only the same product of waytimes again.

In this respect, all the theories must lead to mistakes, which go up into a higher dimension instead of recognizing the reality of birth of three-dimensional spacetime $r_{(x,y,z)}$, $t_{(x,y,z)}$ from one single dimension (what is the movement) and its exceeding of its limits in overcoming of the fourth dimension j. Because it may not be valid to cover the coordinates x, y and z being dipoles:

$$ds^2 = dx^2 + dy^2 + dz^2 - dct^2 \qquad \text{(Minkowski spacetime).}$$

Under such aspects, one always discusses separated terminologies like “way-like" and “time-like". With our definition of commonly observed installation waytimes or oscillation waytimes, the line element ds is always three-dimensional. From this the “waytime-like" unity is given as the following:

$$dct^2 = dct_x^2 + dct_y^2 + dct_z^2 \qquad \text{and} \qquad dr^2 = dx^2 + dy^2 + dz^2 \ .$$

Under this condition, the waytime $dr^2 = dct^2$ is equivalent to the three-dimensional “waytime-like" calculation of polar coordinate: the three-dimensional state is a fiction of the one-dimensional state.

Minkowski spacetime is better solved relatively by Einstein’s spacetime. But it was mistaken interpreted in a rudimentary way of present physics under neglecting of coordinates by making dependent a sphere on dilations of local waytime and on contractions of wave-waytime. That sphere is even way and also time itself.

It is only allowed to see the relations between the movements of particles or of particle systems in the total system of all movements in spacetime without losing from the eye that here a unity is given, which adjusts their own ways and times on a common synchronized relation: **either both have dilation or both have contraction!** The way is a vector, because the movement direction in vacuum has an essential importance. According the equation

$$\mathbf{E} = \mathbf{F} \cdot s \ ; \quad \text{F as force, s as way or distance,} \qquad (2.9,22)$$

one can give the radial energy with force multiplied with radius as follows:

$$\mathbf{E} = \mathbf{F} \cdot R \ . \quad \text{(/Q 5/, page 75)} \qquad (2.9,23)$$

We can speak of angular momentum vectors, which quantize their energy magnitudes:

$$\mathbf{E}_{wv} = \mathbf{F}_{wv} \times R_{wv} \qquad (2.9,24)$$

(as a reversible dipole),

$$\mathbf{E}_{Aov} = \mathbf{F}_{Aov} \times R_{ov} \qquad (2.9,25)$$

(as an irreversible dipole – a monopolar phenomenon).

The orbital angular momentum $I_B$ equals the effect in circular way $u = 2\pi r$:

$$\mathbf{I}_B = \mathbf{m}_A \times r^2 \times \omega \times 2\pi = \mathbf{m}_A \times r^2 \times 4\pi^2 \times f \ . \qquad \text{(cf. /Q 5/, page 328)} \qquad (2.9,26)$$

In our theory, each amount of an orbit radius r equals then a potent wavequantum amplitude $R_w$ in development of $n\boldsymbol{\hbar}$ and $R_{w(n)}$; the rotations radius $R_{rot(n)}$ of that orbit must be coupled at the relativistic movement mass $\mathbf{m}_B$. The electromagnetic momentum of an elementary current circulating using the elementary charge $e_o$ results as follows:

$$\bar{\mu}_{½(n)} \equiv ½\mathbf{e}_o \times r^2 \times \omega \quad ; \quad \bar{\mu}_{½(n)} /2\pi = \bar{\mu}_{½(n)} \qquad (2.9,27)$$

If $I_B$ from eq. (2.9,26) corresponds to the wavequantum angular momentum $I_B$ of the electron $e^-$ then it is valid $\mathbf{I}_B = \boldsymbol{\hbar}_{½}$ or $\bar{\mu}_{½(n)}$ .

By eq. (2.9,27) one yields the Bohr's electro-magneton $\mathbf{I}_{½} = \bar{\mu}_{½}$ by substitution of all the wavequantum relations ($r^2 \times \omega/n$) and of shortening of special relativity:

$$\bar{\mu}_{½} = \mathbf{e}_o \times ½\boldsymbol{\hbar}/\mathbf{m}_{o(e)} \ . \qquad \text{(/Q 11/, page 185)} \qquad (2.9,28)$$

The cosm magnitudes of elementary charge and resting mass of electron remain in vacuum. The e. m. angular momentum $\bar{\mu}_{½}$ works out the atomic angular momentum of mass ½ħ (gravitational).

That electromagnetic momentum exists objectively really and it has two sides in our theory – one for the positive and one for the negative charge of waves $\bar{\mu}$. In this respect, it is vectorial.

A monopole mass $\mathbf{m}_o$ is effectively just as heavy as the complete effect of wavequantum masses $|2m_w|$ thus like the effect of the wavequantum mass (dipole mass) $+|m_w|$ or $-|m_w|$ because the negative monopole mass also fills up the field, but it remains irreversible. The same behavior is valid for monopolar resting energy $E_{Ao}$ on which one has to calculate two equivalent wavequantum energies $|2E_w|$.

Like shown, the rotation direction in the direction of the vector is defined according to the electric developed Stern-Gerlach knowledge of electrically determined momenta:

clockwise - positive, counterclockwise - negative, $\pm n \times \boldsymbol{\hbar}$ (bosons) or $\pm n \pm ½ \boldsymbol{\hbar}$ (fermions) .

The electromechanic parallelism is always then correct when a mass rotation is coupled with a charge rotation spatially and firmly.

## 2.10. Harmonical Oscillation of Cosms

Theses:

Corpuscles would not oscillate themselves. Nothing currently indicates that they are oscillators.

Antitheses:

> Those formulae of vibrating systems well-known today change smoothly into the construction after which the isolated mass of a Black Hole is oscillating and by which it is able to be explained fundamentally as a quantized and non-stationary Black White Hole. Only then it represents a clock that is able to change its run into relationship to the vacuum. Stable cosms oscillate harmonically undamped. Unstable cosms follow the principle of a damped oscillation.

We choose an oscillation equation like this

$$\partial^2 R / \partial \lambda^2 = \partial^2 R / v_f^2 \times \partial \tau^2 \quad . \qquad \text{(cf. /Q 7a/, page 65)} \qquad (2.10,1)$$

Here in R is the elongation in a point of oscillation on the oscillation length $\lambda$ or on its temporal analogon of period time $\tau$, which yields again the wave length $\lambda$ over the wave velocity $v_f$ - here the vacuum light velocity c. We take the solutions of the oscillator of the externally single level of n = 1 in that form

$$R_{(t)}^2 = R_{o(t)}^2 \times \cos^2\phi \qquad (2.10,1a)$$

with a vectorial $\phi$-installation (2.10,6). **This is the waytime-like formation of the cosm!** Four solutions follow from the cosine function (cf. eq. (3.2.3,24) to (3.2.3,27)); here for the way firstly:

1./2. $R_{I,II} = \pm R_o \times \cos\phi \quad ,$ (2.10,2) (2.10,3)

3./4. $R_{III,IV} = \pm R_o \times \cos(-\phi) \quad ,$ (2.10.4) (2.10,5)

If the following magnitudes are given

| | |
|---|---|
| $R_o$ | - way-like cosm amplitude = max. elongation, |
| R | - way-like elongation onto stationary r, |
| r | - general way coordinate in stationary cosm, |
| $\phi$ | - phase angle (in rad) corresponding (3.2.3,13), |
| $\tau_o$ | - oscillation time; period time; curved time, |
| f | - rotation frequency, frequency of a total oscillation, |
| u | - perimeter way of the unit circle of radius $R_o$ or |
| $\lambda_o$ | - oscillation length (“wave"-length), $\lambda_o = u$, |

then for harmonic oscillations of a field of spherical moved gravity centers, the system of equations (2.10,6) to (2.10,19) is valid as following:

$$\phi = \omega \times \tau_o \quad ; \qquad (2.10,6)$$

with

$$\tau_o = 1/f \qquad (2.10,7)$$

there $\omega$ is the angular frequency or the angular velocity how it is effectively given in the Friedman cycloid:

$$\omega = 2\pi \times f \quad . \qquad (2.10,8)$$

The radial oscillation velocity $v_{gr}$ is relatively to the maximum $v_v = c_v$ that is possible on the passing of the unit circle perimeter u

$$v_{gr} = R_o \times \omega \times \sin\phi \qquad (2.10,9)$$

(index gr – group front of gravity centers of elementary cosms in receptacle cosm, which maximum takes the amount at crossing zero (limit R = 0)

$$c_v = v_{max} = R_o \times \omega \quad . \tag{2.10,10}$$

The oscillation velocity becomes the form like that

$$v_{gr} = c_v \times \sin\phi \quad . \tag{2.10,11}$$

Tangential velocity $v_{ph}$ of reversed movement is calculated to the eq.

$$v_{ph} = c_v \times (1 - \sin^2\phi)^{1/2} = (c^2 - v_{gr}^2)^{1/2} = c_v \times \cos\phi \; . \tag{2.10,12}$$

It is valid now: $c = (v_{ph}^2 + v_{gr}^2)^{1/2}$ .

Here the group of outermost protocosms (the top protocosms) is moving itself with the group or oscillation velocity to a radial maximum relatively to the radius while the phase is expressed by the radial tangential velocity $v_{ph}$, which takes light velocity $c_{ph}$ on the amplitude $R_o$ of cosm tangentially to it. With this process, the perimeter velocity $v_u$ or $v_\phi$ isn't yet described with that an elementary cosm had to be moved along holding on a circular way of the radius $R_o$ (cf. (2.20,7)).

The actual acceleration has to be calculated with that eq.

$$a = dv/dt \tag{2.10,13}$$

as a deceleration, it is as followed

$$a = -R_o \times \omega^2 \times \cos\phi = - c \times \omega \times \cos\phi \; , \tag{2.10,14}$$

$$a_o = -R_o \times \omega^2 = - c \times \omega \quad \text{as the maximum of a,} \tag{2.10,15}$$

$$a = a_o \times \cos\phi \; , \tag{2.10,16}$$

$$a = - v_{ph} \times \omega \; .$$

A further calculation of a cosm resting in vacuum gives this eq.:

$$\lambda_o = c / f_o = c \times \tau_o \; , \text{ (equivalence of way-like and time-like state)} \tag{2.10,17}$$

$$u = \lambda_o = 2\pi \times R_o = \pi \times r_o \; . \tag{2.10,18}$$

Protocosms have a temporary vacuum sphere (cf. section 3.2.1.). Their unusual feature insists by forming no ideal but a substructured life. In this respect, they don't oscillate harmonically undamped like the cosms, but damped, and then they are not harmonical anymore. Protocosms only live for half a period. Their sub phenomena of their arisen life introduce the discontinuity of their oscillation function like it's known by Friedman solution (3.2.3,24). For the perimeter of a protocosm is valid:

$$u_{(PK)} = \lambda_{o(PK)} = 2\pi \times R_{o(PK)} = \pi \times r_{o(PK)} \; . \tag{2.10,19}$$

Relatively to cosms for anticollapsing and collapsing protocosms follows because of (2.8,7a):

$$\lambda_{o(PK)} = \lambda_{o(K)} \; , \qquad \tau_{o(PK)} = \tau_{o(K)} \; . \tag{2.10,20}$$

A protocosm only lives about $1\pi$ long. While the Friedman solution (3.2.3,27) adjusts on $1\pi$ for ideal, harmonical and undamped oscillation, the protocosm now has been opened with its intrinsic phase angle measurement. Usually, on the graph of this function (3.2.3,24) between 0 and $\pi$, the protocosm

state decays. But the cosm does not decay, it locks its horizon $r_o$ totally showed by the solution of (3.2.3,27). The measurement $R_o$ as amplitude is the expression of the isolated intensity of elementary cosms as well as of a part of the oscillation length $\lambda_o$ or the perimeter u of unit circle, too. On the section $R_o$ of $\lambda_o$, the **partial time** or the **amplitude time $t_o$** is valid corresponding to (2.3,2), (2.10,7) and (2.10,18):

$$R_o = c_v \times t_o \qquad R_{o(PK)} = c_v \times t_{o(PK)} \; .$$

Never a material element is moving to the cosm amplitude $R_o$ during $t_o$, because all the waytimes are running curved after the oscillation length $\lambda$ and the amplitude time $\tau$. Therefore, the elongative real way is made from the amplitude $R = R_o$ to the central dot $R = 0$ with the average velocity $v_r$ during the oscillation velocity $v_{gr}$. For the example of a cosm, the following eq. are valid:

$$¼\lambda_o = ½\pi R_o \; , \qquad ¼\lambda_o \, /c = R_o \, /v_r$$

$$v_r = 2 \, c_v \, /\pi \; . \tag{2.10,21}$$

By this means, on the elongation way, a different time is given – the radial time $t_r$ – relatively the part of period time $t_o = \tau_o / 2\pi$:

$$v_r = R_o / \, t_r \qquad t_r = ¼\tau_o \; . \tag{2.10,22}$$

Extended with $c_v$ we get with the eq. $\quad c_v t_r = ¼ c_v \tau_o = ¼\lambda_o = ½\pi R_o \; .$

$$t_r = \pi \times ½R_o \, /c_v = ½\pi \times t_o \; . \tag{2.10,23}$$

The time $t_r$ has no real importance. It expresses the radial velocity of lifting and sinking the amplitudical sphere $\Sigma$ of the cosm from ($\Sigma_o = 4\Sigma$) that does not arise from radial movements but from arc-like movements of elementary cosms, which really do not form a sphere filled with mass but a flat rotation ellipsoid that well-flatting is not filled but funnel-shaped open. The original building of system orders in universe in our theory has the name **Double Funnel** (see section 4.10.)**.**

## 2.11. Particle Wave Cohesion

Werner Heisenberg (1901-1976) meant to have recognized in 1927 that it would be impossible to determine the location and the momentum of an electron with arbitrary precision (cf. section 2.4.). One called this consequence as Uncertainty Principle. From this, one concluded that electrons would have no determined orbits. On this reason, one completely did it without the broader analysis of the particle character and saw the electron as pure wave that should make a three-dimensional wave according to Erwin Schrödinger (1887-1961). The solutions of his spatial wave functions were called **orbitals**. This concept dating from the English implied the thought, on orbits although here actually the orbit of electron has been left an area of a lot of electromagnetic interactions by observation. Because of the low vividness of the model, finally, one carried back the electrons as particles into this wave system and asserted now that the electrons have to stay in arbitrary areas of the wave spaces with high probability. The square of wave amplitude would be a measurement of the position probability of the electron (Max Born). We short the content and number the statements:

Theses:

1. Location and momentum of an electron are inaccurate.
2. Electron paths would not exist.
3. Negation of the particle concept in favor of the wave concept.
4. Successful calculation of wavequantum interactions.

5. Correct determination of the energy levels of the electrons following from this.
6. Illustration of the result by equation of the stay of
   electrons with the effect area of their wavequanta, of their amplitude.
7. The position probability of the electrons would follow from this model.
   Statistically seen, an electron would be pulverized now.
8. Equation of the wave concept bound with the particle concept.

Antitheses:

1. The wave amplitude $R_w = X$ and the wavequantum momentum $p_A = p_w = p_{(n)}$ of an electron are inaccurate but connected at the elementary constant h. The position $R_{rot}$ of the electron is somewhere, just there where it is coupled with Planck's constant h over the movement momentum $p_B$. Both features are two different sides of the uncertainty:
- local uncertainty relation of the particle $\Delta R_{rot} \times \Delta p_B$, which isn't able to be indicated directly because of the relation of the observer moved along and because it can only be indicated by the wave interaction and by the valid relativistic retardation momentum $\Delta p_A$ of the relatively resting observer according to:
- wave amplitude uncertainty of wavequantum exactly is $\Delta R_w \times \Delta p_A$ or $\Delta X \times \Delta p$.
2. Electron paths exist as circle and ellipse paths in the radius $R_{rot}$ like in the classic sense, too.
3. If the wave amplitude and the wavequantum momentum are blurred at the interaction of an electron with its associated field, then the electromagnetic property has commonly wave character. The particle concept stands outside this discussion. Discovery of Heisenberg doesn't mean a wave-corpuscle-dualism but simply a wave-amplitude-wave-momentum-unity: wave property is a part of wave property.
4. Recognition of the calculation of wavequantum interactions.
5. From it, the exact calculation of energy levels $E_w$ of electrons by differences of wave energies respectively determined wave amplitudes $R_w$ are following.
6. The opinion model is intolerable. That wave amplitude $-R_w$ cannot vectorially set equal to the rotation radius $+R_{rot}$ of the electron on its path, because the vectors are contrary and relativistically different. Though, one has united the interactions of wavequanta of electrons with the electrons themselves and produced the "electron powder" that does not exist at all.
7. Eliminating this mistake from "position probability of the electrons", we get the true interaction probability of wavequanta, which are sent or received between the electrons and their environment transferring those effects.
8. Now, our wave concept is separated from the particle concept again and a dialectical view is opened on the system particle/wave-transmission/wave-receiver.

The areas of the interaction of the magnetic wavequanta, which one describes as orbitals don't exist themselves, because they do not equal the real paths of the electrons. Rather the electromagnetic effects of electron paths couple with each other over the exchange of e. m. and g. m. wavequanta. The calculation models have confirmed themselves to the "Quantum Dynamics" in this. Also we consider the orbital model as incorrect and favor the illustration by a model of the magnetic vacuum coupling where Niels Bohr's opinions of quanta and the electrostatic repulsion of the electrons have received their roll.

That's why we haven't worked any modern quantum-mechanical theories into the structure of the universe. We start with the cause of the elementary electromagnet at the electron, neutron and proton don't lay in the rotation of a charge distributed spherically diffusely at a physical mass. This is proved by the existence of the magnetic moment into itself at the neutron. A cosm rather copies nothing else than a mass point to the outside. On the whole, its rotation is senseless that its ineffective volume would have to concern its mass point. The movements of the inner charge and the charges lead to the concerning elementary magnets independent on the outer charge movement. A movement on an orbit of the cosm then yields the corresponding orbital magnetic momentum.

We interpret the equations (2.4,1) to (2.4,60). A particle represents an ideal oscillator, a CLOCK almost resting or moving in the stationary vacuum that behaves according to the relativity what means that it

is moved faster in the vacuum, then it goes more slowly. For memory: there relativity only can be in the finite, closed and oscillating spacetime by which their dilation or contraction are possible in the shape of the shift of finite magnitudes, period time and wave length. Infinite magnitudes aren't able to shift finite dimensions (see section 2.19.). Under which circumstances does the particle send its radiation quanta? For explanation, the fundamental equation is valid (2.13.1,8) $n\hbar = m_B \times v_{rot} \times R_{rot} = p_B \times R_{rot}$ for the observer, which is moved along: the faster the particle is moved, the more the outer mass $m_B$ decreases about $-\Delta m$ because the internal oscillation has been dilated according to the waytime. For the relatively resting observer, the change of resting mass $m_o$ into movement mass $m_B$ is not valid, but the change of rest mass with the difference $+\Delta m$ onto the relativistic mass $m_A$, which is transformed to the radiation energy $\Delta E_{(n)}$ as indication or retardation mass. This happens by the rotation of a charged protocosm ($PK^+$ or $PK^-$), which reflects the oscillation change of its receptacle cosm $\pm\Delta m$ and changes them into e. m. radiation quanta. We get the following cases if the given rest mass $m_o$ remains equal from which the masses $m_B$ and $m_A$ follow:

1. The rotation velocity $v_{rot}$ decreases while the rotation radius $R_{rot}$ is changed smaller (ideally seen: remains constant): this case we find at retardation ray (braking radiation). The movement direction of the particle hardly changes almost. The movement has apparently left unchanged its curvature radius. Planck's levels go down by determination by velocity from n = unknown to n = 1. Reversed, at acceleration on a definite curvature, one has to supply energy.

2. The rotation radius decreases while the angular velocity of some is changed (ideally seen: remains constant): this is the case at the quantum leap radiation. In stronger measure as the velocity the movement radius changes. Also through this event, the Planck levels fall down to n = 1. Reversed, in movement to a smaller curvature, one has to supply energy.

3. The rotation radius decreases while the rotation velocity increases or reversed: this is not clear because of the different magnitudes of conditions. If they cancel each other out, no quantum changes.

4. The rotation radius and the angular velocity increase: the system takes radiant energy because now the Planck levels are going upward. Reversed, the particle radiates.

The change of the conditions of the relativistic unit by the velocity - as the clock-motion-order - and by space curvature - as the clock-hierarchy-order - give the readiness of the cosm to receive the radiation (spectral resorption) or to transmit radiation (spectral emission) of the energy $\pm\Delta E_{(n)}$ (cf. (2.4,1)). Though, the clock or the oscillator remove its potency of transmission or receiving in the shape of a arched world way with the radius $R_{rot}$ and the velocity $v_{rot}$ (cf. section 2.4.). Mark that these are and remain external magnitudes of the relativistic alteration of the cosm into relationship to its partners, which externally exist, too! The clock or the oscillator get a gravitational and an electrical angular momentum of both charge-features $m_o$ and $e_o$. A surplus of the electrical charge $e_o$ rotates at least inside the electrogravitational receptacle particle. In this rotating complex of movements, the particle saves the orbital angular momentum $I_{B1}$ as effect-equivalent ($m_B \times v_{rot} \times R_{rot}$ ). In this respect, the particle can never be a wave but always only a potent transmitter or a receiver of a wave consisting of wavequanta – just like an oscillation generator or an oscillation receiver.

The electrodynamics calculates the magnetic field strength H at the straight conductor with eq. (2.5,45). We reduce the electric current **I** on the movement of a single electric elementary charge $e_o$ in time. According to the non-relativistically classical theory, it will be moved absolutely straightly. The field strength is indirectly proportional to the separation between the test point on an adopted line of force that surrounds the charge circularly. In this respect, the field strength here is related to the perimeter of an arbitrary circle of the radius r with eq. $H = \mathbf{I}/ 2\pi r$ according to eq. (2.5,45). This means then that the field strength H at the straight conductor is the largest with r running to infinite sizes by immediate proximity of the moved charge (it would diverge to infinite if the charge were dot-like). Bohr's interpretation seems to be right after which the interaction with a charged particle would be the same as the interaction with that wavequantum – that magnet. This opinion leads to the question after the "position probability" of the particle like also after the "interaction probability" of the wavequantum in a local area (Heisenberg's uncertainty principle). This thinking seems to be the best,

assuming the beam of particles presupposed straight lines in connection with ignorance of General Relativity Theory and with attention of classic experience that some compact body of mass m is forming the momentum $p_A = m_A \times v_w = m_w \times c = p_w$ according to eq. (2.4,12). One could not indicate a spatial difference between the position of the body and the position of the interaction of momenta. This body consists of microcosms, which resting mass of each $m_o$ form the wavequantum momentum $p_w$ with their velocity being added to the intensity of microcosms. Assuming all particles of that body would only move a little, then their orbit would be almost straight in its differential. The wavequantum effect by constant h would lay above their amplitude $R_w$ within the compact mass m itself. If we observe one particle of that body, then the effect h with $R_w$ is outsides the particle with its radius $R_o$.

If we ask for the absolute straight line of a conductor in the epoch of Einstein's theories then we already got the answer with the general relativity: Each geodetic lines are curved! In this respect, the classic momentum is displaced by the quantized and relativistic momentum. Bohr's assumption stands by the arrangement.

What good has such an idealizing of straight conductor in "quantum mechanics"? Does a curved conductor change the situation essentially? Yes, it does! Each curvature increases the interaction density with the electromagnetic and the gravitomagnetic field within the area of concave curvature: towards the center of the curvature circle the field strength H increases! There some feature of **center of wavequantum** is formed out with the bipolar wavequantum charge $\pm e_w$ or the wavequantum mass $\pm m_w$ analogously it is valid for the rest charge $+e_o/-e_o$ or the rest mass $m_o/\cancel{+}m_o$ as monopole. The particle momentum therefore is expressed as a wavequantum momentum. Never a particle interact by itself at its intrinsic gravitational center as a position of gravity (this is pure gravitation), but by its wavequantum that position develops by different circumstances of quantizing of waves and that position is far away of the gravitational center of that particle.

This is called in the parable: **Where a particle's gravitational center A of the mass $m_B$ is rotating to the right, the path radius $R_{rot(n)}$ is described.** This radius has to be seen as a lever arm that is located in the center of rotation. In this respect, the rotation radius $R_{rot(n)}$ represents a positive vector that rotation direction shows to the moved particle position: $+R_{rot(n)}$. In the starting point or in the lock point **B** now is the effect center of the electromagnet $R_{rot(n)} = 0$. The strength of the magnetic field is not concentrated on the moved particle and not on the current of charges, but on the electromagnetic and gravitomagnetic field center in B. Simply: a magnet will be moved into the center of the inductance but it does not be moved into the direction of winding coil! The electromagnetic center is in its center looking like concentration of magnetic field lines. It is bipolar relatively to the gravitational and to the electric center, which are monopolar.

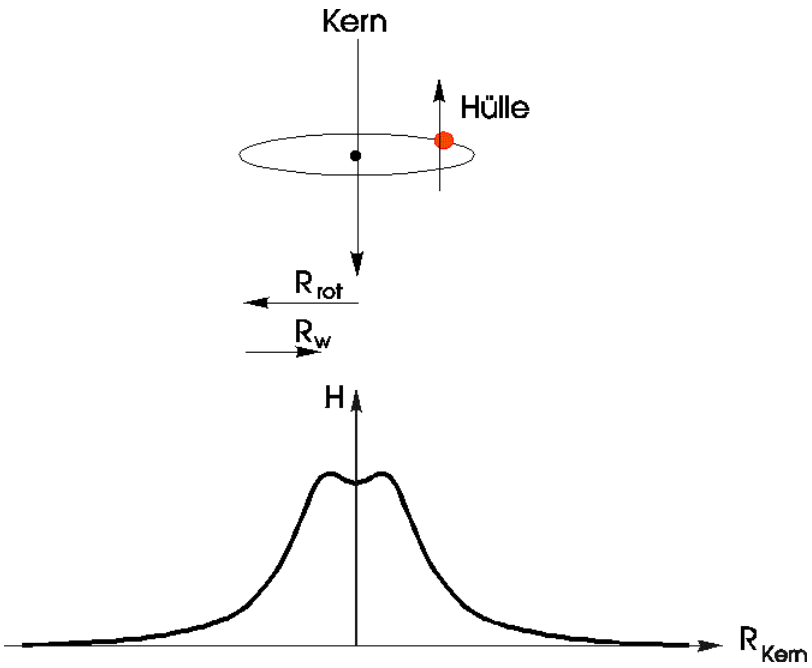
If one brakes now the particle in its intrinsic center of gravity A then the movement radius $R_{rot}$ is acting like it was an inertial lever arm: it comes out from its location in B with reversed rotation direction (now to the left). For the indicating observer, it becomes to the wave amplitude $R_{w(n)}$ with eq. (2.12,8) and (2.12,8a) and with the reversed direction to the rotation radius $R_{rot(n)}$. The particle stops in A. But the e. m. wavequantum (the energetic field center in B at $R_{rot(n)} = 0$) collides now on the indicator. In this moment, it initiates the interaction with the indicator in relativistic distance $\overline{AB}$ as the same $R_{w(n)}$ but in reversed sense of that vector (left orientation of movement). Since Max Born's interpretation of "position probability of a particle " in "amplitude square", one thinks to make an equality of the radial position of the particle on its path with the hit of its interaction of its wavequantum formally, because the amounts are almost the same at low velocities: $|R_{w(n)}| \approx |R_{rot(n)}|$.

They say, the indication would be the hit of a particle. No, at non-relativistic movements, the amounts are never the same but negligibly different. Now one meant to explain the differences of both metrics with the "blurring" of particle path. What has one done? One simply has put out the wavequantum interaction, located in the center of the atom nucleus and its vector sign $-\Delta R_{w(n)}$ ($-\Delta X$) pointing there, onto the path of the electron that vector $+\Delta R_{rot(n)}$ shows into the reversed direction. This mathematically made "electron bubble" from "electron powder", as an interpretation mistake honored with Nobel price, corresponds to the following concave mirror projection. Now the interaction hits were splashed and projected into the paths (seemable orbitals) and set equal with the electrons although they are not there at all.

In illustration 2.11;1 we explained the electron's "orbit" (electron shell) with its elementary magnet (arrow) around the atom nucleus where the nucleus magnet is neglected relatively the orbit magnet (largest arrow). Its tininess cannot be scaled drawn. Under it, the frequency distribution H of interactions is scaled that actually corresponds only to the field strength H without fortuity if there would not be some interaction. It is ordered to the way $R_{nucleus}$. This part of illustration had to be seen as rotation area. The higher the electron's velocity increases, the smaller is the amplitude of wavequantum $R_w$ although the rotation radius $R_{rot}$ hasn't become smaller. A curve with a rounded arch gets then a decreasing and two rotational maxima like shown in illustration.

An ideal circle has the gravitomagnetic and the electromagnetic center of 1h in the middle dot while at an ellipse, the same center of gravity of the quantum 1h is given with two rectified quanta 2 × ½h that are concentrated in the fire points of the ellipse. Here the rotating coordinate system would yield two bell-shaped curves next to each other but that don't go to zero in the middle. The partitioning of the effects has immense meaning for the reality of the chemical relationship.

Illustration 2.11;1: Contrasts of the Vectors in the Electron Path and in the Interaction Probability H




Explanations from German: Kern = Nucleus, Hülle = Shell.

The indication is made by the wavequantum hit with the distance $-R_w$ (-X) to the resting mass at $R_w = 0$ that does not interact itself. We ascribe the energy transfer to the wavequanta of any interactions. They convey the relations to the rest masses and rest charges under each other. Every relativity depends on the velocity in vacuum. It is the same in all cases: $\mathbf{v_{rot(n)} = v_{w(n)} \equiv v_{(n)}}$. . For the resting observer and the observer moved along eq. (2.12,8) and (2.12,8a) the terms are valid in vector form:

$$\boldsymbol{\hbar_{(n)} = m_B \times v_{(n)} \times R_{rot(n)} = m_A \times v_{(n)} \times R_{w(n)} = p_B \times R_{rot(n)} = p_A \times R_{w(n)}} \quad (2.11,1)$$

Corpuscular observation: the particle is rotating

**Wave potency** $\hbar_{(n)} \leq -\Delta m_{B(n)} \times \Delta v_{(n)} \times [+\Delta R_{rot(n)}]$ (2.11,2)

Wave opinion: The particle interacts by wavequanta

**Interaction** $\hbar_{(n)} \leq +\Delta m_{A(n)} \times \Delta v_{(n)} \times [-\Delta R_{w(n)}]$. (2.11,3)

In $R_{rot}$ the particle rotates; in $R_w$ the wavequantum amplitude X is drawn. The direction of both positions is reversed. The effect of the wavequantum always is on the opposite point B of the amplitudical distance where the particle draws the point A stopping or limited on its path (cf. section 4.6.).

**In that wavequantum order the wave momentum $p_w = m_w c$ is the same as the retardation momentum of the curved moved particle $p_A = m_A v$ . With the wavequantum amplitude $R_w$ or X, one just finds the relativistic and vectorial inversion of the rotation radius $R_{rot}$ of the particle.**

Comparing, we produce an electron beam that has a velocity of 500 m/s. Each electron got in the "middle" as it is said nicely the kinetic energy of $7.1071 \times 10^{-7}$ eV and also the radiation energy of $7.1077 \times 10^{-7}$ eV and the wavequantum energy of 0.85226 eV. Of course, we don't take care what curvature path every electron has located into this, because we haven't given them. The circumstances are working causally that we cannot comprehend in the single case: different velocities and radii are adjusted. In this respect, a multiple number of adjusted Planck levels are given in n = 1, 2,.... n. The wavequantum vectors of this beam do not lay in the infinity. Their interaction must reflect all possibilities of n at the diffraction. Consequently, the particles are not indicated after diffraction but those diverse positions of the elementary wavequanta according to Huygens principle in the shape of their radiation energy stopping the electrons. The wave length of an interacting radiation quantum $\Delta\lambda_{(n)}$ or that amplitude $\Delta R_{(n)}$ is larger or equal the wavequantum length $\lambda_{w(n)}$ or its amplitude $R_{w(n)}$ of the radiation potency. For example, its minimum relation at an non-diffracted wavequantum in the level of n = 1: the rotation of the electron in n = 1 leads to the wavequantum with the wavelength of $\lambda_{w(1)}$ = 1.45 µm at v = 500 m/s. If the electron of n = 1 is totally stopped, then it must give the radiation energy $\Delta E_{(n)}$ that corresponds to the total wave potency $\Delta\lambda_{(1)}$ = 1.45 µm. Only little energy leaps like the interaction at the gap lead to larger wave length and then to larger distances from the moved particle of which we don't know what level n it has. The new curvature makes the interaction on the indicator but also the reflected drawing of that n, which we don't know. But the electron itself hasn't hardly changed its path.

The angular velocity and the rotation radius of a charged mass remain contrarily variable conserving Planck's constant in 1ħ for example. If the electron should extend its rotation radius to expense of its angular velocity in the atom shell then this operation represents an oscillation, which is modulated above the ideal rotation – the rotation radius must fall again after it and the rotation velocity has to increase. In this respect, one can imagine the electron path was an ideal circle orbit acc. to Bohr's opinion that doesn't allow some deviation, because this effect must be equalized immediately after its appearance. Every deviation of it represents a stagnant wave on this orbit. Each position calculated from this state of the center $R_w$ of the wavequantum in $R_{rot} = 0$ must lead to the radial maximum that is reached at the ideal circle of Bohr's free of oscillations.

If an electron deviates in $v_{rot}$ and $R_{rot}$, it must equalize this deviation inside of **the single** circulation in the path, which corresponds to the perimeter u as wave length λ. Inside of the single Planck quantum, one equalized fluctuation up and down is allowed. This thought may not be changed with the so-called "uncertainty" for the products of momentum amplitude $\Delta p \times \Delta X$ and the energy period time $\Delta E \times \Delta t_x$ analogously (2.11,1). This blurring does not correspond to the real deviations of the orbits but the different positions of the wave amplitude $R_w$ (like we named it) over the amplitude difference ΔX (like it is named since Heisenberg) and of the wave period time $\tau_w$ over the time difference $\Delta t_x$. With the interaction wavequanta are exchanged: give me a wavequantum, and I give you back another wavequantum! (cf. Lucas 6,38). A one-way quantum transfer would have caused the change of the orbit. Though it has left like it was without changing the working force, however.

By reversed illustrating the solutions of wave mechanics instead of a **rotation area**, in which is the circular or elliptical orbit probably but in a flat orbit, a probability **orbital** as a space was created.

Albert Einstein: "The present generation of physicists [...] means in accordance to the present form of the quantum theory that the state of a system cannot directly but only indirectly characterized by giving of statistics of the measurement results achievable at the system; the conviction is predominant that the experimentally protected dual nature (corpuscular and wave structure) was only achievable by such an reduction of reality concept. I think that such a far-reaching theoretical renunciation is not

caused in the meantime by our real knowledge and that one shall not let stop himself to think the way of relativistic field theory to its final." (/Q 3/, page 127)

Einstein was nevertheless mislead of dual nature of wave and corpuscle. He could not extend his thoughts, because he didn't recognize that this phenomenon is just a unity of wave and magnet and that the corpuscle never was indicated. It was a "high" theory built on a brittle fundament! Where however is the orbit (path, train, track) radius of the electron? We have calculated below. The electron itself only can fluctuate one times in **1s-area** on a clear elliptic path of small eccentricity in 1λ at 1ħ between almost infinite and almost zero if at the same process the changed velocity of rotation and its radius are changing themselves in such a kind that the quantity 1ħ is not falling or exceeding. Each exceed of the condition nħ in eq. (2.12,8) that includes Bohr's quantum condition according to our theory in principle, is taken back by an underrun. Such a movement always shows an ellipse. But without some changes of the rotation radius and the rotation velocity, the special kind of ellipse – the circle – follows from that state.

Now one has to ask himself, why should the electron change its path? The answer of chaos theorists is given by the assumption, the particle could do all the things we haven't expected from its own chaotic will – just the accident. Our answer is: the accident does not exist without any arbitrariness of a subject, who is able for arbitrariness! The electron doesn't throw its own way! What chaos already plans the repurchase of its first step in its second step? The chaos in the head of human being shows it: individual reflection of mistakes and revocation trial with new components of mistakes. But if the law nħ is valid, then the compensation of each change of the path of each body, maybe it's a planet or an electron or a nucleon, is a **scheduled consequence**! The coordinates of an electron are determined by the surrounding fields of charges, masses and magnets, which transfer Planck's quanta. Then the quanta change the path for a short time after which the quantum has got an answer and the path was corrected again, unless it would have got a change at chemical bonding over a radiation of quanta, for example.

If Planck's constant nh and the rotating mass m remain constant, then the product $v_{rot} \times u_K$ at the rotation perimeter $u_K = 2\pi R_{rot}$ of the circle is given as constant:

$$nh = m_B \times v_{rot} \times u_K \; . \qquad (2.11,4)$$

The perimeter $u_E$ of the ellipse corresponds to the perimeter of the circle $u_K$ that middle velocity $\bar{v}_{rot}$ corresponds to the constant rotation velocity $v_{rot}$ on the perimeter of the circle.

Every ellipse that is changed compensating itself, by non-relativistic conditions it has the same area $A_E$ like the circle with $A_K$ on which these changes don't appear at all. Relativistically seen, the ellipse describes a rosette orbit (General Relativity Theory). The connecting line between ever a fire point 1 or 2 to the elliptically moved body forms the changing radius $R_1$ or $R_2$. If the distance 1-2 of both fire points is 2e (linear eccentricity) and the intersection point of the small half an axis b has been bend on the ellipse with the one of its fire points over its large half an axis a then are valid:

$$b^2 = a^2 - e^2 \qquad 2a = R_1 + R_2 \qquad (2.11,5)$$

$$A_E = ¼\pi \times a \times b \qquad A_K = ¼\pi \times R_K^2 \qquad (2.11,6)$$

$$A_E = A_K \; ; \qquad u_E = u_K \; . \qquad (2.11,7)$$

The extents also are like themselves. Well, a banal conversion of the elliptical area into a circular area is able to solve the problem where the particle rotates then. Therefore, every arbitrary ellipse of the condition nħ can be put down to the circle of the same condition.

This is actually the magic of Schrödinger's stationary wave. If the particle would alone be raised on a higher track, the conservation of energy like the conservation of momentum would be disturbed. But though inside of a single track circulation of an arbitrary particle like the electron around its atom nucleus to **every increase of the "orbit"** and its **guiding increase of velocity** must be a **decrease**

**of the "orbit" level with reduction of velocity** from which it will be possible to equalize the momentum difference $\Delta p$ and also the amplitude difference $\Delta R$ in its product
$\hbar = (-\Delta p+\Delta p) \times (-\Delta R+\Delta R) = 0$
the first for the momentum, the second for the frequency of the "emitted" wave:

$$p_{w(\text{stagnant wave})} = p_{above} + p_{below} = 0 \qquad R_{w(\text{stagnant wave})} = R_{above} + R_{below} = 0$$

$$p_{above} = m_A \times (-\Delta v) = -m_w c \qquad p_{below} = m_A \times (+\Delta v) = +m_w c \qquad (2.11,8)$$

**This particle does not radiate because it hasn't left its wavequantum nh!**

A swarm of particles shows a quantity of different wavequanta. So, the radiation law of Planck is confirmed (3.2.3,28) that always reflects a spectrum of frequencies to the highest frequency. Every wave energy is dependent on the rotation velocity v of a particle on its corresponding rotation path $R_{rot}$ then also it is corresponding to the kinetic gas theory with a spectrum of velocities of particles. This means: if 10 particles should be almost united into one ideal beam and only the localization of the rotation track would separate the beamed plane into 10 parts of each 36°, then the interactions would appear around the beam in an interaction tunnel by 10 indications. All the particles would have flown through the middle of the tunnel. Because practically, the curvatures and the positions of the curved paths can be very different, the interactions appear in the shape of indications within unpredictable radii and angles to each other. Only a probable maximum of the highest velocities at minimum radii is noticed after time. Nevertheless all particles were flown through the center of the indicator!

The less the orbit of the particle is curved with its rotation radius $R_{rot}$ diverging to infinite, if their velocity v diverges to light velocity c, the more the wave energy $E_w$ increases relativistically and the wave radius (the wave amplitude) of the indications $R_w$ is falling to zero although the movement radius $R_{rot}$ remained unchanged large. The indication reaches the nearness of the particle mass itself.

The vibration generator was called oscillator. Being a particle, it shall now stand for the **ideal donator** or the **ideal acceptor** of radiation energy $\Delta E_{(n)}$. Equivalent giving and taking of radiation energy means an equilibrium of universal forces. Equilibria only had to exist in cosm for a moment exchanging radiation quanta or inside a Planck level nh. Such a state of one moment would only be actual at analogous signal events. Every quantizing makes a difference. Only inside the same quantizing, one can postulate the state of one moment, because the possibilities consisting below them don't make leading another material measurement. The particle fluctuates inside its relatively narrow **movement area** around its coordinates with the condition to compensate each plus of wave energy by a minus of wave energy. A quantity of particles forms its **movement corridor** over its own movement areas.

A cosm oscillator carries an intrinsic frequency $f_B$ with eq. (2.4,49). If it is forced to oscillate relativistically slower by increasing velocity, then its intrinsic frequency is decreasing and with it its intrinsic energy $E_{Ao(EK)}$ to $E_{B(EK)} = E_{Ao(EK)} \times (1 - v^2/c^2)^{½}$ is diverging to the smaller energy of the receptacle cosm $E_{Ao(GK)}$ (cf. section 2.19.). After deceleration and retardation radiation, the oscillator vibrates faster relatively its reference system – its receptacle cosm. These are inner functions coupled with the outside by storing and transmitting of radiation energy from the cosm (Hamilton equation, see in section 2.4. equations 2.4,36a and 2.4,38).

Our theory makes an end with that opinion that a particle would be a probability wave itself. The start conditions velocity v and curvature radius $R_{rot}$ of particle movement determine the concrete position $R_w$ from that the wavequantum is radiated by the particle if the wavequantum of that particle will be diffracted and the wavequantum of a particle finally will be stopped at an indicator.

> Consequently, the indicator does not indicate the "position probability of particles" but the **interaction variety of working wavequanta** (of the working magnets), which are formed by the moved particles and react with the multiple number of wavequanta of particles of their environment (Huygens). Then the result looks like statistically measurable and could now get the name: **interaction probability**. Every single particle removes only one single interaction

in the distance of the wave amplitude $R_w$, which position in $R_{rot}$ is not predictable if it flies on a path without being able to indicate.

Though, the effect of braked wavequantum center $R_{rot(n)} = 0$ will be finally indicated on different wavequanta of the other moved particles. The reason of the terminology chaos is to find in crazy particle concept of “Quantum Mechanics”. We say: Every microcosm meets the indicator centrally but in only low spread. Every particle takes its definable track (path in orbit). It cannot be directly indicated, because its orbit magnetic vector transfers the energy. One surely can conclude from indication where the particle could have been probably as it started its interaction with the other particles by their special multiple numbers of the amplitudes $R_w$. Therefore, the indication cannot be identical with the position of the particle at the diffraction. Flying in a beam, all particles surely are never located at one common line point, because they have to carry a dimension of its microcosm by which only smallest phenomena of drift appear.

When a microcosmic particle hits an indicator, the wave potency converts itself together with the rest energy into a spectrum of retardation ray, which then is misunderstood as “particle wave", because the particle sends -, which never was a wave and which never will be a wave itself – in that moment of total braking e.g. its whole relativistic energy as radiation energy $\Delta E_{(n)}$. It produces new waves at the indicator particles wavequanta and becomes relatively resting particle itself again of corresponding rest energy $E_{Ao}$ or of absolute vacuum rest energy $E_{Aov}$! This particle itself never was a wave. The wording “position and momentum of a particle" wouldn’t be able to indicate with equal high precision covers the total problem. It must be cleared superficially:

> **The wave amplitude $R_w$ and the momentum $p_w$ of that wavequantum of a particle that is not able to be indicated are connected to a constant quantum of oscillation and therefore they aren’t able to be indicated with the same high precision.**

With this wording, we decide on philosophies of physics! Relatively to the section 2.4., one could save the whole problem of the discussion about the particle hits, because with the words of “Quantum Mechanics" anyway the real particle as cosm isn’t meant but its wavequantum working in this moment of the hit. This means that the electrons are moved very well around the atomic nucleus in Bohr's orbits (tracks, paths)... But Bohr’s shell model of orbits does not consider the electromagnetic variables of rotation velocity $v_{rot}$ and of rotation radius $R_{rot}$, which are related on $\bar{\mu}$ but it leads the gravitomagnetic radius referred on ħ of an ideal circular orbit. Nobody can check the classic result after that the charge and the mass of the electron adjust this orbit radius at first. Therefore, this cognition didn’t advance. Calculations only permit the interaction of the wavequanta. So, we want to stay with them and we don’t want to describe the magnets as particles anyway!

We assume an electron $e^-$ would fall with the distance of $R_{rot}$ to … the atomic nucleus $p^+$. Its initial velocity $v_{rot}$ would diverge to zero just like the acceleration $a_{el}$ there

$$a_{el} = \chi / (m_{gq} \times R_{rot}^2) \qquad \text{acc. to (2.5,6)} \qquad (2.11,9)$$

like $$a_{gr} = G \times m_{gq} / R_{rot}^2 \qquad \text{acc. to (2.19,1).} \qquad (2.11,10)$$

In curved coordinates of our cosm, the electron will reflect a relativistic state reaching the nucleus, which is dependent on the divergence of velocity $v_{(n)}$ to light velocity c, of rotation radius $R_{rot}$ to proton radius $R_p$ and of electric acceleration $a_{el}$ to infinite. It should pass the nucleus with these dimensions in the end. If we define like it is possible in microcosmic areas that the orbit always reflects one single Planck quantum h as $1ħ = m \times v_{rot} \times R_{rot}$ then the change of relationship $v_{rot}$ to $R_{rot}$ does not mean the negation of Planck’s condition. It cannot be fallen below although the velocity $v_{rot}$ changes and with it its momentum p and the acceleration $a_{el}$ of the particle do so. After passing of the nucleus, the particle must rise up on the initial coordinates in completion of its total orbit again. An extremely stretched elliptical orbit arises. If one calculates each of such an ellipse, of which there would be theoretically infinite possibilities, into a circular orbit one always gets the ideal Bohr's radius of the ideal circular

orbit. I's fact that in nature never ideal circular orbits may be expected because of the variety of interactions in multi-body problem but always **ellipses** approximately to a circular orbit in relativistic area of velocities.

**Each electron is moved on an elliptical orbit that is almost a circular orbit in the special case**.

Bohr's quantum condition isn't gripped well from the air. Provided that the particle isn't stopped completely at 1ħ to convert just exactly this 1ħ again, it is moved without radiation in curved orbits of the stagnant wave shape. This means: it doesn't give its effect 1ħ, because it isn't divisible: that particle climbs higher one times; then it must come deeper another times – that's an ellipse in which the fire point is the atomic nucleus [this reminds very much to the first law of Johannes Kepler (1571-1630)]. The first extension on 2ħ would also give an ellipse on the total amount of 2ħ. Only the decrease of 1ħ from 2ħ to 1ħ would radiate that difference while the ellipse of 2ħ would have been changed into the ellipse of 1 ħ. A real elliptical orbit has been changed there! Because of its immeasurable state, it is Schrödinger's turn now: the change fluctuations draw a non-measurable orbit with the character of a stationary wave by wavequantum. Yes, virtually, without some real change if no bonding energy has been radiated!

The superconductivity was explained as compensation of the spins – then of the wavequantum vectors (see section 2.3., page 307). Forming an electrical circuit by one electric charge being electromagnetically free of interactions undoing, some work $W_w = n \times h \times f$ superconductivity keeps standing on. An electrical circuit consisting of just one single Planck quantum 1 ħ only can work one times $\Delta W_w = 1ħ \times \omega$ (but it can have worked at itself made by the other work n ħ). The current doesn't flow anymore.

The wave energy $E_w = 1h \times f$ is totally converted into work $\Delta W_w$. In this respect, the orbit of a particle represents a feature of superconductivity from that a radiation quantum can follow only from the converting of one integer effect nħ. The state without radiation of such a movement around the atomic nucleus well, you don't have to explain particularly. It already is a fact with Planck and Bohr.

Inside of a Planck quantum 1ħ, the orbit can virtually vary. The larger the rotation radius $R_{rot}$, the larger is the wavequantum length $\lambda_w$ and the smaller is the wavequantum frequency $f_w$. From this, the wavequantum energy $E_w$ (or the work for installation of wave potency $W_w$) can have different magnitudes inside this Planck level with eq. (2.4,28), without in

$$\pm\Delta E_A = m_A \times \pm\Delta v \times c = h \times \pm\Delta f = h \times c / \pm\Delta\lambda$$

$$\pm\Delta E_B = m_B \times \pm\Delta v \times c = h \times c / \pm\Delta u_{rot} = ħ \times c / \pm\Delta R_{rot}$$

it would have sent a wave or received it if all the changes $\pm\Delta E,v,u,R$ are compensating themselves against each other! The velocity and the rotation radius decide about the amount of wave energy potency, which has to be equalized in the context of the stationary wave! Unconcerned of this equation, the electron rotates without radiation from its orbit, because Planck's quantum 1h remains unchanged referred on the wavequantum length $\lambda_w$ what means the rotation perimeter $u_{rot}$.

All the non-relativistic systems like also in microcosms work according to Kepler's laws:

"1. The planets move on ellipses, the Sun stands into the a fire point."
(/Q 5/, page 5)
The electrons move on ellipses, the atomic nucleus stands into the a fire point. …

"2. The driving ray sun-planet paints the same areas over within the same times (area rule: A/t is constant).

3. The squares of the periods behave like the 3rd potencies of the middle distances of the Sun: $T_1^2 : T_2^2 = r_1^3 : r_2^3$" (/Q 5/, page 95)

According to the second Kepler's law is valid now:

$$A_1 / t_1 = A_2 / t_2 = k_{(A,t)} \; . \qquad (2.11,11)$$

This function can be differentiated to: $k_{(A,t)} = dA / dt$ or

$$dA_1 / dt_1 = dA_2 / dt_2 = k_{(A,t)} \qquad . \qquad (2.11,12)$$

Integrated the differences are valid: $k_{(A,t)} = (A_2 - A_1) / (t_2 - t_1)$.

If the time change is small enough, one can regard the respective area as half an area dA of a parallelogram also into approximation where $ds_a$ is the increasing bow and dR is the radius change in differential term:

$$dA = ds_a \times dR / 2 \; . \qquad (2.11,13)$$

The velocity changing on the bend $ds_a$ is $dv = ds_a / dt$. We substitute $ds_a$ in (2.11,11):

$$dA = dv \times dt \times \tfrac{1}{2} dR \; . \qquad (2.11,14)$$

For the relationship of two partial areas $dA_1$ to $dA_2$ we divide the equations:

$$dA_1 / dA_2 = (dv_1 / dv_2) \times (dt_1 / dt_2) \times (dR_1 / dR_2) \; .$$

In agreement to Kepler, the constancy (2.11,11) is valid from which is following:

$$1 = (dv_1 / dv_2) \times (dR_1 / dR_2) \; , \qquad (2.11,15)$$

Now here is the comparison with the wavequantum condition (2.12,8) $n\hbar = m \times dv \times dR$ that two relativa we divide for equal n:

$$n \hbar_1 / n \hbar_2 = (m_{B1} / m_{B2}) \times (dv_1 / dv_2) \times (dR_1 / dR_2) \; . \qquad (2.11,16)$$

Inside of this single and concrete Planck level determined by n, the constant quotients $n\hbar_1 / n\hbar_2$ behave to each other as you can see below, under ignoring of relativistic corrections of both resting masses $m_1 / m_1$, but which are differently dilated on $m_{B1}$ and $m_{B2}$ ($m_{B1} \approx m_{B2}$), or at velocities of small relativity:

$$\mathbf{k_{(h)} = (dv_1 / dv_2) \times (dR_1 / dR_2) = 1} \; . \qquad (2.11,17)$$

Conclusion: Kepler discovered the quantization of the gravitation in non-relativistic form without being able to declare this to his time! Every planet moves under ignoring of the non-relativistic corrections with its velocity on its wavequantum orbit, which is drawn by $n\hbar$. So each wavequantum leap (jump) also means the irradiation or the reception of gravitational wavequanta and the change of the elliptical orbit into a new wavequantum orbit $(n-x)\hbar$. But n has reached colossal extents, if we calculate the Earth:

$$n = m_E \times v_E \times R_E / \hbar \approx 5.9742 \times 10^{27} \text{ kg} \times 29780 \text{ m/s} \times 1.4959787 \times 10^{11} \text{ m} / 1.05458866 \times 10^{-34} \text{ Js}$$

$$n \approx 2.5237527 \times 10^{77} \; . \qquad (2.11,18)$$

dimensions (sizes, cf. Q 4/, page 92).

Relativistic deviations move in dilation dimensions of about $5 \times 10^{-9}$ because of the dilated mass. Because of the weak working relativity of movement – also with small velocities – corrections are given that Einstein could bring into physics.

We push the Earth. It must take a new orbit, naturally again an elliptical orbit. In thank of the high number n of more than $10^{77}$, almost analogous signal transitions have shown. This is quite different on the orbit of the electron with n = 1. Every momentum itself is quantized. A quarter momentum varying the ellipse of the electron does not exist, because of $p = m \times v = hf/c$. Then the change of the electron orbit becomes to a **binary** decision: either being or being no longer. This is the whole joke of the integer jumps in the context of the Planck's constant!

We don't discuss the 3rd Kepler's law, which represents a coarse approximation closer.

Relativistic observation of the real electron orbit

According to Niels Bohr (1885-1962) who calculated in 1913 the orbit radii $R_{(n)}$ of electron $e^-$ in hydrogen atom $^1H$ worked with atomic reference dimensions in his classic model, we state:

Bohr's hydrogen radius $R_{(1)}$ with the constant $\in^2$

$$R_{(1)} = \hbar^2 / (m_e \times \in^2) \qquad \in^2 \equiv e_o^2 / (4\pi\, \varepsilon_o) \qquad (2.11,19)$$

With eq. (4.6,9) and (2.6,2) we get:

$$\varepsilon_o = M_{gq} \times m_{gq} / (2 \times k_q^2 \times h \times c) \text{ and } \qquad m_e = \hbar / c\, R_e\,, \qquad (2.11,20)$$

which lead to the coupling constant $\alpha_q$:

$$\alpha_q = m_{gq} / M_{gq} = 2 \times h \times c \times \varepsilon_o / e_o^2 \qquad (2.11,21)$$

Bohr's reference energy $2E_{(1)}$ is then:

$$2E_{(1)} = - \in^2 / R_{(1)} \qquad (2.11,22)$$

**$E_{(1)} = -13.6058$ eV .**

Intrinsic values of the Schrödinger equation of the energy in that levels n and l give the result:

$$E_{(n)} = E_{(1)} / (n + l + 1)^2 = E_{(1)} / n^2\,. \qquad \text{(/Q 12/, page 183)} \qquad (2.11,23)$$

Because of the coupling constant $\alpha_q$, we get the non-relativistic radius $R_{(1)}$ and the velocity $v_{(1)}$ ordered to it:

$$R_{(1)} = R_e / \alpha_q \qquad v_{(1)} = c\, \alpha_q \qquad (2.11,24)$$

$$R_{(1)} = 5.291772 \times 10^{-11} \text{ m.}$$

$$v_{(1)} = e_o^2 / 2\, h\, \varepsilon_o = c\, \alpha_q = 2.187691 \times 10^6 \text{ m/s} \quad \text{with} \quad \alpha_q = 1/137{,}0360. \qquad (2.11,25)$$

The energy $E_{(1)}$ is expressed as Rydberg frequency $R_{f\infty} = 3.289842 \times 10^{15}$ Hz or as Rydberg constant $R_\infty = 10973731\ m^{-1}$, which represent the reciprocal wave length $\lambda_\infty = 9.112671 \times 10^{-8}$ m. It has -13.6058 eV. (/Q 12/, page 183f)

The mass of the rotating proton along has to be taken into account and gives the Rydberg constant $R_H$ of hydrogen:

$$R_H = R_\infty / (1 + m_e / m_p) = R_\infty\, m_p / (m_e + m_p)\,. \qquad \text{(/Q 12/, page 183f)} \qquad (2.11,26)$$

$m_p = 1836.1525 \times m_e$ ,

$R_H = R_\infty /(1 + 1 /1836.1525) = R_\infty / f_H$ , expressed by wave lengths:

$\lambda_H = \lambda_\infty \times f_H$ ; (2.11,27)

$f_H = (1 + 1 /1836.1525) = 1.000544617$ . (2.11,28)

With our results of the electron resting mass $m_e$ and the proton rest mass $m_p$ in contrast to the used literature (there 10967769 $m^{-1}$) the corrected value becomes to

$R_H = 10967758\ m^{-1}$ ; $\lambda_H = 9.117634 \times 10^{-8}$ m

with the reduced energy: **$E_{A(1)} = 13.5984$ eV** .

That energy $E_{A(1)}$ shall have met the reality. The amount can be determined as well of "Quantum Mechanics". A clear way with relativistic conditions till now one couldn't go. Our trial is here:

The given magnitudes of the radius $R_{(1)}$ and of the velocity $v_{(1)}$ mean a veiling of special relativity of mass. If we reduce the rest mass around $f_H$ and the velocity has been adjusted from $v_{(1)}$ on $v_{(1)}$, then the radius must increase now.

Two positive charges lay in the proton close to each other. The negative protocosm is in opposite side. In this relation, the proton shows the electron its positive face, the electron has only a negative face. The particles would face with facing by face. Both sides give the distance to the gravity center of their masses in the magnitude of their intrinsic amplitude including the vacuum spheres $2R_p$ and $2R_e$. In this cohesion, each distance of charges on their orbit is dependent on the amplitudes of the moved particles. The larger the rotation radius $R_{rot(1)}$ relatively the Bohr's radius $R_{(1)}$ the smaller is the circulation velocity $v_{(1)}$, which is determining the relativistic mass difference $\Delta m_{A(1)}$ that corresponds to the real energy level $\Delta E_{(1)} < E_{(1)}$. The equation (2.11,26), which above is given with the masses, here is becoming clearly to (doubling factor is shortened) that way:

$$R_H = R_\infty R_e /(R_e + R_p) = R_\infty / f_H. \quad (2.11,29)$$

With the equation (2.11,1), the energies of the levels can be converted into rotation radii. They give an image of the real orbit of the electron.

Because now for the rotation radius is valid: $R_{rot(1)} > R_{(1)}$, the mass reduction has to be taken into account to make the equations (2.11,19) and (2.11,20):

$$m_{e(1)} = m_e / f_H \quad \text{with} \quad f_H = 1.000544617 . \quad (/Q\ 12/, \text{page } 184) \quad (2.11,30)$$

If one calculates with the eq. (2.11,1), all the rotation radii of the hydrogen atom on n = 1 dependent on velocity v with the rest mass $m_e$, then one gets the minimum distance in the shape of the double electron amplitude $2R_e = 7.7232 \times 10^{-13}$ m (see section 4.5.) with the velocity of $v = 2.120 \times 10^8$ m/s. It corresponds to the coupling constant $\alpha_1$ between the electron and a certain middle dot of proton mass. The electron forms with the distance of $2R_e$ both the amplitude and the vacuum sphere. Both spheres together give the horizon of the particle. Now it touches the middle dot of its rotation. If one now takes into account the extension of proton mass like we know it in the shape of its amplitude $R_p$, which is 1836.15 times smaller than the electron amplitude, then the distance must be made larger with 1/1836.15 of the electron horizon $2R_e$ and the rotation masse has to decrease with the same factor:

$$R_m = 2R_e + 2R_p = 2R_e (1 + 1 /1836.1525) = 2R_e \times f_H. \quad (2.11,31)$$

If the deepest deviation of the orbit, this correction of all orbits must follow this change. With the reduced mass, we really find the minimum distance of $R_m = 7.72739 \times 10^{-13}$ m with the velocity $v_{rot} = 2.120 \times 10^8$ m/s. Exactly this relative increase of the distance with (2.11,19) means the decrease of the theoretical energy level $E_{(1)}$ onto the real level $\Delta E_{(1)}$.

We connect Bohr's magnitudes in term 1 to Planck's condition and set them equal to our relativistic conditions for these two points of view of observers – moved along in term 2, relatively resting, or indicating in term 3:

$$1\hbar = m_e \times v_{(1)} \times R_{(1)} = m_{eB(1)} \times v_{rot(1)} \times R_{rot(1)} = m_{eA(1)} \times v_{rot(1)} \times R_{w(1)} , \qquad (2.11,32)$$

term 1 term 2 term 3

$$1\hbar = m_e \times v_{(1)} \times R_{(1)} = m_e \times W_{SRT} \times v_{rot(1)} \times R_{rot(1)} = m_e \times v_{rot(1)} \times R_{w(1)} / W_{SRT} .$$

The first term covers the special relativity $W_{SRT} = (1 - v_{rot}^2/c^2)^{½}$ in the product of velocity $v_{(1)}$ with radius $R_{(1)}$.

That mistake can be seen at the calculation of the relativistic mass or energy difference $\Delta E_{(1)}$ with the velocity $v_{(1)}$, which does not hit the real $v_{rot(1)}$. It deviates with $-5 \times 10^{-4}$ eV from -13.6058 eV:

$$f_{SRT} = 1/W_{SRT} \approx 1.0000266267 \qquad \Delta E_{(1)} \approx -13.6063 \text{ eV } /c^2. \qquad (2.11,33)$$

Consequently, the apparent non-relativistic product term, which is giving the realistic value $E_{A(1)}$ after mass correction, has to be corrected into three features: 1st on the really working mass $m_{e(1)}$, 2nd on the real velocity $v_{rot(1)}$ and 3rd on the real radius of wave amplitude $R_{w(1)}$. Because of the tree times unknown $v_{rot(1)}$, $R_{rot(1)}$ and $R_{w(1)}$ we firstly show the working tendency:

$$m_{e(1)} \times v_{(1)} \times R_{(1)} = m_{e(1)} \times v_{rot(1)} \times R_{w(1)} / W_{SRT} = m_{eA(1)} \times v_{rot(1)} \times R_{w(1)} ; \qquad (2.11,34)$$

$$v_{rot(1)} < v_{(1)} \qquad R_{w(1)} < R_{(1)} < R_{rot(1)} \qquad m_{eA(1)} > m_{e(1)} ;$$

$$\Delta R_{w(1)} = R_{(1)} - R_{w(1)} \qquad \Delta R_{rot(1)} = R_{rot(1)} - R_{(1)} \qquad \Delta R_{w(1)} < \Delta R_{rot(1)} .$$

Corresponding to the thought of balanced oscillation, R and v could be diverge arbitrarily out of each other. Because of Bohr's force condition on an orbit, there cannot be such a state of electron movement made chaotic and continued to the infinity. The relativity remained unconsidered has to be included now by relating of velocity by the relativity root itself. This can be calculated from the kinetic energy:

$$E_{kin(1)} = \chi / 2R_{(1)} = m_e \times v_{(1)}^2 / 2 = m_{eA} \times v_{rot(1)}^2 / 2 \qquad (2.11,35)$$

$$v_{rot(1)} = v_{(1)} / (f_{SRT})^{½} \qquad \text{with} \qquad m_{eA} = m_e \times f_{SRT} . \qquad (2.11,36)$$

Since the relativity of the new velocity isn't known yet, but it will be deviating only a small value, we approximately multiply with the relativity factor $f_{SRT}$ of the velocity $v_{(1)}$ and we get:

$$v_{rv(1)} = v_{(1)} / 1.000013313 = 2187662 \text{ m /s}.$$

With that velocity the reduced electron mass $m_{e(1)}$ is moving on its orbit. If we set the product $v_{rot(1)} \times 1.0000133$ into eq. (2.11,34) for $v_{(1)}$ then the mass $m_e$ can be extended with the factor 1.0000133:

$$m'_{er(1)} = m_e \times 1.000013313 / f_H = 510731.7 \text{ eV}/c^2 .$$

That mass $m'_{er(1)}$ has been remained non-relativistically. If it would be the relativistically increased indication mass of the type $m_A$, like expected, which would consist of $m_o \times f_{SRT}$, we had to divide by the relativistic factor $f_{SRT}$ for setting free the real rest mass $m_{er(1)}$:

$$m_{er(1)} = m'_{er(1)} / f_{SRT} = 510718.1 \text{ eV}/c^2 .$$

The relativistic difference of masses $\Delta m_{er(1)}$ leads to the emitted mass (energy) after deceleration:

$$\Delta m_{er(1)} = m_{er(1)} - m_{er(1)} \times f_{SRT(1)} \qquad (2.11,37)$$

$$\Delta m_{er(1)} = m_{er(1)} (1 - f_{SRT(1)}) = -510718.1 \text{ eV}/c^2 \times 0.000026626$$

$$\mathbf{\Delta m_{er(1)} = 13.5984 \text{ eV}/c^2 .}$$

It agrees with the corrected Rydberg constants conversion (2.11,28). The rotation radius $R_{rot(1)}$ one can calculate from the wavequantum amplitude $R_{w(1)}$ and the square of the relativity root $W_{SRT}$, which is caused on the velocity $v_{rot(1)}$:

$$R_{rot(1)} = R_{w(1)} / W^2_{SRT} . \qquad (2.11,38)$$

Conclusion: in the hydrogen atom the electron is really running on the orbit with the coordinates:

$v_{rot(1)} = 2187662$ m /s

$m_{er(1)} = 510718.1 \text{ eV}/c^2 = 9.10445 \times 10^{-31}$ kg

$m_{erB(1)} = 510704.5 \text{ eV}/c^2$

$m_{erA(1)} = 510731.7 \text{ eV}/c^2$

$R_{rot(1)} = 5{,}294936 \times 10^{-11}$ m

$R_{w(1)} = 5{,}294654 \times 10^{-11}$ m ;

$1\hbar = m_{erB(1)} \times v_{rot(1)} \times R_{rot(1)}$

$1\hbar = m_{erA(1)} \times v_{rot(1)} \times R_{w(1)}$

An energy difference can generally be represented without consideration of the supplementary spin term in the Hamilton operator as:

$$\Delta E_{(n)} = E_{Ao(e)} [1 - 1 /(1 - v_{rot(n)}^2 /c^2)^{1/2}] \qquad (2.11,39)$$

or

$$\Delta E_{(n)} = E_{Ao(e)} - E_{A(n)} . \qquad (2.11,40)$$

n means: from n = 1 to the proximity of the nucleus to the quantized level at the height of the receptacle cosm. We therefore see the energy differences, which have been sent or received, in another light:

**The taken energy difference of $\Delta E_{(1)}$ between n = 1 and n to "infinite" (receptacle cosm) can be explained as a relativistic magnitude of relative adjusting of the resting position of the micro-cosm.**

Vice versa, the taken energy difference of $\Delta E_{(1)} = -13.5984$ eV represents the relativistic magnitude of relative movement of electron cosm between n to "infinite" and n = 1. Each step n between them that is also dependent on the steps of charge adjusting over the e. m. momentum $\bar{\mu}$, also can be seen as a relativistic effect. Each partial step to the relative rest is one step of quantizing of $n\hbar$. The same happens in the atomic nucleus (cf. section 4.9.) and in a cosm with its protocosms (cf. sections 4.1. to 4.3.).

The classic procedure uses the potential energy $W_{pot}$. Now we want to see like one can set in the given base with the help of our magnitudes.

The potential energy is reached in its maximum, if the electron is elevated up on a far position from the proximity of the atomic nucleus. At first, we elevate it from the nucleus into the proximity of the receptacle cosm radius $R_{o(GK)}$ with the elementary distance $R_{o(EK)}$ :

$$W_{pot} = \chi \int_{R_{o(EK)}}^{R_{o(GK)}} dR / R^2 \qquad \chi = k_o e_o^2 = 2.3071144 \times 10^{-28}\ Nm^2. \qquad (2.11,41)$$

We need the smallest distance $R_{o(EK)}$ of both charges at the start of the elevation. In electron, the charge is rotating on half the amplitude $½R_e$ like also in proton on $½R_p$. Our theory derived the oscillation sphere. It represents the shortest separation of two coupling cosms. The electron mustn't dive into the proton, otherwise the coupling already would be valid with $\alpha_3$. Therefore, the oscillation spheres touch themselves. The charge of the electron reaches down on the maximum of the distance of the oscillation sphere $R_e$ while the charge of proton just shows the distance of its intrinsic oscillation sphere $R_p$. In this respect, one had to add both oscillation spheres: $R_V = R_e + R_p$. Then the shortest distance of charge centers has the value of $R_{o(EK)} = R_V = 3.8637 \times 10^{-13}$ m. The largest distance could be reached on the amplitude of universe $R_U$: $R_{o(GK)} = R_U = 5.303683 \times 10^{25}$ m. We get:

$$W_{pot(0...\infty)} = \chi / R_V - \chi / R_U = 3{,}726.94\ eV - 2.7 \times 10^{-35}\ eV = 3{,}726.94\ eV.$$

The wave potency, which must be like the De Broglie energy should express itself in this. The finiteness therefore lets itself be seen in our theory here! We raise the electron up to the amplitude now (we don't raise it up to the rotation radius):

$$W_{pot(0...1)} = \chi / R_V - \chi / R_{w(1)} = 3{,}726.94\ eV - 27.1968\ eV = 3{,}699.7432\ eV;$$

Bohr's theory decreases from the level of infinite $R_\infty$ to n = 1, because it doesn't know the universe amplitude and gets the value of $W_{pot(\infty...1)} = -27.1968$ eV. The relativistically kinetic energy has to be added to this:

$$W_{kin(1)} = m_{erA(1)}\, v^2_{rot(1)} / 2 = 13.5982\ eV\ ;$$

$$\Delta E_{(n)} = W_{pot(0...1)} + W_{kin(1)} = \mathbf{-13.5986\ eV}.$$

This confirms our following way of thinking. Inside the cosm, a rest mass or a rest charge cannot emit its relativistic change, which it got by motion changing. Their primary wavequanta do not allow some distinction or any indication. An electric charge of the supernumerary protocosm rotates along the oscillation and forms the magnetizing of vacuum. If the e. m. effect is asymmetric, it can work to the outside and there it can exactly project the inner change of mass oscillation to the outside electromagnetically. Here, the rotation relationships have to be taken in account like the gyromagnetic momentum of the electron and the rotation of the proton with its charge (multiple protocosms).

Well, if a charge and also a magnetic field are balanced, nothing then can work to the outside. Whenever the charges are compensated and when only the magnetic field works additionally, then there is already an e. m. projection of those charges in vacuum. That change will be answered exactly with the change of the e. m. wave energy like at an open charge.

Well, the rotating charge and the magnetic field transfer the analogon of the mass change as e. m. radiation from level to level changing the cosm movement:

$$\Delta m_{(n)} = m_o \left[1 / \sqrt{(1 - v^2_{1(n)} / c^2)} - 1 / \sqrt{(1 - v^2_{2(n)} / c^2)}\right] . \qquad (2.11,41)$$

In this respect, the rotation of electron charge in electron cosm becomes to an oscillation movement during its circular movement, which up and down doesn't run chaotically but exactly and controlled. That oscillation is flat and not spatial like Schrödinger expected. Well, we don't come onto orbitals model imaginations but onto areas of paths (tracks, circular ways, planes) anymore.

Our considerations should prove that the calculation of the wave energies is possible without a spatial and statistical modeling of the orbital. The chemistry has let the model get to an essential pillar to the illustration of its bonding in the meantime since its mathematical basis is correct, however. Our thesis presented at the beginning connects the model imagination of electron repulsion especially electron pair repulsion with the model adopted by us of the magnetic coupling of the electron orbits. We favor the coupling of the wavequanta and their magnetic properties in the plane.

Two electrons are then able to stay together, if they are coupled by their wavequanta with each other. Nothing runs by themselves because of their repulsion. Activation energy only couple both things. Why is no common orbit be formed on which the electron pair is orbited into one approximately? The planes of the ellipses interact over their half the magnets in the fire points. At this, they push their two atomic nuclei into two other remote fire points. The electrons just go on repulsive distant orbits.

In the obvious fire point, the planes couple by the locally incomplete compensation of their half the orbit magnets being there and by the following radiation of light quanta (the repulsion of gravitomagnetic vectors works to the complete congruence of the electromagnetic forces). This event corresponds to the annihilation of particles/ antiparticles like wavequanta and their relative complementary states. Fermi-spin escapes both into a wavequantum vacuum. At their place, the addition of amounts leads to both wavequanta to be emitted. The remaining half the spins provide now even the cause of the reduced affinity of such types of bonding, because they have compensated both contrary effects in wide surroundings when the difference of electronegativity according to Pauling law goes to zero. Such an orbit is given in hydrogen molecule. Hydrogen molecules are less affine than atomic hydrogen. If an electron pair however had circulated in the same direction on a common orbit, the orbit momentum ought to have appeared doubled unlike the reality.

The helium atom can be valid as eloquent example of the theory of the noble gas configuration in the shell levels. A characteristic may not be overlooked: every orbit s, p, d, f can only be filled with the maximum of two electrons in contrary spin:
$1s^2$, $2s^2$, $2p_{-1}^2$, $2p_0^2$, $2p_{+1}^2$, $3s^2$, $3p_{-1}^2$, $3p_0^2$, $3p_{+1}^2$, $4s^2$, $3d_{-2}^2$ .... The electrons strive for accepting the configuration of helium atom, if they only were singles. But this aim they never can reach, because their atomic nuclei cannot be united. Consequently, the expedient of hydrogen molecule remains.

Even in an ion bonding like in sodium chloride after losing the electron, the sodium has now five energy levels ($1s^2$, $2s^2$, $2p_{-1}^2$, $2p_0^2$, $2p_{+1}^2$, $3s^0$) that are similar to the shell of the hydrogen molecule. The electron lost from sodium atom fills up the shell of chlorine to the ninth analogon of the helium atom ($1s^2$, $2s^2$, $2p_{-1}^2$, $2p_0^2$, $2p_{+1}^2$, $3s^2$, $3p_{-1}^2$, $3p_0^2$, $3p_{+1}^2$). In accordance, the electrostatic forces of ions are working. We had to conclude:

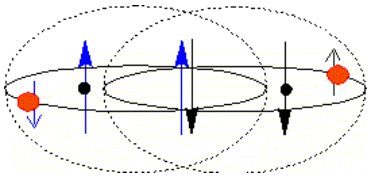
> Every chemical covalence appears as an analogon of the electron shell of the hydrogen molecule. With increasing polarity of the substance, this kind of shell strives to the analogon of the shell of the helium atom. It finally has reached it in the ion bonding.

Well, a pair rule is rather valid here how we recognized it at the construction of protocosm orbits in receptacle cosm. We find the same legitimacies in the electron shell. An atom is certainly the illustration of an incomplete and open microcosm. Electrons charged positively (which are not objectively given in this world; there are only antimatter electrons charged positively) and the property of anticollapse are missing.

Well, two orbits lay in one plane. Each orbit will be pressed to the ellipse by repulsion of its electron. Each in one fire point of both ellipses, helium nucleus is placed. Both ellipses press after a radial difference of their orbit radii, because of their electron repulsion. In the same measurement, the velocity is varied to keep the wavequantum. The orbit vectors lay contrarily and additionally like the spins to the magnetic field circle. This causes the contrary rotation of both electrons on ellipses. Such a system of magnetic vacuum coupling is almost perfect.

Illustration 2.11;2: Helium shell

Illustration 2.11;3: Shell of the molecular hydrogen



The following difference between helium and molecular hydrogen is working: the atom nuclei don't lay in one common fire point but in those fire points far away of the ellipse orbits. Every electron orbit works repulsively no matter if it is a single or a pair. Therefore it isn't erroneous to refer the present knowledge of hybridization of "orbitals" on the bonding areas in similar feature. At this, the energies of the areas shall be brought into line.

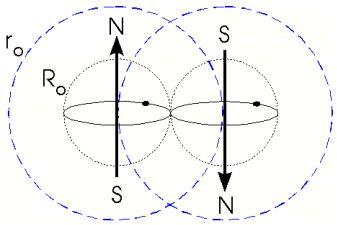
There are three elliptical ranges at the carbon in the ordinary case: $2s^2$ looks like helium. Both of $2p^1$ areas lay contrarily vertically. If now one animated 2s-electron leaps into the third 2p-area, then there are four elliptical orbits. Here the first step of hybrid formation seems to be made named promotion. Though we assume because of magnetic working that only these three 2p-levels will hybridize while the 2s-level will be kept. According to our opinion, these three elliptic p-areas yield a magnetic circle. It is disturbed by the electrostatic field of the 2s-electron. In this respect, a repulsion tetrahedron is conceited. It has an equilateral triangular base where these three 2p-areas close their magnetism. That 2s-area stretches out and gets free degrees of rotation. Only then if this carbon state goes bonding at first, the magnetically open and therefore more affine 2s-levels will couple even with each other to ethane $H_3C\text{-}CH_3$. Here the relationship is freely rotatable, because the binding area co-rotates.

If the carbon ties the hydrogen to its area $2s^1$, then a further hydrogen atom has to brake the magnetic circle of these three 2p-levels at one position. Than it has happened: the intermediate product is radically reactive. The bonding with the last two 2p-levels must be completed to methane $CH_4$.

If we start for explanation of ethene $H_2C{=}CH_2$ from the fourfold splitting of the electrons into the tetrahedron, then we can lead together both C-atoms over a σ-bonding of s-areas. Each two electrons remain for bonding with four hydrogen atoms in a σ-bonding and two magnetic fields to the π-bonding, but which is spatially given into a larger distance as this was possible at the first bonding between both C-atoms. So it actually becomes the special bonding. Well, the second coupling is actually slack like chemists say. If at a C-C-bonding only two hydrogen atoms would bond to ethine $HC{\equiv}CH$ ($C_2H_2$) then the magnetic circle of 2p-electrons is broken. They have to couple with each other in the π-bonding.

If three ethine molecules have been bond, then their inner angles are adjusted on more than 120° and the coupling force of their π-bonding represents the benzene molecule $C_6H_6$. It was said the orbital model only could explain the benzene ring. Here is our model: in the course of the representing of benzene from ethine at each second bonding, we find s-s-σ-bonding. Between them we find three times the p-p-σ-bonding. How Kekulé (1829-1896) showed, each second C-atom now would be coupled by a double bond (134 pm). In reality, the six remaining 2p-ellipses form a magnetic circle, which is pressed into the center of the hexagon by the attraction (139 pm; simple bonding: 154 pm). The electrons will rotate so that they escape the highest repulsion. A double bond can be assigned to none of the mutual bonding in the real sense here, because they immediately are bonding with two adjacent orbit magnets again. In this respect, the benzene bonding is a special bonding, which isn't comparable with the π-bonding at ethene or ethine. One could compare this kind of π-bonding to the feature of "half the bonding", because they have to be divided magnetically. In the meanwhile, those electron pairs of bound six hydrogen atoms push to the outside. Illustration of complete and regular hexagon will be rather real, now. When p-electrons come into the magnetic circle, they let shift them by magnets sensitively, and then they generate a relatively electric current on both sides of the binding area.

Illustration 2.11;4 : Apparent Spherical Coupling of Wavequanta of Both Electron Orbits




Schrödinger's model gave real values of hydrogen. However, he had accidentally found an anticipation at the coupling of real cosms. If the wavequanta would be such spherical cosms of their amplitudes, the coupling looked like illustration 2.11;4. The distance of the nuclei would be two times of 53 pm, these are 106 pm. Really, the measurement is at 74 pm. Wavequanta don't still close the interaction cosm. Consequently, we can leave out the sphere $r_o$.

Those spheres $R_o$, which are amplitudes $R_w$ now, are coupling as if they would be analogously to event horizons $r_o$. They try to dive into each other until the center is reached. We found 53 pm. But the repulsion of the nuclei works against this state. That building will be elliptically distorted like seen in illustration 2.11;3.

## 2.12. Cosm Momentum and Magnetic Momentum

Each cosm oscillation reflects Planck's constant h with integer 1 × h during two consecutive pulses of spacetime, which corresponds to the oscillation length $\lambda_o$. Reflections of this double pulse behavior of the cosms with an integer Planck constant prove half the number state as a wavequantum of electric feature: on a gravitationally single primary pulse, which corresponds to half a period and to ±½h, a charge is rotating while forming an electromagnet calculated into half a spin of magnetic momentum ±½μ. Wavequanta are fundamentally connected by arbitrary integer numbers of n × h. The integer and real number n grafts onto the amount of h its vectorial character additionally. Objectively, cosm's and wavequantum's momenta are already the natural vectors **h** and **μ**.

Because of (2.4,24), the equation (2.9,26) can be described into:

$$n \times \mathbf{h} = \mathbf{h}_{(n)} = 2\pi \times R_{w(n)}{}^2 \times \mathbf{m}_{w(n)} \times 2\pi \times f_{w(n)} \; . \qquad (2.12,1)$$

With the converting of wave length (2.10,19) now, here is the vectorially formed equation:

$$\mathbf{h}_{(n)} = \lambda_{w(n)} \times \mathbf{m}_{w(n)} \times c_{w(n)} \; . \qquad (2.12,2)$$

The vectorial wave length or the wavequantum arc $\lambda_w$ is also the same like the circle way that has an orientation by the direction in the sense of a perimeter u, which the moving mass or antimass **m** takes writing the wavequantum of its wave mass $\mathbf{m}_w$. The direction of this circular current is forming the vector. If one divides this equation by 2π then this procedure leads to the amplitudical function $\boldsymbol{\hbar}$ with the wave amplitude or the wavequantum radius $R_w$ :

$$\boldsymbol{\hbar}_{(n)} = R_{w(n)} \times \mathbf{m}_{w(n)} \times c_{w(n)} \; . \qquad (2.12,3)$$

**THE COSM MOMENTUM**

For $n = 1 \equiv n_{(1)}$ the cosm momentum follows:

$$1\mathbf{h} \equiv \mathbf{h}_{(1)} = \mathbf{m}_o \times \mathbf{c}_v \times \lambda_o \; : \qquad \textbf{cosm spin}. \qquad (2.12,4)$$

We define: Planck's constant $\mathbf{h}_{(1)}$ is valid to be the **cosm momentum** of cosms and anticosms. This is a primary and elementary quantized magnetic momentum, which only can be seen or observed as monopoles.

It was programmed by its isolated oscillation on two following pulses behind each other in the cosm, which are signed by the idealized orbit of the parity orbit radius of $\mathbf{½R_o}$. For the perimeter of the parity orbit $u_{(PK)}$ of the protocosm in n = 1 of its receptacle cosm, which must be rolling two times to find the same starting conditions, is valid:

$$u_{(PK)} = 2\pi\, R_{rot(PK1)} > K_o = ½\, \lambda_o = \pi\, R_o\,, \tag{2.12,5}$$

$$\boldsymbol{\hbar}_{(1)} = \mathbf{m}_o \times c_v \times R_o\,. \tag{2.12,6}$$

Cosms are **primary bosons**, Wavequanta are secondary bosons.

The cosm momentum isn't reversible like the character of mass in the field of receptacle spacetime as agreed: a positive cosm momentum +ħ signs a positive mass (coino-mass or ordinary mass), and a negative cosm momentum -ħ does it with a negative mass (antimass). Cosms and anticosms are oscillating in contrary movement functions.

The amplitude $R_o$ seems to be like a subparticle would rotate in the receptacle particle around the internal center of gravity with the permanent radius $R_o$. Instead of this real procedure, the circular arc of the perimeter of $\lambda_o = 2\pi R_o$ is inscribed a twofold sequence of operations with two circular ways of each $½\lambda_o$ , which is mathematically and geometrically seen the same magnitude with the same effect (see illustration 2.9;2, page 367).

But if an isolated and charged particle should rotate absolutely and exactly on half of the receptacle cosm amplitude $½R_o$ then this one would reflect an electric half spin of a wavequantum $½\bar{\mu}_{(n)}$ at all – comparable with the electron noticed while Stern-Gerlach experiment. The absolute rotation on $K_o$, which would correspond to Bohr's magneton, does not really exist. Because of a larger dimensioning, the realistic gyro-electromagnetic moment arises.

**THE WAVEQUANTUM MOMENTUM (THE ELEMENTARY MAGNETIC MOMENTUM)**

We get a wavequantum (n = 1, 2 , 3, ... ) of the resting and detecting observer of the interaction:

$$\boldsymbol{\hbar}_{(n)} = \mathbf{m}_{w(n)} \times c_w \times R_{w(n)} \tag{2.12,7}$$

The factors $\mathbf{m}_{w(n)} \times R_{w(n)} = \theta_{(n)}$ = const. form a variable unity from themselves.

With eq. (2.4,29), we get the next eq. of the resting and detecting observer of that interaction:

$$\boldsymbol{\hbar}_{(n)} = \mathbf{m}_A \times \mathbf{v}_{w(n)} \times R_{w(n)} \quad : \quad \textbf{wavequantum spin (magnetic spin)} \tag{2.12,8}$$

or of the observer, who is moved along his mass having the same velocity $v_w = v_{rot}$:

$$\boldsymbol{\hbar}_{(n)} = \mathbf{m}_B \times \mathbf{v}_{rot(n)} \times R_{rot(n)} = \mathbf{m}_B \times \mathbf{v}_{w(n)} \times R_{rot(n)}\,. \tag{2.12,8a}$$

Into this, the three factors are variable. Though, for an observer moved along, equation (2.13.1,8) is valid. With successively relativistic velocity v, the amounts of the change of wavequantum amplitude $\Delta R_w$ and of rotation radius $\Delta R_{rot}$ go out of each other. In principle it is valid that during the rotation radius increases, the wavequantum amplitude must decrease. These events show contrary vectors (see section 2.11.).

The wavequantum momentum is a secondary and elementary feature or a multiply quantized magnetic momentum in the observable dipole character.

One takes a relativistic mass $\mathbf{m}_A$ with eq. (2.4,1) that the movement mass $\mathbf{m}_B$ is adjusting, and one gives the absolute vacuum velocity $\mathbf{v}_{vrot(n)}$ on an orbit level n to it, and a dipole is resulting, which wave amplitude $R_{w(n)}$ appears in the shape of the n-dependent rotation radius $R_{rot(n)}$ with reversed vector and which stores a wave mass $\mathbf{m}_{w(n)}$ or a wave energy $\mathbf{E}_{w(n)} = \mathbf{m}_{w(n)} \times c^2$ filling the condition $n \times \boldsymbol{\hbar}$. The velocity between the observer and the source has the same character: it is vacuum velocity $\mathbf{v}_{vrot(n)}$ or wavequantum velocity $\mathbf{v}_{w(n)}$. There is a gravitational wavequantum.

Wavequantum generates a vectorial dipole $\pm \hbar_{(n)}$ in the shape of a **boson**. These both poles are reversible. Only the mix up of electric wavequantum indication of present physics with the mechanic parallelism gave a conception how above mentioned, from which half a number electric momenta were able to derive – these are **electromagnetic fermions**. In its central point $R_w = 0$, it reaches the maxima of both masses $m_w$ of both poles. Each change at this place leads to energy exchange. It is the base of wave. The consequences of the spin-opinions show the following duality:

In a wavequantum with $\lambda_w = 2\pi \times R_w$ as **circle perimeter** with the **wave amplitude $\mathbf{R_w}$**, the eq. (2.12,7) is valid with integer numbers. This fact hits both, the electric wavequantum called photon (Bose statistics) and also the gravitational wavequantum named fallon. Till now, one suspected the existence of a "particle" called "graviton" that we found as a real cosm-particle never being a wavequantum itself. Therefore, we gave the name fallon to the wavequantum of the falling mass.

In closed cosm, the length $\lambda_o = 2\pi \times R_o$ means one **double pulse of $2\underline{K_o}$**. While one single oscillation pulse – and for one effect of half a cosm momentum – the amplitude **$\mathbf{R_o}$ forms the diameter** of that parity circle, on which one unpaired limit runs: consequently, it seems like "**½ $\boldsymbol{\hbar}$**", if the momentum will be referred on the **radius ½$\mathbf{R_o}$** (half an amplitude). All the electrogravitational cosms seem to be referred therefore in vacuum rest relatively to the character of cosm – then referred on that mass $m_o$ in the magneton equation or on that amplitude $R_o$ – the result is the **electromagnetic** fermion spin (e. m. Fermi statistics) with the real **e. m. half-spin ½$\bar{\mu}$**.

The cosm must pulse two times when the cosm oscillation length $\lambda_o$ is filled completely. This would correspond to one boson. So the e. m. half-spin $½\boldsymbol{\mu}_{(1)}$ would be doubled and would become to a boson:

$$\boldsymbol{\mu}_B \equiv 2\boldsymbol{\mu}_{(1)}/2 = 2\mathbf{h}_{(1)}/2 \; . \qquad (2.12,10)$$

Strangely, "Quantum mechanics" has recognized this factor of 2 as gyromagnetic factor.

The electromagnetic momentum ½$\bar{\mu}$ of an electrogravitational cosm in vacuum rest comes from the rotation of one or more elementary charges $\mathbf{e}_o$ and their working wavequanta between R = 0 and $R = R_o$ at the inside of that cosm. The y-times elementary charges $y \times \mathbf{e}_o$ move themselves there with a quantum of isolated mass $M_{(PK)}$ as a part of the whole inside mass $M_o$ of the gravitational cosm, which carries one isolated electric charge.

**General wavequantum momentum** of rotating masses (cosms) has the form like this:

$$\boldsymbol{\hbar}_{(n)} \equiv n \times \boldsymbol{\hbar} \;\; , \; n - \text{natural number} \; . \qquad (2.12,11)$$

The sign of a cosm momentum is formally reversible by which the type of matter like coino or antimatter is signed calling our coino-matter then antimatter. Cosms exist in their irreversible movement coupling ($v_{limit} = c$) either as relatively positively **or** negatively orientated cosm movements. If one dares the reversion of the primary spin mathematically all other, primary signs of the binding forces have to be changed, because the force couplings about the vacuum remain unchanged. Consequently, the observer gets the impression of a seeming monopole.

Wavequantum momenta are reversible including their forces (v < c; cf. (2.12,8)).

By projection from electrogravitational cosms, an electric wavequantum is given that comes from the course of the orbit of its electric protocosm. Relatively to that cosm, the concerning wavequantum is a fermion but no particle. One simply calculates the electric effect into Planck's constant and covers the electric primacy this way. A relativistic effect of moved charge only appears, because it is carried by its receptacle – by the gravitational charge - and that energy is able to be transferred. In projection of this movement out of the receptacle cosm, no relativistic states will be reflected to the outside. But instead of this, half a number of relationship is reflected:

$$\bar{\mu}_{½} \equiv \bar{\mu}_{(n)} /2 \ , \qquad (2.12,12)$$

$$\boldsymbol{\hbar}_{½} \equiv \boldsymbol{\hbar}_{(n)} /2 \ . \qquad (2.12,13)$$

Inside a cosm, the wavequantum is formed relativistically. Having a view at the equations (2.9,27) and (2.9,28) the analogy is immediately noticed that the elementary charge $\mathbf{e}_o$ rotates an arbitrary orbit filling $\bar{\mu}_{(n)}$ as the general electric wavequantum momentum:

$$\bar{\mu}_{(n)} = \mathbf{e}_A \times \mathbf{v}_{w(n)} \times R_{w(n)} \ , \qquad \underline{\textbf{wavequantum spin}} \qquad (2.12,14)$$

$$\mathbf{e}_A = \mathbf{e}_o /W_{SRT} \ , \qquad \mathbf{Q} = N \times \mathbf{e}_o \ ,$$

N integer number, **Q** – charge quantity or intensity with the same signs. Analogously the addition of mass vectors on the same effect line:

$$\mathbf{m}_{compact} = N \times \mathbf{m}_o$$

one also gets an additive wavequantum momentum (electromagnetic momentum):

$$\bar{\mu}_{(n)} = n \times \bar{\mu} \ , \qquad (2.12,15)$$

$$\bar{\mu}_{(n)} = \mathbf{e}_{w(n)} \times c_w \times R_{w(n)} \qquad \text{with } \bar{\mu} = \boldsymbol{\hbar}/ k_q \ . \qquad (2.12,16)$$

Following these ways, the fields of the electromagnets install themselves to electric dipoles. The elementary effect quantum μ corresponds to the elementary effect quantum of Planck h. Now we get the electric wavequantum – the electromagnet.

If we presuppose the existence of electrogravitons, then they have the elementary electrical rest mass $\mathbf{m}_q$ in form of elementary charge $\mathbf{e}_o$ (irreversible cosm momentum, cf. 2.5., page 328):

$$\mathbf{e}_o = k_q /\mathbf{m}_q \qquad \text{(electrograviton)}$$

$$1 \times \bar{\mu} = \mathbf{e}_o \times c \times R_q \ , \qquad (2.12,17)$$

**Cosm spin** of electrograviton,

with which here an electric cosm momentum was realized analogously the eq. (2.12,6) (these are PK-magons, see section 2.9. and 2.14.).

The charged pairs (which are no photons) vibrate their wave energy $\pm e_w$ out (then this is the photon) by which Heisenberg's uncertainty principle is apparently drawing a "virtual electron/ positron" and ordering also a "virtual charge" to it, but which corresponds to the compensated rest charges. The oscillation forms an elementary magnet, which is working and which is transferred by doing this work – the photon. Here the "QED" and our theory agree after the nature but not after the terminology, because we see the particle concept in different light.

Both primary particles give the momenta after (2.12,17):

$$\bar{\mu} = \bar{\mu}_q = \mathbf{e}_o \times c \times R_g = 9.0877317 \times 10^{-45} \text{ Am}^2 \text{ and}$$

(graviton g, electrograviton q)

$\bar{\mu}_s = \mathbf{e}_o \times c \times R_s = 1.6686462 \times 10^{-41}$ Am² and

(Subtron s).

The momentum $\bar{\mu}$ is elementary. This cosm spin of elementary gravitons and antigravitons also reflects the monopolar electric and gravitational elementary load the factors c and $R_g$ being constants:

$\bar{\mu}$ and $\boldsymbol{\hbar}$ are expressions of the **elementary cosm loads (charges).**

If such an elementary loading is lower, then the elementary amplitude has to be larger keeping constant of cosm momentum. Lighter cosms are larger cosms. By the rotating electric charge in electron, the number of integer n of $\bar{\mu}$ goes up to about $n = 1.02 \times 10^{21}$ (cf. section 4.8). This means: each charged electrogravitational particle, which is much lighter than the graviton, can already realize a multiple number of wavequantum levels $n\bar{\mu}$ of electrition in its movement while it has taken one singular level $1\boldsymbol{\hbar}$ of gravitation.

**Cosm oscillation** itself reflects **Planck's constant** one times as the **external cosm momentum $\boldsymbol{\hbar_{(1)}}$**.

Present physics stiffened on its point of view means that the mass $M_o$ as a resting mass must form a static "Black Hole". But we see like the mass is going over into a dynamic subworld. Consequently, it is becoming an oscillating Black-White Hole!

Searching for mass in universe must submit to the following cognition: only at the time point of total amplitudical expanding of universe $R_o$, the maximally free mass $M_o$ is open. At all the other elongations of R, the observed mass M is smaller than $M_o$! If we were located at $\phi = 1.16$ – then at about 0.74 of the universe pulse ($13 \times 10^9$ y/$17.6 \times 10^9$ y) – then acc. to (4.1,7) there would be only 0.16 of the maximum mass $M_o$ of universe: instead of $7.142 \times 10^{52}$ kg only $1.14 \times 10^{52}$ kg (mass $M_U$ see section 4.5.). Some part of that light of passed world states isn't yet gone out, it is just on the way to us. We are placed at the visible mass amount of $1 \times 10^{52}$ kg. 100 billion to 1 trillion galaxies are appreciated; with the first number of about $10^{41}$ kg these are $10^{52}$ kg. But one presently appreciates the Hubble number with 50 to small, because one is inclined to add the installation of galaxies to the accident, which seems to need larger times – more than 14 billion years. Newer measuring with the Hubble telescope point out to a fundamentally larger Hubble number. If the universe core would be dark like we see the installation and if it would take a radius of about one billion light years, then it swallows about 18% of the starting elongation and so $4 \times 10^{50}$ kg and 18% of our possible view. Therefore, one could think the universe would include less mass than expected.

## 2.13. Isolated and External Quantizing

### 2.13.1. Protocosmic Quantizing

At lighter cosm masses $m_o$, higher velocities relatively to the stationary vacuum can appear with the same wavequantum energy $E_w$ according to the eq. (2.3,16) and (2.4,11) and corresponding to the wavequantum momentum sentence: $m_1 \times v_1 = m_2 \times v_2$. This only means that heavier protocosms can be moved with smaller velocities than the lighter protocosms while having the same momentum.

In any cosm, the protocosms are given in rankings. The first rank starts with the velocity $v_{PK1}$ = const, which is the same one for all protocosms there. From the second rank, there is no more equality of the subordinations and then there isn't some comparable velocity of the second ranks of two first-rate protocosms, but a uniform velocity of each sub-rank of a determined protocosm just anticollapsing.

A cosm always reflects that quantum $\hbar_{(1)}$ externally. It don't let divide itself because it is the external mirror of the totality of the internal space of the receptacle cosm: each movement passing the internal

space must have gone a complete pendulum way, which is corresponding to a total period with $\lambda_{o(GK)}$, $\tau_{o(GK)}$ of the oscillation. But an arbitrary initial quantity cannot increase higher than the integer number n: each first-rate protocosm, which reaches the highest radius $R_{o(GK)} = \lambda_{o(GK)} /2\pi$ is made to reflect the oscillation of the receptacle cosm. Externally seen, this is just one single Planck-quantum h! This means in receptacle cosm: the protocosms don't rotate fundamentally in one orbit that middle dot would be in the gravity center of the internal mass M but on the "roller coaster": two ellipses with circular divergence in the above placed protocosm area lay close to the central gravitational point. Their rotation radius $R_{rot(1)}$ must be doubled if it shall reach one integer Planck-quantum. These in the first rank named protocosms are programmed to form out the initially running rotation radius of $R_{rot(1)}$with their oscillation behavior and with their installation velocity $v_{PK1}$ till the anticollapse, AK (also anticollapse velocity) and with their negatively externally relativistic protocosm mass $m_{B(PK1)}$ in their movement. It exceeds half a cosm amplitude $½R_o$ for a little bit. During this half a period, half the quanta ½ħ and ½μ̄ are working. Deeper moving protocosms have larger initial rotation radii $R_{rot(2-u)}$ but they are electrostatically scattered to the inside so that their movement fields are closed by the rotation radius of the first protocosm $R_{rot(1)}$. On the adjusted rotation radii, substructures then are installed if the anticollapse happens before reaching of the intrinsic rotation radius. We also speak of the installation radius $R_{i(1-u)}$ and of the constant installation velocity $v_{i(1)}$ in the first rank. Under these conditions are valid:
1st Stable particle,
2nd No exchange of energy/ anti-energy over the vacuum sphere Σ (see 3.2.7. and 3.2.8.)), and **non-relativistic reflection** to the outside as well as
3rd Using or special relativity for the observer who is moved along his own elementary cosm EK or with his protocosm PK after the equation (2.19,34) :

$$½ħ_{(1)} = m_{o(GK)} \times c \times ½R_{o(GK)} = m_{B(PK1)} \times v_{PK1} \times R_{rot(1)} \qquad (2.13.1,1)$$

$$m_{B(PK1-u)} = m_{o(PK1-u)} \times [1 - v_{PK1}^2/c^2]^{½} \qquad \text{(cf. (2.19,34))} \qquad (2.13.1,2)$$

$$m_{B(PK1)} = m_{o(GK)} \qquad R_{rot(1)} = R_{i(1)} \text{ , but } \qquad R_{rot(2-u)} > R_{i(2-u)} \text{ ,} \qquad (2.13.1,3)$$

$$v_{PK1} = v_{i(1)} = \text{const.} \rightarrow v_{limit} < c \text{ ; } R_{i(1)} \rightarrow R_{limit} > ½R_{o(GK)} \text{ ;}$$
$$R_{i(1)} = c \times R_{o(GK)} / 2v_{i(1)} \qquad (2.13.1,4)$$

$$v_{i(1)} = c \times [1 - m_{o(GK)}^2/m_{o(PK1)}^2]^{½} \qquad (2.13.1,5)$$

$$R_{i(1)} = R_{o(GK)} / 2[1 - m_{o(GK)}^2/m_{o(PK1)}^2]^{½} \qquad (2.13.1,6)$$

$$2\tau_{i(1)} = 2s_{i(1)} / v_{i(1)} \qquad \text{in relationship to} \qquad \tau_{o(GK)} = \lambda_{o(GK)} / c \qquad (2.13.1,7)$$

divided by $2\pi$:

$$2t_{i(1)} = 2R_{i(1)} / v_{i(1)} \qquad t_{o(GK)} = R_{o(GK)} / c \text{ .} \qquad (2.13.1,8)$$

At relativistic limit velocity $v_{i(1)}$ close to light velocity c, the big resting mass of the protocosm $m_{o(PK1)}$ reaches the movement mass $m_{B(PK1)}$, which is the same value like the small rest mass $m_{o(GK)}$of its receptacle cosm. For the living time, from $v_{i(1)} = s_{i(1)}/\tau_{i(1)}$ follows that $2\tau_{i(1)} > \tau_{o(GK)} = \tau_{B(PK1)}$ . The protocosm, which does not take part at death and rebirth exceeds the installation waytime $s_{i(1)}$, $\tau_{i(1)}$ and the period time of its receptacle cosm $\lambda_{o(GK)}$. Only the anticollapsing protocosms from n = 1 determine the internal mass $M_{o(GK)}$ and that intrinsic time $\tau_{o(GK)}$ (PK1-u means: protocosm of the cosm sentence from 1 to **u**).

For unstable particles and cosm seeds and receptacle protocosms in vacuum rest is valid:
The mass of the receptacle cosm $m_{o(GK)}$ is even exceeded by the protocosm mass $m_{B(PK-u)}$ because the kinetic energy supplied the inside has led to the increase of installation velocity. There the protocosms are living longer than the receptacle cosm oscillates periodically. From this the understanding

is deduced of life time of the unstable particles. Nevertheless, the question remains: How should the energy be transferred by contacting of an internal first-rate protocosm with an external event that all first-rate protocosms could be changed now their velocity on the same but a larger amount? It seems to be impossible. A perturbation arises and concerns only single protocosms. We get the part of the life time of instability:

KS-u: $c \times ½R_o < v_{i(-u)} \times R_{rot(-u)}$ because $m_{B(PK-u)} < m_{o(GK)}$ . (2.13.1,9)

In stable particle, the product shows these relationships:

KS1: $c \times ½R_o = v_{i(1)} \times R_{rot(1)}$ because $m_{B(PK1)} = m_{o(GK)}$ (2.13.1,10)

KS2-u: $c \times ½R_o < v_{i(1)} \times R_{rot(2-u)}$ because $m_{B(PK2-u)} > m_{o(GK)}$ . (2.13.1,11)

If one should set constant all rotation velocities, radii and protocosm masses, Planck level n = 1 would be valid for their movement circles. The exclusion principle would be broken. Getting more than 1 the radii had to be increased quadratically and the velocities had to decreased linearly while the mass would be kept constantly. Because of the decreasing velocity, the mass would be less dilated and earlier anticollapsed. That radius were broken in its anticollapse point. Now besides these variants one can imagine that also the rest masses of protocosms are installed with larger magnitudes. The velocity then didn't need to be changed anymore and the radius didn't need to be increased no longer so strongly squarely. The changes would split up between both magnitudes of the mass and the radius. This seems acceptable, but however, this leads to the indissoluble problem of multibody and multimovement. We can carry out therefore only tendentious estimates detecting the inner adjusting of the sensitivity of force between the bodies of a cosm.

Therefore the rest masses of protocosms $m_{o(PK1-u)}$ are successively heavier programmed from the receptacle cosm amplitude $R_{o(GK)}$ named as $m_{o(PK1)}$ down to the receptacle cosm center R = 0 as $m_{o(PKu)}$. If they had the same installation velocity, they would have an anticollapse earlier with their mass. This way, the protocosms set up the inside mass $M_o$ while anticollapse. Therefore, the initial rotation radii $R_{rot(1-u)}$ must be successively larger in their turn.

> Per area of the quantum condition, a new and bigger mass of the firs-rank protocosms is working. The mass then is new conditioned, consequently, a new quantum number.

The differences between the radii are explainable now with (2.12,8) and special relativity (1.1,6) with relativistic mass of first-rate protocosms $m_{(PK2-u)}$:

> The masses $m_{(PKu)}$ of protocosms of one area type have the same magnitude.
> Area types are: 1s, 2s, 2p, 3s, 3p, 3d, 4s ...

For example, the s-area in n = 1, 1s uses the mass $m_1$; the s-area in n = 2, 2s uses the mass $m_2$; the p-areas in n = 2, $2p_0$, $2p_{+1}$, $2p_{-1}$ are using the masse $m_3$.

The four quantum numbers of each following area type would break the Pauli principle of exclusion state of quantum numbers if the mass itself would not be an intrinsic quantum number. Physics uses quantum numbers purely qualitatively today. They were extended without end to connect phenomena hypothetically. Such a procedure might be no longer up-to-date however, because the isolated mass is not elementary like the electric charge $e_o$. Well, we have to work with a special quantum number of mass relationship of matter. **The mass itself is a quantum**! According to our theory, it forms even the primacy in opposite to wavequantum. Especially, this vagueness has forced introducing the so-called "color charge" by "Quarks Theory". Just the fact that those masses are much more variable than each result of "color charge conception" would have grown putative "quarks types" explosively over the designed measure. In certain way, this meets even the reality since our protocosm-types can be polymorphic almost infinitely. If therefore physics thinks and will think of more "quarks-types", it needs so it proves the variety of the possible wave energies of protocosms or hierarchical sub-energies.

With the constant installation velocity in the first rank, the start of the anticollapse is only dependent on the relation term P of rest masses of protocosms. That P extends the relationship of the initial rotation radii linearly:

$$P = m_{(PK2)} / m_{(PK1)} \qquad (2.13.1,12)$$

$$R_{rot(2)} = R_{rot(1)} \times P . \qquad (2.13.1,13)$$

Greater curvature radii certainly are adjusted in the movement of heavier protocosms. These protocosms of the same charge will be absent-minded by their electrostatic forces. They anticollapse before their upper rest point. So the protocosms don't collect above the first level – like expected – but below this level (cf. section 4.8.). Now one has to take notice that the protocosms of the cosm sentence KS1 only anticollapse in stable particles, while all the protocosms deeper positioned fall the anticollapse producing stable rest particles in vacuum. In this respect, the rounds on the theoretical radii $R_{rot(1-u)}$ will not be completed! Then the suddenly anticollapsing masses $m_{o(PK1-u)}$ stop the expectation their bodies now would arise onto a higher movement level than n = 1 in analogy to electrons in their shell! The special paradox of cosm installation appears: the "exploding" protocosms remain under the energy level n = 1, which is not anticollapsing itself. If there would be more of non-anticollapsing levels like in unstable particles the movement radii now would lay above of n = 1. We therefore introduce the name "-u", which means: till the negative cosm sentence u. These protocosms really have to follow after the relativistic space curvature above the amplitude. They will hardly fly higher than the amplitude but rotate on more than one round till their intrinsic anticollapse will happen finishing the instability (life time).

The heavier protocosms come earlier to their anticollapse from 2 till u. An external mass $m_{o(PK2)}$ bigger with z has a larger intrinsic frequency $f_{(PK)}$ relatively to the mass $m_{o(PK1)}$. With the same dilation velocity $v_{i(1)} = v_{i(2)}$ the heavier protocosm falls into anticollapse on a deeper orbit $R_{AK(2-u)}$ that is determined by the relation of the rest masses of both protocosms. Flying yet on their orbit with their velocity $v_{i(1)}$ the protocosms open and stop on the idleness velocity $v_{b(2-u)} = 0$. So they never reach the height above the amplitude $½R_o$ but only the installation arc $s_{i(2-u)}$, which must be calculated into its anticollapse radius or its installation radius $R_{AK} = R_i = s_i/2\pi$ - into a break height (in stable cosms). First born phenomena stop and start to fall to each other dependent on electromagnetic and gravitomagnetic forces. The non-relativistic idleness velocity $v_{b(2-u)} > 0$ is adjusted. Installed structures stroll in the course of their transformation as galaxy clusters or micro galaxies till their restoration by their collapse and then they return on closed ways to their anticollapse being new reinstalled protocosms. The installation arc $s_{i(1-u)}$ must be added with the idleness arc $s_{b(PK1-u)}$ or its idleness radius $R_{b(1-u)}$ if we have to take notice of the completely taken way – the top radius $R_{T(1-u)}$ [see section 4.1. and 4.2., eq. (4.1,4)]. In these cases, the rotation radius $R_{rot(1-u)}$ is located above the top radius $R_{T(1-u)}$. That breaking off is determined by the relation of the rest masses of the protocosms and their initial velocities. Because the anticollapse doesn't happen in n = 1 with (2.13.1,1) and (2.13.1,3) are valid:

$$R_{rot(1)} = ½\hbar / [m_{B(PK1)} \times v_{i(1)}] \qquad (2.13.1,14)$$

$$R_{i(2)} = R_{rot(1)} \times m_{o(PK1)} / m_{o(PK2)} , \qquad (2.13.1,15)$$

$$R_{T(2)} = R_{rot(1)} / P + R_{b(2)} , \qquad (2.13.1,16)$$

Not only the orbit breaks off now. Instead of the expected velocity $v_{i(1)}$ on the imaginary uninterrupted orbit an average speed is given with the name: top velocity $v_{T(PK2-u)}$. It consists of the prorate protocosm velocity $v'_{i(PK2-u)}$ till the anticollapse and the idleness velocity $v_{b(PK2-u)}$:

$$v_{T(2)} = v_{i(1)} [(R_{i(2)} + R_{b(2)}) / R_{i(1)}] . \qquad (2.13.1,17)$$

The idleness magnitudes are insignificantly small so that we can neglect them. Then the relation (2.13.1,15) of installation radii would determine the brak-off velocity:

$$v_{T(2)} = v_{i(1)} \times (m_{o(PK1)} / m_{o(PK2)}) + v_{i(1)} \times R_{b(2)} / R_{i(1)} \ . \qquad (2.13.1,18)$$

The arc close to the amplitude ½$R_o$ won't be completed in the shape of the broken parity orbit $R_{i(2-u)}$. Both parts of the orbit – the end of the state protocosm and the new start of this state – are connected by the idleness arc $s_b = v_b \times \tau_b$ (eq. (4.3,8)). It is essentially smaller than the installation way $s_i = v_i \times \tau_i$ :

$$R_{T(2-u)} = R_{i(2-u)} + R_{b(2-u)} \qquad (2.13.1,19)$$

$$s_{T(2-u)} = s_{i(2-u)} + s_{b(2-u)} \ . \qquad (2.13.1,20)$$

The rest mass of a protocosm $m_{o(PK)}$ has one or more working electric charges $e_o$. It doesn't run along the orbit of gravitational charge $m_o$. At first the electric charge is differently located outgoing from the gravitational center up to ½$R_o$. Because of the electrostatic interactions with the other protocosmic charges, the charge rotation loses a small part (see section 4.8.). Consequently, the charge is running with its intrinsic rotation velocity $v_{T(1;Q)}$ on its intrinsic rotation radius $R_{T(1;Q)}$. This way, its movement along the protocosm forms an electromagnetic momentum that one can detect analogously (2.13.1,1) acc. to (2.12,14) – but here, it is the relatively resting observer who is noticing the effect relatively to that mass, which charge will be pressed to the outside. Outside of the receptacle cosm, one gets the projection of this event:

KS1: $$\bar{\mu}_{½(1)} = x\bar{\mu}_{½} = \mathbf{e}_o \times \mathbf{v}_{T(1;Q)} \times R_{T(1;Q)} > \mathbf{e}_o \times c \times ½R_o \ , \qquad (2.13.1,21)$$

KS2-u: $$\bar{\mu}_{½(u)} = y\bar{\mu}_{½} = \mathbf{e}_o \times \mathbf{v}_{T(u;Q)} \times R_{T(u;Q)} << \mathbf{e}_o \times c \times ½R_o \ , \qquad (2.13.1,22)$$

Starting from eq. (2.13.1,21), for cosms at which only the first protocosm would have its part of charge would be given fundamentally a larger magnetic momentum than Bohr's magneton (2.9,28). This fact hits reality of charged leptons (electrons, muons and tauons). If there would be the effects of the second cosm sentence, the total momentum would be larger than relatively 1 but smaller than the sum divided by the number of the charges taking part (for example at the proton 2.7927/3 = 0.9309 and at neutron 1.913/2 = 0.9565).

Now the top radius $R_{T(2-u)}$ appears as that radius, which projects the movement of that mass to the outside at which the charge is coupled. There are valid:

$$\bar{\mu}_{½(1)} > \mathbf{e}_o \times \mathbf{v}_{T(1)} \times R_{T(1)} = \mathbf{e}_o \times \mathbf{v}_{i(1)} \times R_{rot(1)} \ , \qquad (2.13.1,23)$$

$$\bar{\mu}_{½(2-u)} > \mathbf{e}_o \times \mathbf{v}_{T(2-u)} \times R_{T(2-u)} \ , \qquad (2.13.1,24)$$

$$\bar{\mu}_{½(2)} = \mathbf{e}_o \times \mathbf{v}_{T(2;Q)} \times R_{T(2;Q)} \ . \qquad (2.13.1,25)$$

Using eq. (2.13.1,15) and (2.13.1,18), for non-anticollapsing protocosms in n = 2, smaller velocities could be valid in approximation because we didn't have noticed the static elevation of the charge in its protocosm:

$$\bar{\mu}_{½(2)} > \mathbf{e}_o \times \mathbf{v}_{i(1)} \times (m_{o(PK1)} / m_{o(PK2)})^2 \times R_{i(1)} \ . \qquad (2.13.1,26)$$

In consideration of higher rotating electric charges, approximately the term was given:

$$\bar{\mu}_{½(2)} = \mathbf{e}_o \times \mathbf{v}_{T(1;Q)} \times \{m_{o(PK1)} / m_{o(PK2)})^2 \times R_{T(1;Q)} \qquad (2.13.1,27)$$

This way, the electromagnetic momentum is shortened essentially by the protocosmic masses quadrately, which we can measure at proton and neutron in the shape of those abnormal magnetons (see section 4.8.).

At the electron, only one single momentum is working in the first cosm sentence, which moreover is signed by the small exceeding of the theoretic magneton respectively its interaction (gyromagnetic momentum 1.0011597:1.0) because it is located in asymmetry system MB+1 (see section 4.8.).

The heavier protocosms have now a smaller dilation of their oscillation by which they come faster to the anticollapse existing as divergent Black-White Holes. During this procedure, the isolated protocosm mass $M_{o(PK2\text{-}u)}$ will be ejected for the most part. The velocity of the bodies decreases dizzily (momentum conservation!): in the eq. (3.2.4,1) and (3.2.4,2) acc. to (2.10,23), the external mass $m_{o(PK2\text{-}u)}$ tips over into the isolated mass $M_{o(PK2\text{-}u)}$. From the inside of the receptacle cosm, from the proximity to R = 0, a strong mass field is installed from the sum of all protocosmic internal masses $\Sigma M_{o(PK2\text{-}u)}$, which attracts the lighter escaping protocosms and which finishes their escape finally and completely by a circular way. The receptacle cosm has been made – has been **installed** – on its external amplitude projection $R_{o(GK)}$. Beginning from there, collapse processes lead back the protocosm masses $M_{o(PK2\text{-}u)}$ to each closed mass $m_{o(PK2\text{-}u)}$. The elongation of the mass $\Sigma M_{o(PK2\text{-}u)}$ is falling to the center of its receptacle cosm R = 0. While this event, the receptacle cosm is going to be rebuilt while it is ideally collecting all the things, which allow its reinstallation after passing zero. It is interesting here that the internal mass $M_o$ installs its maximum and its minimum two times in succession while the complete period of this double pulse reflects the external mass $m_o$ itself. Equivalence of both masses (2.7,1) isn't touched by this procedure. Deeper protocosms from 2-u are moving on eight-like loop orbits. Then they always change their equal positions in a quartet. If there are unoccupied places, the change of location doesn't have any meaning in the end but well the permanent movement in a single direction, which is drawing the magnetic momentum to the outside (section 4.8.).

The first series of protocosms is filling the complete oscillation of the receptacle cosm. It consists of the first-rate protocosms. If one part of the opened mass of the first rank is collapsing again, the second-rate protocosms arise. This way, the process of change of typical protocosm ranks is continuing until the opened mass hasn't enough pressure energy anymore reaching the collapse. Only the annihilation radiation coming back (as radiation cosm) together with the protocosms returning from the amplitude initializes a collapse return, which leads to the general back-formation of protocosms (see section 4.2.).

For unstable particles or cosms the following is valid:
When external energy comes to the inside of a receptacle cosm, its radiation energy $E_{w\gamma}$ is supplied. Each element of the isolated system gets a changed momentum as expression of the relativistic inertia. The average velocity of that first-rate protocosm or of more protocosms or subprotocosms $v_{T(1\text{-}u)}$ increases. Those movement mass $m_{B(1\text{-}u)}$ is decreasing while the relativistic mass $m_{A(1\text{-}u)}$ is increasing at the inside of the cosm. Cosm energy is remaining till the protocosms get the possibility to transfer it to the outside. How should a protocosm-mass radiate its energy out of the gravitational horizon, if it is theoretically isolating this system? Never, is the correct answer. Here is the only consequence: During destabilization, the movement mass $m_{B(PK1\text{-}u)}$ is essentially decreasing that the rest mass $m_{o(GK)}$ of its receptacle cosm will become heavier. Then, so to say, relatively to the outside, the events of birth, death and rebirth of the isolated inside have to be calculated in divergent proximity of the gravitational horizon. The higher energies cannot be separated. As soon as the protocosms have worked out their dilation time, they are opening themselves and giving out the surplus energy if they don't get new energy. In the course of cosm stabilizing, they come back again in the proximity of the original gravitation horizon:

| | | | |
|---|---|---|---|
| $m_{B(PK\text{-}u)}$ | < | $m_{o(GK)}$ | follows: unstable particle (cosm seed), |
| $m_{B(PK1)}$ | = | $m_{o(GK)}$ | follows: stable particle (cosm), |
| $m_{B(PK2\text{-}u)}$ | > | $m_{o(GK)}$ | follows: isolated movement mass in particle. |

After passing by of life time of unstable particle, the surplus energy will be sent out at a point of the receptacle cosm period, which importance cannot be thought yet. This means: the radiation don't find some members of the reaction. Now it will be working at the inside making a collapse of that protocosm. Only if it can quantitatively produce new particle pairs at the other protocosm or at those internal particles like gravitons and subtrons, it will be working externally. If it is strong enough, then it produces a particle pair inside the stable particle from which the decay to the outside is following.

Under special circumstances, even protocosm pairs can be formed by energy incoming from the outside. This means that there is no change of the external protocosm mass balance but also an **addition of potential radiation energy of those protocosms** of the receptacle cosm system under reduction of the kinetic energy addition because of the annihilation ability of the pair:

$$\Sigma m_{o(PK)} = \Sigma m_{o(PK)before} + (+m_{o(PK)})_{pair} + (-m_{o(PK)})_{pair} ,$$

$$\Sigma m_{o(PK)} = \Sigma m_{o(PK)before} \pm 0 . \qquad (2.13.1,28)$$

After this double movement addition of those protocosm masses $\Sigma m_{o(PK)}$ – the velocity $v_{(PK1)}$ of determined protocosms is increasing – those protocosms have their anticollapse after a larger waytime dilation with eq. (1.1,6). A protocosm later opened has less installation time of its internal mass $M_{o(PK)}$. Therefore, the amplitude $R_o$ of this receptacle cosm is smaller. According to eq. (2.6,1) and (2.6,2), the fact follows that the unstable particle produced from the stable proton is externally heavier than the proton, for example, the neutron or the lambda hyperon. Just a proton, which only has got radiation energy to its inside working kinetically on the given protocosms, will become heavier and radiate. This way, here the effect of relativistic inertia is shown: a body of the cosm inside has got some energy from the outside. Although it doesn't distribute itself to the other bodies it represents an effect, which works at all the other bodies because, the cosm will get less internal mass and more external mass.

Vice versa, the particle becomes lighter by radiation how we know it at nucleons, which have sent out fusion energy (mass defect). There are the relationships according to eq. (2.19,34)
with $m_B = m_{Ao} \times W_{SRT}$ and (2.4,1a) and $m_A = m_{Ao} / W_{SRT}$. We then get the calculation of the indication mass $m_A$ as relativistic mass into the movement mass $m_B$:

$$m_A = m_{Ao}^2 / m_B . \qquad (2.13.1,29)$$

Converted into indication mass-difference $\Delta m_{(n)}$ that means the radiation energy $\Delta E_{(n)}$ with $c^2$ of (2.4,1d), we get:

$$\Delta m_{(n)} = m_{Ao} [(m_{Ao} / m_B) - 1] . \qquad (2.13.1,30)$$

Protocosm pairs (coino/ anti-PK) give a zero balance of mass. As soon as they are formed into a coino receptacle cosm, the installation of the coinos follows at the surface of the elongation. Those antis form a stratum of eternal life on the elongation. In this respect, antiprotocosms always are moving above the first movement area of coinoprotocosms. The radial difference is insignificantly low with relativistic magnitudes. But in the course of the generally isolated increase of kinetic energy, each protocosms come together divergently to such a common amplitude that is determined of the possibility becoming lower giving out isolated mass M - the amplitude of the unstable particle will be successively becoming smaller with further energy supply below the vacuum sphere $\Sigma$.

As soon as the first isolated masses of protocosms were broken out, the installation of the oscillation is starting. According to the laws of space quantizing, from this mass now the other protocosms will be forced successively of a closed order, which has its starting point at the constellation of the preorder next to R = 0. The strongest force of order starts at $R = R_o$, because there the isolated relativistic amounts of electrogravitation don't allow the free behavior and the free order anymore.

That event from R = 0 to $R = R_o$ one should call **Construction.** Its highlight consists of a solid building, which is then dissolved into an **Ordered Destruction**. During the construction and the destruction also sub-processes of installation and reinstallation are running. Finally, after passing almost R = 0, the constructive reinstallation triumphs when the universe has altogether followed the process of destruction. We get the decisive conclusion now:

> A receptacle cosm is programmed by its protocosm resting mass $m_{o(PK1)}$ of the first cosm sentence, by its first-rate protocosm velocity $v_{(PK1)}$ and by its amplitude $R_o$ that is determined

of its total internal mass $M_o$. Consequently, we have to take notice of the installation's graduation "i" in the shape of the respective mass differences $\Delta m_i$ between the protocosm resting masses $m_{oPK1\text{-}u)}$ of different levels:

$$\Delta m_i = m_{o(PKu)} - m_{o(PKu\text{-}1)} \; . \qquad (2.13.1,31)$$

Differently given, they decide about the type of cosm. Particles of almost the same mass and charge are only then members of the same type, if they are totally identical with their inside structure – this means genetically identical. This only hits that condition, if it is the same type of programming over the shape of protocosms – like the type of baryons derived by the proton or the type of leptons derived by the shown ones with those conservation laws. Protons and electrons seems to be the clones of one single type of particles of this species, so of one single proton and electron as also neutrino.

If similarities should appear because of a temporary agreement in the charge and the mass, then we cannot interpret it as a type-relationship. The divergence of energies at a quantity of different particles does not lead then to one common "primeval particle" as an apparently "initial unity of structure" but only to a multiple number of unstable particle states, which are similar but in these things the types (species) remain totally identical, because they are programmed structurally and independently:

> In the high-energetic initial unity, the particle types as agreed are divergently similar by their properties, but they have never been one common object.

This cognition has legal value. It is able for a generalization. And it may have importance and correcting influence of the observation of the so-called "evolution" of organic life.

### 2.13.2. Quantum Numbers

From almost every section of our theory, we see the problem of spin. Here we want to try to connect the fathoms to one road junction. We define:

The **SPIN** serves as an equivalent concept of the intrinsic **angular momentum** or of the **effect** of a particle. It is led from the existence of electromagnetic momentum of the particle. According to our theory, there we expect the **electromagnetic momentum** and/ or the **gravitomagnetic momentum**.

The spin is always caused by relative **orbit magnetic momentum $I_B$** of an electric charge $e_o$ or a gravitational mass $m_o$ within its receptacle cosm. That orbit's magnetic momentum is part of a hierarchic order of orbit's angular momenta. Each projection of a sub-effect onto a higher hierarchical plane is named "intrinsic momentum" or "intrinsic angular momentum", if it ever exist as such a one.

Our theory knows gravitational and electric effects as explained in section 2.7. We therefore can split up the spin into both causal fields:

1st the **gravitomagnetic effect quantum ħ** = $1.05458866 \times 10^{-34}$ Js as gravitomagnetic spin (g. m. spin or g-spin or Planck's effect quantum);

2nd the **electromagnetic effect quantum** $\bar{\mu} = 9.08773171 \times 10^{-45}$ Am² as electromagnetic spin (e. m. spin or q-spin).

Mathematically, we understand the spin as a quantized magnitude:

| | | |
|---|---|---|
| $h = m \, v \, u$ | $\hbar = m \, v \, R$ | $u = 2\pi \, R$ |
| $\mu = e \, v \, u$ | $\bar{\mu} = e \, v \, R$ | (cf. section 2.12., eq. (2.12,8-14)). |

If its movement magnitude as the amplitude R or the wave length $u = \lambda$ will be cut off the angular momentum, than one gets the gravitomagnetic or the electromagnetic **momentum of the wavequantum**:

$$p_{g.\,m.} = m\,v \qquad p_{e.\,m.} = e\,v \qquad \text{(cf. eq. (2.4,11))}. \qquad (2.13.2,1)$$

Well, momentum analyses are subject to the spin-opinion.

Projecting a cosm by the integer spin n = 1 we call a **primary spin**. If the spin in multiple numbers results from the movement of an elementary cosm inside its receptacle cosm less than vacuum light velocity, then we classify it as **secondary spin**.

The coupling of g. m. and e. m. effect quanta cannot fundamentally be seen parallelly as proved in eq. (3.2.1,20). **Electromechanic parallelism** seems to be a remnant of classical physics, which was caused most on empirical values. Macroscopic observation of electromechanic parallelism of effects led to such an experience that a charged body rotates producing the angular momentum and also the magnetic field with inseparable necessity at the same time. This observation is caused by the small difference of the integer number n relatively to the g. m. spin of about $n = 10^{50}$ to $10^{80}$ in relationship to the e. m. spin of about $n = 10^{70}$ to $10^{100}$. Therefore, transitions of the energy steps are felt as apparently analogous signals in the macroscopic associated field.

In the proximity of 1ħ for example in the movement of the electron already $10^{21}$ $\bar{\mu}$ can be generated. Here, the g. m. effect quantum ħ gives the clearly discreet character of the signal while the e. m. effect quantum $\bar{\mu}$ makes possible the adaption of apparent analogous signal transitions. Deviations of the classical parallelism are working, which are as follows:

- gyromagnetic momenta from the electron to the nucleons;
- adjusting of spectral levels in the electron shells of atoms;
- adjusting of spectral levels of the strong interaction in the spheres of nuclei.

Solutions of high precision were given today by the statistical “Quantum Theories” of electromagnetism beginning by Schrödinger, extending by Dirac and completing by the “Quantum Electrodynamics, QED”.

Corresponding to the distinction of fields given here with electromagnetism and gravitomagnetism, we must lead back the problem area of **movement** of rotation and the problem of rotation onto the general concept of angular momentum while we divide it into both following features:

1. **Primary Angular Momentum $\mathbf{l_p}$ = Cosm Spin**

   (cf. (2.12,4), (2.12,6) and (2.12,19))
   It is created from the projection of the external oscillating movement of the receptacle cosm. The oscillation certainly is a function of isolated relationships. But this influence doesn’t work to the outside concretely. Generally, only the fact is externally acting that there a spacetime is oscillating and forming a new single Planck-quantum $h_{(1)}$ to reflect this effect.

That cosm spin is a relativistic dipole, because cosm oscillation is running with vacuum light velocity. Corresponding to this, it connects all the other cosms, standing beside it ideally and indissolubly. So the cosm spin is forming the positive or negative charge of a cosm in gravitational or also electric feature. An observer can see it from all sides, but he cannot change the primary connections of finitely high forces of cosms - invincibly by limit values - over the connections of the vacuum bodies also invincibly bound. The sum of cosm spin means the external compact mass of all cosms taking part: $\Sigma\, \mathbf{l}_p \Rightarrow m_{compact}$ . All cosm spins are forming the primary field and its invincible direction in vacuum. Each movement changes that mass magnitude relatively.

In this respect, from the point of view of the observer, the **cosm spin** remains a **monopolar spin**. This also means that the present specifications made by physics of the apparent “general spin" as cosm spin in positive or negative order were arbitrary, because of the electromagnetic order mistake (such a kind of arbitrariness as one could say to our type of matter antimatter instead of coinomatter,

later we would change the name from antimatter into coinomatter). Physics really means the wavequantum spin in the form of a really electric property of particles without that it would be able to tell the cause of it consisting in the absolute reference system of cosms – in stationary vacuum.

Cosm spin is divided into the gravitational primary spin at purely gravitational cosms (g-spin) and into the electric primary spin at purely electric cosms – the free charges - (q-spin). All cosms of gravitational as well as electric origin have the primary boson spin in $|\hbar| \times s_p = \boldsymbol{\hbar}_{(1)}$ measured ($s_p$ as primary spin quantum number; $s_p = \pm 1$: boson). For the primary q-spin, the calculation can be referred on $|\bar{\mu}| \times s_p$. Electrogravitational cosms have the gravitational primary spin but no electric primary spin but then an electric secondary spin $I_s$, which is a wavequantum spin.

## 2. Secondary Angular Momentum $I_B$ = Wavequantum Spin

(cf. (2.12,7), (2.12,8) and (2.12,16))
These are all external momenta, which come from a curved movement. Describing a subordinated orbit, they are orbit angular momenta $I_B$ in principle also in the shape of intrinsic rotations. “Pulverized " charges don’t exist really. They are only the object of statistics.

When an electrogravitational cosm gets a momentum $\Delta p_w$, then it moves on a new curved orbit. During this event, its gravitational primary spin $I_p$ as also its gravitational orbit spin $I_B$ as well as its electrogravitational orbit spin complex $I_B$ – because it carries an electromagnetic charge – are adjusted onto the field directions of its environment.

Remark! The concept of the momentum causes the idea of an uncompleted something, which claim of existence seems to be doubtful: the wave energy includes the momentum $E_w = p \times c$. If we detect the angular momentum, than that momentum isn’t able to be described as such a one but a completely new physical magnitude that includes the momentum $h = p \times 2\pi \times R_w$. In our theory, the momentum always merges in rotation movements.

Each external adjusting of velocity also works out isolated conditions of protocosmic movements along the vacuum. An all over isotropic delivering of protocosms from the main emphasis of the receptacle cosm is just possible in rest to the vacuum. Each external movement change forces the isolated spatial shape of spherical oscillation to take a contrary deformation to the movement direction of the cosm, which maximally can diverge to the horizon $r_{o(GK)}$ of the receptacle cosm, because the receptacle cosm also diverges only to vacuum light velocity with its intrinsic velocity. In the cosm, a return of protocosms to the origin is possible after an extremely dilated movement in such a divergent situation. So the oscillation of the cosm is dilated or decelerated. Therefore, the special relativity is shown in the outside. And this way, too, it is shown that the isolated mass is transported by the external mass body. An unbelievable phenomenon results. An externally light mass $m_o$ with its outer momentum (3.2.4,1) transports an internally gigantic mass $M_o$ with that inner momentum (3.2.4,2) at the same time.

The force couplings of wavequantum spins $I_B$ are reversible and able to separate into both sides of those poles with their non-relativistic dipole behavior. That wavequantum spin is measured by $\pm\hbar \times \mathbf{n}$ or also calculated of electric wavequanta by $\pm\bar{\mu} \times \mathbf{n}$ (**n** as main quantum number; integer number). From **n** = 2 the secondary quantum number **l** and the magnetic quantum number **m** appear (today without having a solution of gravitation single-sided seen as electromagnetic quantum number m, but now also the gravitomagnetic quantum number). Because of the suborder of magnetic momenta, they are to add vectorially. Here physics adjusted the inner quantum number **j** of coupling of e. m. spin and orbit spin. Instead of wavequantum spin and orbit angular momentum, we use a shorter concept of the orbit spin in the following text. We distinguish the quantum numbers into these features as follows:

1st Primary spin quantum number $\mathbf{s_P} = \pm 1$ as absolutum being of subordinate importance of the isolated quantizing but essential of the sum of electric and gravitational resting masses in quantity **m**, **Q** (**quantum numbers**: **g**, **q**). Here is the additional grafting onto vectorial character.

2nd Secondary spin quantum number **s** as orbit spin quantum number of electromagnetic momenta $\bar{\mu}_B$ of a particle, which is made most as half-number components of an integer number: $\mathbf{s} = \pm ½ ...$, the gravitomagnetic momentum $l_t = ½\hbar$ is behaving analogously (**wavequantum number s**, Pauli's principle). This is the additional grafting onto of the vector character!

2a. Main quantum number **n**, (main orbit)
2b. Secondary quantum number **l**, (secondary orbit, orbit order)

2c. Magnetic quantum number **m**,

(Remark: between 1st and 2nd one has tried to make a connection explaining Stern-Gerlach experiment and Hamilton's function, which seems to be unreal.)

$\mathbf{s_p}$ -- Primary spin $\mathbf{s_p} = \pm 1$
**of electrocosms and of gravitocosms** and those order $\mu_{(1)}$ and $h_{(1)}$,

**s** -- Secondary spin $\mathbf{s} = 0, \pm ½, \pm 1, \pm 3/2, ...$ extreme
**of the electromagnetic order** (electromagnetic momentum $\bar{\mu}_{½}$ of the particle itself);

**t** -- Tertiary spin $\mathbf{t} = 0, \pm ½,$
the tertiary spin causes the **gravitomagnetic order** in $\hbar_{½}$,

**n** -- Number of main level: $\mathbf{n} = 1, 2, 3, 4, ... , n$
**of electromagnetic and of gravitomagnetic order,**

**l** -- Number of secondary level: $\mathbf{l} = 0, 1, 2, 3, ... , (\mathbf{n} - 1)$
**of electromagnetic and of gravitomagnetic order**,

**j** -- Inner quantum number of coupling of e. m. secondary spin and e. m. orbit spin as well as the following g. m. tertiary spin and the g. m. orbit spin: $\mathbf{j} = \mathbf{s} + \mathbf{l}$
**of electromagnetic and of gravitomagnetic order**,

**m** -- Spatial position of orbit: $\mathbf{m} = -\mathbf{l}, ... , -3, -2, -1, 0, +1, +2, +3, ... , +\mathbf{l}.$ (2.13.2,2)
**of electromagnetic and of gravitomagnetic order**,

Number of the spatial positions of each **l**: $\mathbf{m'} = (2 \times \mathbf{l} + 1)$ (2.13.2,3)

A rotation system, which vectors lay in its rotation center, for example, with electron shells of atoms, has become the term:

$$\mathbf{m} = \mathbf{l} \times \cos(\mathbf{B}, \mathbf{l}) = \mathbf{l} \times \cos\zeta. \quad (2.13.2,4)$$

$\zeta$ is the angle between the vector of the main level wavequantum ("main field direction" **B**) and the respective vector of the second level wavequantum (orbit angular momentum **l**):

$$\zeta = \arccos(\mathbf{m}/\mathbf{l}) ; \qquad \mathbf{l} \neq 0 . \quad (2.13.2,5)$$

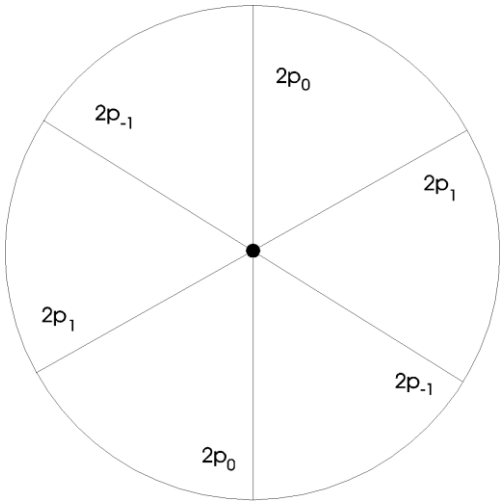
For l = 0, the angle cannot be defined. We consequently think that there is no angle. In this respect, we define all the levels, which value gets l = 0 positioned in the same plane. For example, those are the sizes of 1s, 2s, $2p_0$, 3s, $3p_0$, $3d_0$ etc.

In opposite of the present opinion of the distribution by spatial angles we noticed the following conclusions:

In our system of protocosms, magnets of parity orbits are turning themselves on the perimeter of a tube line thought as being circular. At a cosm, the tube radius amplitudically has the amount of $½R_o$. Its perimeter on the middle line takes $\pi R_o$. In a protocosm, the divergence is valid therefore $>½R_{o(PK)}$ or also $> \pi R_{o(PK)}$. Ideally seen, the protocosmic orbits of a common mass level distribute themselves uniformly in the course of the compensation of repulsive and attractive e. m. forces. For example, they take about the angles of 60° in the six 2p-orbits.

The symmetry systems of massblocks will be supported by the electric force. Only the asymmetry systems MB-1 and MB+1 form the unusual feature. While both 2 are attracting themselves contrarily and then they can run just as on a circular arc, the 1 is moving itself in the electromagnetically neutral state. In this respect, it ejects especially into spiral arc. Resulting, protocosms are opened asymmetrically, too. The simple system MB+1 has one systematic inclination of the equator to the orbit of more than 22,5° in the state of transformation. We guess at the start of about 23°, which are increasing while running away by repulsion. One should compare the inclinations of the four planets Neptune, Saturn, Mars and Earth in section 4.10.3. The double systems 2 take multiple numbers of inclination angles dependent on their rotation around their common gravity center and revolved to the countermove of rotation.

Illustration 2.13.2;1: Orbit's Areas in 2p




Those spins $\mathbf{s_p}$ or **s** and **t** are qualitative axioms although their magnitudes, the rest mass $m_o$ as well as the rest charge Q as primary spin or wave masse $m_w$ and the wave charge $e_w$, naturally are quantized magnitudes. Consequently, we mean to accept Pauli's principle by setting different quantities of mass of each spin repetitions. The newly appearing of the primary spins **g** in the next cosm sentence is connected to heavier mass of the protocosms rotating there.

Inside of one single level **n**, the number $N_{PK}$ of positions is calculated in the electrogravitational cosm sentence:

$$N_{PK} = 4\ \mathbf{n}^2. \qquad (2.13.2,6)$$

If anticharges bound at charge-carrying masses are missing as in electron shell, a cosm sentence only can be filled with half the position numbers:

$$N_e = 2\ \mathbf{n}^2. \qquad (2.13.2,7)$$

We have to add calculating the total number $Z_{PK}$ of all protocosms in a receptacle cosm:

$$Z_{PK} = 4\ (1^2 + 2^2 + 3^3 + 4^2 + ... + \mathbf{n}^2) \qquad (2.13.2,8)$$

$Z_e = 2\ (1^2 + 2^2 + 3^3 + 4^2 + ... + \mathbf{n}^2)$ in electron shell.

Currently, spin orders were chosen by observer's point of view, which are senseless for the primary orientation in a primary field. Only in a secondary field, wavequantum orientations to each other have importance. For primary momenta, we define in addition as follows:

| Gravitation: | Electrition: |
|---|---|
| g = + gravitational | $q = + e_o$ |
| $\bar{g}$ = - gravitational | $\bar{q} = - e_o$ . |

The rotation of a cosm (as a primary dipole, primary quantum, apparent monopole) is forming the wavequantum (secondary dipole):

1st When a **positive something rotates to the right** then a positive vector follows forwards into observer direction and a negative one backwards (dipole). That vector shows into observer's direction; but it consists of both vectors of equal magnitude in natural sum on one effect line.

2nd When a **negative something rotates to the left** then a positive vector follows forwards and a negative one backwards (dipole again). This vector shows into observer's direction, too; it also consists of both vectors of equal magnitude in their natural sum on one effect line.

Connecting the movement of gravitational charge (g-load) and of electric charge (q-load), the electromechanic parallelism (now as **electrogravitational parallelism**) follows always if both get a forcing cause of common movement, because it was historically created this way:

The g-spin and the q-spin have the same sign in the same relationship.

The force coupling of g-wavequanta or g-spins forms a parallel state (symmetry); the coupling of q-wavequanta or q-spins forms an antiparallel state (antisymmetry). Referred conservation of momentum and angular momentum as orbit angular momentum, the consequences follow:

I. Coinomass against coinomass (positive gravitation):

Two particles are pushed to each other.

| shock + antishock or | turn + antiturn |
|---|---|
| $\rightarrow\leftarrow$ | |
| $+p + (-p) = 0;$ | $\hbar_{(n)} - \hbar_{(n)} = 0$ |

II. Antimass against antimass (negative gravitation):

Two antiparticles are pushed to each other.

| antiantishock + antishock or (shock) | antiantiturn + antiturn (turn) |
|---|---|
| $\rightarrow\leftarrow$ | |
| $+p + (-p) = 0;$ | $\hbar_{(n)} - \hbar_{(n)} = 0$ |

The left turned to the left equals the right turned to the right.

III. Coinomass against antimass:

a) A particle hits an antiparticle (base of momentum doubling).

| shock + antiantishock or | turn + antiantiturn |
|---|---|
| $\rightarrow\rightarrow$ | |

+p + p = 2p; $+\hbar_{(n)} + \hbar_{(n)} = 2\hbar_{(n)}$

b) A gravitational particle comes together with a relatively resting antiparticle (base of annihilation at electric attraction condition).

shock + antishock or turn + antiturn

$\rightarrow\leftarrow$

$+p - p = 0$; $+\hbar_{(n)} - \hbar_{(n)} = 0$.

Momentum and angular momentum are traced by the vectorial velocity. Primary spin of the coinomass forms the correct inverse of the primary spin of antimass.

I. Coinomass m: $+\hbar$ II. Antimass $\bar{m}$: $-\hbar$ .

Coinomass and antimass repel each other purely gravitationally. The contrary state has to be valid for the orbit angular momentum.

### 2.13.3. Quantizing of Particles

At first, we look at the quantized building of the electrogravitational cosm. Its mass body of the central elongation masse M forces the protocosm masses $m_{o(PK)}$ to be curved gravitationally, although the e. m. orientation is giving an order to this space:

| | INNER ORBIT | | OUTER: | $I_p = 0 \times \hbar_{(1)}$, $I_s = 0 \times \bar{\mu}_{½}$ $I_t = 0 \times ½\hbar$ |
|---|---|---|---|---|
| **1st dipole** | PB 1 L | $-\hbar_p^+$ | $-\bar{\mu}_{½}$ | It is an undisturbed state. |
| **in first cosm sentence** | PB 2 R | $+\hbar_p^-$ | $-\bar{\mu}_{½}$ | |
| **2nd dipole** | PB 1 R | $+\hbar_p^+$ | $+\bar{\mu}_{½}$ | |
| In first quadrupole | PB 2 L | $-\hbar_p^-$ | $+\bar{\mu}_{½}$ | |

2nd cosm sentence till nth cosm sentence repetition of the first cosm sentence including all cosm momenta till the mass $M_o$ has come together. The gravitational orientation of the inner orbit is also the rotation direction of gravitational mass of protocosm at the same process. If a protocosm is missing in KS1 in the parity orbits PB 1, 2 then that protocosm, which determines the asymmetry also determines the sign of the e. m. momentum of cosm. When inside the cosm sentences all the places are filled than no momentum can result. More missing positions are programming that cosm on multiple momenta like less than two times $\bar{\mu}_{½}$ or less than three times $½\bar{\mu}$. The remaining part works as electromagnetically almost compensated and gravitationally additional mass block.

If one had to expect only three isolated particles (there are only three wavequanta of electric interaction and therefore a secondary half-spin of $I_s = \pm\bar{\mu}_{½}$ again) like the quarks theory practice it with its ignoring of the real “quanta", say **cosms**, furthermore we had to make only the unreal model tricks with the third charge conception and the color charge conception.

Consequently, we systemize the first cosm sentence of an electrogravitational cosm of the above called example of asymmetry MB-1 with the primary spin $+2x½\hbar_{(1)}$, on a double pulse in which the protocosms (PK) appear in the following systematics, L-counterclockwise, R-clockwise:

| | INNER: | OUTER: | $I_p = ½\,\hbar_{(1)}$, $I_s = \bar{\mu}_{½}$ $I_t = ½\,\hbar$ |
|---|---|---|---|
| **1st dipole** | PB 1 L: $(PK_L^+)$ | ( ) | |
| **in first quadrupole** | PB 2 R: $PK_R^-$ | $-\bar{\mu}_{½}$ | |

| | | |
|---|---|---|
| **2nd dipole** | PB 1 R: $PK_R^+$ | $+\bar{\mu}_{½}$ |
| In first quadrupole | PB 2 L: $PK_L^-$ | $+\bar{\mu}_{½}$ ... |

In the first cosm sentence we get the **asymmetry system MB-1**. From the second cosm sentence the parity is given in the **symmetry system as an inner massblock**.

If we only had **anti**protocosms, which would rotate with the same rotary directions of orbit L and R like shown in the above called example and with reversed charges then the outer cosm momentum would result to $I_p = -½\hbar_{(1)}$ (inside the negative mass is working), the electric magnetic momentum would be $I_s = -\bar{\mu}_{½}$. When we would make a coino and such an anticosm congruent because of their electric attraction from a reference observer position, then the cosm momenta are able to be compensated. In addition the magnetic momenta of contrary nature are totally able to be compensated. **Essential** is here that this system does not allow mirror symmetry. Annihilating pairs come together externally with compensation of their spin and must really annihilate with their isolated matter on their orbits in relative rest to each other. Certainly, here is the cause that physics in vain currently looked for mirror symmetries.

Both features are built with electric charges of protocosms by which electric wavequanta and electric charge sums or differences are resulting. We take the condition watching the first construction as electrogravitationally positive cosm and the second construction as electrogravitationally negative cosm (as electrogravitational anticosm). They carry the necessary quality of relative congruence of isolated structure. When bringing congruence to both with their isolated structures, then all the isolated protocosms and antiprotocosms are meeting for annihilation in relative rest at the inside of the cosm-unit by what the gravitational and negatively gravitational inner cosms are binding to gravitational and electrical vacuum that transfers their special photon energies $E_{w\gamma}$ as interacting electromagnetism. The simplified isolated quantizing we symbolize as seen below. There are:

KS - number of the cosm sentence that content reflects each one fill;
QN - quadrupole number;

**g** - positive or negative mass of elementary cosm, together taking part at isolated mass, addition of signs is senseless – it only leads to isolated masses; externally its movement projection is simply valid as mass or antimass (gravitational quantum number, QZ); The quantity is decisive because mass charges are not elementary there as electric charges do.

**$I_B$** - Internal gravitational wavequantum of different protocosm in form of orbit momentum (gravitomagnetic quantizing) in $\pm½1\hbar$; (gravitational wavequantum number, WQZ); symbol B;

**e** - electrically positive or negative elementary charge $\pm e_o$ of the observed protocosm; internally and externally observable, addition of signs is full of sense (electric quantum number, QZ);

**$I_s$** - isolated as well as external electric wavequantum of protocosm orbit as electromagnetic momentum (electromagnetic quantizing); addition of signs is full of sense (electric wavequantum number, WQZ); each arbitrary $I_s$ causes half an $I_t$;

**$I_t$** - external gravitational wavequantum of external mass turning in $\pm½\hbar$; addition without sense leading of a positive or negative half-spin $I_t$ from secondary spin $I_s$, which is turning the mass itself. $I_t$ is secondarily moved $I_B$.

( ) - non-filled protocosm positions (blanks):

Order in mass block of M:

- Two pairs of parity orbits 1R, 2R; 1L, 2L, are running in the same rotation radius $R_{rot(n,m)}$.
- Each parity orbit 1R or 2R or 1L or 2L is giving an electrogravitational dipole. Two of the dipoles, for example 1R and 1L, are giving that pair of parity orbit, which we named quadrupole:
- Two quadrupoles form a cosm sentence.
- Those two pairs of parity orbits lay above each other so that they are running together in the semicircle of the four orbits directly: $1L^+$ onto $2R^-$ and $1R^+$ onto $2L^-$. The contrary

electric charges supply the attraction. Each parity orbit gets an electromagnet, which has a contrary pole against the other orbit – that is the condition for the spatial distribution of the orbits.

- The filling turn of cosm sentences gets its law with anti-*Hund's* rule;
- Each cosm sentence the exclusion principle for wavequanta is valid.
  In one cosm sentence all the quantum and wavequantum numbers are different.

… Each cosm sentence has the same structure corresponding to its quantum numbers….

… This turn of n stands on the head like also Hund's rule, which is well-known from the areas of atomic shell. Here firstly an area of main level will be filled, for example, $2s^2$ after filling of $1s^2$. Then the next secondary level is following with each electron, for example, $2p_x^1$, $2p_y^1$, $2p_z^1$. Finally, these secondary levels are paired starting from the lower energy upwards to higher energies. In cosms, this energy increase is running from the amplitude to the inside, this means reversed to electron shell of an atom. Starting calculation from the gravity center of the cosm R = 0, one had to begin with a multiple number of n and would reach the level n = 1 on the amplitude of that cosm. In this thinking reversed to the electron shell, an area of the main level **n** will be filled in the end if it is the smaller one of the number; for example, 2s after $3s^4$; 1s is the last. In this respect, firstly those secondary levels are double paired, which are given to each **n** – fourfold filled, for example $2p_0^4$ without filling of $2p_{+1/-1}$. So it may happen that in 2s still protocosms are missing. Because of the installation of the receptacle cosm by anticollapse, 1s must already be given, where also the protocosms are missing (see proton and neutron). Therefore here this Anti-*Hund's* Rule is valid:

> All levels must be given. Filling of them only can have less missing. Then the first levels are filled in the end.

**Mass block,** not mirror symmetric, but reversible from the other point of view of observation:

| KS | QN | QZ, WQZ |
|---|---|---|
| u n l m | | g e s t |
| 1 | 1 L | + + − − |
| **1s** | 1 R | + − − + |
| | 2 R | + + + + |
| | 2 L | + − + − |
| 2 | 1 L | + + − − |
| **2s** | 1 R | + − − + |
| | 2 R | + + + + |
| | 2 L | + − + − |
| 3 **$2p_0$** | ... | |
| 4 **$2p_{+1}$** | ... | |
| 5 **$2p_{-1}$** | ... | |
| Σ | | + 0 0 0 |
| | = | +g $0\bar{\mu}/2, 0\hbar/2$ |

| KS | QN | QZ, WQZ |
|---|---|---|
| u n l m | | g e s t |
| 1 | 1 R | + + + + |
| **1s** | 1 L | + − + − |
| | 2 L | + + − − |
| | 2 R | + − − + |
| 2 | 1 R | + + + + |
| **2s** | 1 L | + − + − |
| | 2 L | + + − − |
| | 2 R | + − − + |
| 3 **$2p_0$** | ... | |
| 4 **$2p_{+1}$** | ... | |
| 5 **$2p_{-1}$** | ... | |
| Σ | | + 0 0 0 |
| | = | +g $0\bar{\mu}/2, 0\hbar/2$ |

The antimass block of an anticosm (antiparticle) starts as shown by inversion:

| KS | QN | QZ, WQZ |
|---|---|---|
| u n l m | | g B e s t |
| 1 | 1 L | − − − + + |
| **1s** | 1 R | − + + + − |
| | 2 R | − + − − − |
| | 2 L | − − + − + |

| KS | QN | QZ, WQZ |
|---|---|---|
| u n l m | | g B e s t |
| 1 | 1 R | − + − − − |
| **1s** | 1 L | − − + − + |
| | 2 L | − − − + + |
| | 2 R | − + + + − |

One recognizes the result that each of the cosm level **n** = 1, **l** = 0 can show one missing protocosm. The secondary levels at first only get a quadrupole

from L and R. Then they are filled with further quadrupoles from **m** = -**l** to **m** = +**l**, or the last of R = 0 or the first of R = $R_o$ only remains equally as at proton. The next table shows the order of areas of cosm sentences better. Each secondary level n, l forces of a new mass index x.

In every cosm sentence, two angular momentum pairs of protocosms are given so-called two pairs of quadrupoles of respective wavequanta. The main and the secondary levels will be determined by the quantum number of external protocosm mass while inside the secondary level order only the spatial position **m** is actually working of a determined main level as wavequantum number. The trial of mirroring of a particle only changes the orientation of direction R and L but it does not change the primary spin $s_P$. Therefore the charges also do not change but the electric secondary spins $\mathbf{l_s}$ ($\bar{\mu}_{½}$) do it. Mirror symmetry does not exist here! Instead of this state we find a congruence of movement direction, which is laid upon.

We are explaining the mass index in that following table:

| Level | | | KS-no. | | $m_x$ | | |
|---|---|---|---|---|---|---|---|
| **n** | **l** | Area | **u** | **m** | Index x-no. | | |
| *1* | *0* | *s* | *1* | *0* | *1* | $m_1$ *min.* | $M_1$ *max.* |
| **2** | **0** | **s** | **2** | **0** | **2** | $\mathbf{m_2} > m_1$ | $M_1 > M_2$ |
| ***2*** | ***1*** | ***p*** | ***3*** | ***0*** | ***3*** | $\mathbf{m_3} > \mathbf{m_2}$ | $M_2 > M_3$ |
| ***2*** | ***1*** | ***p*** | ***4*** | ***+1*** | ***3*** | ***etc.*** | |
| ***2*** | ***1*** | ***p*** | ***5*** | ***-1*** | ***3*** | | |
| 3 | 0 | s | 6 | 0 | 4 | $m_4 > m_3$ | |
| 3 | 1 | p | 7 | 0 | 5 | $m_5 > m_4$ | |
| 3 | 1 | p | 8 | +1 | 5 | | |
| 3 | 1 | p | 9 | -1 | 5 | | |
| 3 | 2 | d | 10 | 0 | 6 | $m_6 > m_5$ | |
| 3 | 2 | d | 11 | +2 | 6 | | |
| 3 | 2 | d | 12 | +1 | 6 | | |
| 3 | 2 | d | 13 | -1 | 6 | | |
| 3 | 2 | d | 14 | -2 | 6 ... | | |

Cosm name: **Electron ($e^-$)**

| | | |
|---|---|---|
| KS | QN | QZ, WQZ |
| u n l m | | g e s t |
| 1 | 1 L | (+) (+) (-) |
| **1s** | **1 R** | **+ - -** |
| | 2 R | (+) (+) (+) |
| | 2 L | (+) (-) (+) |
| 2 | 1 L | + + - |
| **2s** | 1 R | + - - |
| | 2 R | + + + |
| | 2 L | + - + ... |
| Σ | | + -1 -½ +½ |

Asymmetry system MB+1
3PB are empty. One single PB in 1R
is filled with one negative $PK_{e^-}$.
This is the free wander-PK with 1,0011596 $\bar{\mu}_B$!

Symmetry system MB
As start of the mass block or the **Electron-body**
down to the innumerable cosm sentences.

= +g $-e_o$ ; $l_s > -½\bar{\mu}_{(e)}$ $l_t = +½\hbar$

Because spin $l_s$ essentially determines spins $l_t$ we leave off it in the table above. The electron is reversible. So the point of view changes its magnetic momentum and its key signature.

Cosm name: **Proton ($p^+$)**, (cf. section 4.8.)

| -1 | | |
|---|---|---|
| KS | QN | QZ, WQZ |
| u n l m | | g B e s t |
| 1 | 1 L | (+) (−) (+) (−) |
| **1s** | 1 R | (+) (+) (−) (−) |
| | 2 R | + + "+" + + |
| | 2 L | + − "−" + − |
| 2 | 1 L | + − "+" − − |
| **2s** | 1 R | (+) (+) (−) (−) |
| | 2 R | + + "+" + + |
| | 2 L | + − "−" + −... |
| Σ | | + +1 +1 +2.8 −½ |

Symmetry

+1.00013 $\bar{\mu}_{½(p)}$; "+" positive charge cloud,
+1.00013 $\bar{\mu}_{½(p)}$; " -" negative charge cloud,
mutually shielded.
Asymmetry

+0.7924 $\bar{\mu}_{½(p)}$; "+" positive charge cloud,
= +g +ħ +$e_o$ $I_s$ = 2.7927 × $\bar{\mu}_{½(p)}$ $I_t$ = -½ħ

In the second quadrupole of the second cosm sentence, the positive surplus charge is working. Two equal charges are not compensated totally in the first cosm sentence. So we see that illustration, which was drawn by Hofstadter when protons collided with smaller energies (cf. section 4.5.): at first a commonly positive potential that is followed by a negative potential and which is finally drawing a hard positive potential close to 2 × $10^{-16}$ m. (/Q 7a/, page 208f)

Unstable particle: **Neutron (n)**

That electron-protocosm in proton, which forms the neutron comes into the second cosm sentence where it has to be after quantizing. But its mass magnitude neither looks right for the first nor the second cosm sentence. So it rather moves higher but not as high as the first protocosms of protons. Momentum is just estimated (cf. section 4.8.)

| KS | QN | QZ, WQZ |
|---|---|---|
| u n l m | | g e s t |
| 1 | 1 L | (+) (+) (−) leer |
| **1s** | 1 R | δ− 0 0 $\bar{\nu}_{en}$-R − |
| | 2 R | + „+" + + |
| | 2 L | + „−" + − |
| 2 | 1 L | + „−" + − |
| **2s** | 1 R | + „+" + + |
| | 2 R | + − − $PK_n$ + |
| | 2 L | + „+" − − |
| Σ | | δ+ 0 +1.9 −½ |

Asymmetry
Here is the body: $\bar{\nu}_{en}$-R from PK of $\bar{\nu}_e$
+0.95652 $\bar{\mu}_{½(p)}$; „+" positive charge cloud,
+0.95652 $\bar{\mu}_{½(p)}$; „-" negative charge cloud,
Symmetry
+0.87981 $\bar{\mu}_{½(p)}$; „-" negative charge cloud,
+0.87981 $\bar{\mu}_{½(p)}$; „+" positive charge cloud,
-0.87981 $\bar{\mu}_{½(p)}$; „-" negative charge cloud,
-0.87981 $\bar{\mu}_{½(p)}$; „+" positive charge cloud,
$I_s$ = 1.91304·$\bar{\mu}_{½(p)}$, $I_t$ = -½ħ, charge is zero $e_o$

Deleted pages from 413 to 419 in the original. Read my newest work "**TBA III**", www.no-quarks.com, please!

## 2.14. Cosms and Radiation Cosms

Total radiation comes free after a basic process during the annihilation of particles and antiparticles. It plays a primary role in the feature of anticollapse (evaporation) of protocosms. There are particles and antiparticles changed into radiation. But some of them remain. That is a surplus of ordinary particles. Non-relativistic orbits are adjusted, which transitions are running quantized by radiation's reception and/ or sending.

### a) **Annihilation**

Annihilation is changing of electrogravitational pairs into e. m. radiation and vacuum-pairs. That's a "pair destruction". The electrogravitational cosms of ordinary feature - coinocosms - react with their contrary parts – with the anticosms - in such a reaction. Every stable electrogravitational particle type (gravitons, subtrons, protons and electrons as coino-particles) has its life in the shape of electric part at the gravitational body. The antibodies – the antiparticles – have negative gravity (that's my theses). Between both contrary gravitation phenomena, the repulsion is working while equal gravitations show attraction between each other. The electromagnetic qualities of attraction at a particle pair of coino or anti, maybe there are contrary charges or contrary magnetic fields, are forcing the gravitationally repelling of congruence. Then they find a protocosmic and e. m. attractive inside by congruence of gravity/antigravity. Both particles will be changed into gravitational vacuum, which is able to oscillate like the magon/antimagon-unit after its arising, provided that the excitation energy is given by the gravitomagnetic fields.

Inside a microcosm, actually protocosms are annihilated against antiprotocosms. In addition, s against $\bar{s}$ and g against $\bar{g}$ will be annihilated. Their resting mass will be totally missed. Then there were gammaprotocosms of higher density, which could be even stable. The gravitational forces $\pm F_o$ would be totally compensated. Instead of them now that $F_o$ are forces of pure electromagnetic cosms (radiation cosms).

The resting mass is no condition of the cosmogonic red shift. While pair annihilation of protocosms, already two pairs of magnetic "monopoles" are formed. Each of four magnetic "monopoles" finally was a magon or an antimagon. Its magnetically single-poled charge would be a different thing to the electric charge:

= e. m. magons are e. m. magnetic "monopoles" $e_m$. They are forming especially closed cosms in pairs: particle specific magon pairs.
= g. m. magons are g. m. magnetic monopoles $g_m$. One only knows them in elementary feature, only as pairs of the primary particles g and s.

1st consequence: magons are gravitomagnetically charged.
Because they are given equally as vacuum one cannot notice that quality.

= Charges are electric "monopoles" $e_o$. One only knows them in elementary feature q, therefore as pairs + and -.
= Masses are gravity "monopoles" $m_o$. They are forming closed special cosms: free particle specific pairs or surplus.

2nd consequence: the masses are charged electrically. Their intrinsic movements yield the real dipoles of gravito- and electromagnets. Because the parity of masses and charges is broken, surpluses are measurable. But the movement causes no break of the parity of the "monopole" pairs, so each real dipole reflects a zero balance inside itself.
(Please remark essentially: apparent "monopoles" are relativistically irreversible **dipoles**. )

Seen this way, magon pairs can also arise from annihilations: $+e_m - e_m$. Their types would be: g-, s-, subprotocosm-, p- and e-magon-pairs. At the same process of annihilation, the pairs of elementary charges would arise – briefly: Charge pairs as $+e_o$ and $- e_o$.

This would ask for the point of view that bound magnetic "monopoles" $+e_m - e_m$ are the cause of the transition of magnetic waves. Here we have the vacuum type: qm-vacuum.

Electric waves would be seen in the course of the splitting of bound electric “monopoles” – of the elementary charges $+e_o - e_o$. They are forming that q-vacuum.

Both vacua together can carry the combination of electromagnetic waves.

For gravitomagnetic waves there should be gravitationally magnetic “monopole” pairs and gravitationally mass pairs. The second kind of g- and s-pairs are already conceived. They are forming the g-vacuum. Now the gm-vacuum is missing yet. Gravitational wave cosms had to exist in a closed and special feature. If one would take the above called preconditions of e. m. waves, then a priori “monopole” pairs had to be given from the start of the matter existence. Otherwise there was no change.

It is the same when we can assume gravitomagnetic “monopoles”. They also should already exist in pair feature as gravitational radiation cosms derived of gravitons. Well, no special closed gravity “monopole” pairs are formed anymore. But the given pairs should be the condition that g. m. waves can be actually transmitted.

Inside a particle, positive and negative wavequanta already couple with each other in symmetry and in spatial symmetry of protocosm systems. Therefore, the effects of “monopoles” are compensating themselves to a dipole of zero action. We mean that a particle represents a gravitational “monopole”, an electric “monopole”, a gravitomagnetic zero dipole and an electromagnetic zero dipole at the same time. The wave “monopoles” are already compensated between themselves. During annihilation, a real particle will keep the zero dipoles, because they are already wave vacuum, and will send the “monopoles” into vacuum instead of them.

Vacua:

| | | | |
|---|---|---|---|
| 1. | $g - \bar{g}$ | g-vacuum | from two gravity “monopoles” |
| 2. | $q - \bar{q}$ $(e_o - e_o)$; | q-vacuum | from two electric “monopoles” |
| 3. | $g_m - \bar{g}_m$ | gm-vacuum | from two g. m. “monopoles” |
| 4. | $e_m - \bar{e}_m$ | em-vacuum | from two e. m. “monopoles” Both are magon pairs! |

There should be so much electromagnetically magon pairs as real stable particle pairs are possible: g, s, p and e. They already exist as aura of the real particles. When these particles annihilate against each other their internal masses will also be changed into e. m. magon pairs. Now the existing radiation clouds are denser. This could mean that they are not forced to adjust the wave energy of zero dipole formation from the dead receptacle cosms after coupling with the other radiations. They already would have own and almost closed radiation cosms. Each of such a radiation protocosm would remain existing for itself. Then it would be in the position to store the structure of these protocosms, which have to be reconstituted again.

Real primary particles:

| | | | |
|---|---|---|---|
| 1a. | $g^+$ | graviton | gravitational and electric “monopole”, |
| 2a. | $\bar{g}^-$ | antigraviton | gravitational and electric “antimonopole”, |
| 1b. | $s^-$ | subtron | gravitational “monopole” and electric “antimonopole”, |
| 2b. | $\bar{s}^+$ | antisubtron | gravitational “antimonopole” and electric “monopole”, |
| 3. | $g_m - \bar{g}_m$ | gm-vacuum | from two g. m. “monopoles”, |
| 4. | $e_m - \bar{e}_m$ | em-vacuum | from two e. m. “monopoles”, Both are magon pairs! |

If gravitation’s charges m can make a density and therefore a condition to form a protocosm and if wave charges of magnetism can do the same over their contrasts, then the static electric charges at the protocosms also should be allowed to reach such a high charge density in the course of the compression of the stable cosms close to their zero passage that this pre-cosmic state changes into a **charge protocosm**, which is charged or non-charged. Then the cosmic zero passing at R = 0, the so-

called “singularity“, is also closed, but electrically instead of gravitationally. This means that one can calculate the charge masses with the quantity of first-rate protocosms and get the horizon of the central protocosm with their energy. This central body would close all the charges. A danger that the cosm would be open while zero passage (because its protocosmic masses would be too small to close it) could be excluded.

The formation of g-vacuum looks like an electromagnetic force would press an irreversible gravity rod magnet into a gravitomagnetic coil; north pole N, against south pole S. This means to overcome the gravitational repulsion. In the center of the coil N on N and S on S make the effects of gravitational attractions, which sensitively change. In this respect, this coupling is able to vibrate. There is a condition given of transition of fallons along the stationary vacuum of gravity (fallons are those wavequanta of gravitomagnetism analogously to photons of electromagnetism).

For annihilation, the concept of “destruction" seems to be inapplicable. Gravitational and electric cosm vacua represent stationary matter, and they are a condition of the real spacetime. Really, each vacua are forming a system in an order like an octahedron. Then the vacuum of universe may be the ideal original crystal on which the being of matter actually causes. It is no monolithic block from one kind of octahedron but a hierarchically coordinated system of matching shapes. Inside, there the crystal disturbances exist – these are the coino-particles. The matter seems to be a doped vacuum-crystal.

Gravitational vacuum only consists of both octahedron types of the graviton/ antigraviton-elements and the subtron/ antisubtron-elements of which the first kind of elementary module is installed into the second kind of module. At every corner where an antigraviton is sitting, the next graviton is binding etc. They are filling the octahedron of the subtron vacuum. Electric vacuum is based on the octahedron of the graviton- and antigraviton magons and the subtron- and antisubtron magons. At the first state, we speak of g-vacuum (gravitational vacuum), at the second state, we say q-vacuum (electric vacuum). The distances of space diagonals will be determined by the relationship of the repelling and attracting forces. Into this state, the next vacuum crystal must fit. Deriving from this process, the matter forms a total system that is similar to an ideal transmissions (cf. section 4.5.).

Certainly, protons annihilate with antiprotons on different ways caused by their three electromagnetic momenta, which distribute their energy up to six momenta. Different momentum interactions are converted. As soon as the pair forming energy has come together, the proton pair can be synthesized from the gravitational and the electrical vacuum in the structure memory of a proton. The birth of a pair is possible only within the vacuum of a real particle. There the protocosms of the protons (baryons) and the protocosms of the electrons (leptons) are formed from the reborn graviton- and subtron pairs.

> Before the proton became a proton, it was an unstable baryon in which protocosm pairs of both the baryons and the leptons were positioned. In the course of the stabilization processes – the decays – protocosms of protons and also protocosms of electrons and of neutrinos annihilated. Therefore, the proton internally carries the different types of PK-magon and those PK-photons by which it is possible to rebirth of all the three kinds of cosm pairs. Proton is programmed as a universal particle. But in the electron, there are just those PK-magons and their PK-photons of electron protocosms or of neutrino protocosms.

Each cosms/anticosms stacked together by electrical states annihilating their insides. Only inside of the protons, electrons and neutrinos, the gravitons and subtrons appear. Therefore, their annihilation only is running internally where the gravitons/antigravitons and subtrons/antisubtrons are formed into gravitational graviton/antigraviton-trunks and subtron/antisubtron-trunks, which are bound as gravitational vacuum. They form out the gravitational vacuum cosms or the g-vacuum. Additionally, the charge pairs - the gravitonmagons/antimagons and the subtronmagons/antimagons – are produced. They themselves represent the electric cosm vacuum (q-vacuum), which is transferring an e. m. wavequantum in the course of the pair destruction. While pair forming, an e. m. wavequantum leads to reunification of gravitation and electrition at the reborn pair.

According to Einstein’s solution (see section 3.2.4.), the cosm vacuum represents the congruence of contrary movement functions of matter. Consequently, physical magnitudes of gravitation force and negative gravitation force as well as electrition force and negative electrition force (contrary charges) are compensated. Only the actions of gravitomagnets or/and electromagnets are magnetizing this

vacuum having a transition of gravitation wavequanta or/and electrition wavequanta. Let us explain it with the example of electrons $e^-$ and positrons $e^+$.

Their electric forces lead to attraction by q-spin in a common arc way to relative rest. The antiparallel q-spin forces the g-spin for asymmetry, because the electric charges meet themselves together inside of the particle pair. This process leads to the compensation of the electric and gravitational forces consequently up to the gravitation horizon of the pair $r_{o(e^-/e^+)}$ united. When the cosm pair has come close, its isolated momenta are working and forcing to the congruence of the complete hierarchy of both gravitational cosms $e^-$ and $e^+$. The gravitational force vectors of each cosm $\mathbf{F}_o$ will be compensated – also the forces at the electrogravitation radii $r_o$, which were calculated to infinite by the isolated special relativity:

$$F_o + (-F_o) = 0 \ . \qquad (2.14,1)$$

Such a gravitationally and electromagnetically isolated system has changed to gravitationally opened vacuum and free radiation. It dissolves itself totally into the elementary vacuum cosms of gravitons/antigravitons and subtrons/antisubtrons. The complete return to the elements of matter is caused now by General Relativity *Theory's* "stationary vacuum*"*. This graviton and subtron vacuum has its medial general validity for all particles and also for their subparticles, because it only consists of this **anything moved what is still no matter**.

But the radiations are kept in their closed cosms. On reason of the intrinsic change of density, the radiations will be cosmogonically shifted to red even without presence of rest mass when the elongation is arising to the amplitude of the gammacosm. Each particle gives free one pair of gammacosms. After annihilation, two radiation cosm pairs appear as magon pairs. They are working to the outside like a vacuum of electromagnetism. Now the external energy of that resting masses died must be conserved. Contrarily oscillating radiation cosm pairs in attraction and repulsion let arise two times of one magnetic field, which is vibrating during one period. Therefore, at the e. m. cosms, the movement functions are working on in the shape of the both added magnetic vectors, so that two photons will get free and they move there along the given radiation cosm pairs in vacuum and along the real particles.

When these photons come into a cosm, no matter if real or vacuum cosm, the reversion of energies is working at the inside according to the eq. (2.7,12) dependent on the cosm amplitude and the protocosm amplitudes. At the inside, the protocosms and gammaprotocosm pairs serve as real fields of forming new protocosm pairs. Always then, if the number of the formed protocosm pairs reaches the necessary number to make a particle pair, this new pair will be sent to the outside. An outer energy is changed up to an inner energy at the inside of the receptacle cosm. It runs through the elongations under Compton effects of weakening and then it produces the different types of protocosms. Radiations cannot escape directly from a cosm. That escape is only possible over the detour of forming of particle pairs and/or their annihilation.

Following our construction, it seems to be possible that electrically and completely neutral particles would overlap and annihilate themselves voluntarily. Their annihilation as well as their pair forming are then possible by their electromagnets at all. So the annihilation of neutrons is able to be explained, but it isn't for neutrinos, which are captured by different reactions. An annihilation is running after that model:

$$K_{gq}^{+} + \overline{K}_{gq}^{-} \rightarrow g/\bar{g}\text{-vac.} + s/\bar{s}\text{-vac.} + q_g/\bar{q}_g\text{-vac.} + 2\gamma_K \ .$$

gravitational vacuum + electric vacuum + radiation

mass - antimass charge - anticharge wavequanta.

Their radiation cosms were bound at the cosms. Then they were becoming independent:

$$\gamma\text{-}K/\overline{K} + \gamma\text{-}K/\overline{K} \rightarrow \gamma\text{-}K/\overline{K} + \gamma\text{-}K/\overline{K} \ .$$

There are $K_{gq}^{+}$ as the electrogravitational coinocosm/ as example, $\overline{K}_{gq}^{-}$ as its anticosm; g/$\bar{g}$-vacuum as graviton vacuum, s/$\bar{s}$-vacuum as subtron vacuum, $q_g/\bar{q}_g$-vac. the electrograviton pair (as elementary charge pair) and $\gamma_K$ the e. m. energy in the feature of two e. m. wavequanta in the dimension of the passing rest energy of both electrogravitational cosms K. In the content of the equation, the conservation cannot be recognized why both real cosms already exist in their aura, which are formed by the magon pairs $\gamma$-K/$\overline{K}$ (radiation cosms). They are conserved in vacuum. The annihilation equation is irreversible without participation of a real cosm (incl. a vacuum cosm) working as mediator of the structures, which have to be formed out. It seems as if the particle pair has died and has given its light into its soul. Its death distributes all the gravity matter in the shape of its vacuum without conservation of the identity. Initially, a really living cosm as the electrical may be possible to arrange the radiation being a kind of soul to a reborn cosm pair.

When an electrogravitational protocosm pair annihilates in analogy to the cosms, two protocosm photons should arise and run after dissolving of structures to g- and q-vacuum! At the same time, the magon pairs of protocosms must form radiation cosms or gammaprotocosms, which are open or divergent. They just represent a concentration of the particles annihilated at the inside in the shape of e. m. and g. m. wave energies. The energy of the **PK-photon** can be bound as wave energy equivalence of protocosm masses (cf. section 2.8.7.):

> The special energy density of the PK-photon around the gravitationally important collapse radius $r_k$ is essential for protocosm pair forming when it is blue shifted on its way again and when it meets a real protocosm.

Here the problem of W-Z-bosons of “electro-weak theory" finds a different explanation with working together of PK-photons forming and annihilating of protocosm pairs, which are inside the particles (see sections 4.7. and 4.10. or TBA III). At graviton divergence, the energy of protocosms finds its end. The following annihilation conditions are valid below the pair forming energy marked in brackets:

1. Deleted.

2. $e^{-} + \bar{e}^{+} \rightarrow$ g-vac. + q-vac. + $2\gamma_e$ below of $E_{w\gamma} = 1.1857 \times 10^{10}$ K

   $p^{+} + \bar{p}^{-} \rightarrow$ g-vac. + q-vac. + $2\gamma_p$ below of $E_{w\gamma} = 2.1771 \times 10^{13}$ K

---

Internally:

3. $s^{-} + \bar{s}^{+} \rightarrow$ g-vac. + q-vac. + $2\gamma_s$ below of $E_{w\gamma} = 6.5899 \times 10^{27}$ K

   $g^{+} + \bar{g}^{-} \rightarrow$ g-vac. + q-vac. + $2\gamma_g$ below of $E_{w\gamma} = 1.2100 \times 10^{31}$ K.

4. $PK_p^{-} + \overline{PK}_p^{+} \rightarrow$ g-vac. + q-vac. + $2\gamma_{PK_p}$ below of $E_{w\gamma}$ about $2 \times 10^{15}$ K

   $PK_e^{-} + \overline{PK}_e^{+} \rightarrow$ g-vac. + q-vac. + $2\gamma_{PK_e}$ below of $E_{w\gamma}$ about $7 \times 10^{12}$ K.

5. As under position 3rd, g- and s-pairs annihilate and form extreme quantities of photons of the feature $\gamma_s$ and $\gamma_g$. Taken together, they close the space totally by their density.

Two **PK-photons** arise from annihilation of a protocosm pair of the same type. The protocosms will be dissolved to vacuum. Only their external energy keeps stored at both specific PK-photon energies and drives one round in receptacle cosm back to their start. Additionally, the internal photons of the annihilated particles and antiparticles of the protocosm pair form two pairs of radiation cosms – two PK-magon pairs. Because the internal light rays split into momenta analogously to both separated external photons, each PK-magon pair tries to separate. The contrasts allow to form one PK-magon and one PK-antimagon from it, which remain coupled with each other. They are oscillating damped in the distance of their energy centers by which the photon wave continues in the space of magon pairs.

Particle pairs only annihilate effectively at the underrun of the thermodynamic condition. This means that the rate of destruction is always larger than the rate of pair forming when e. g. the electrons underrun their formation temperature.

Deleted.

The destruction factor $f_a$ is dependent on mass and antimass, which repulsion force has to be overcome putting the oscillation spheres into each other. It is also dependent on the external and/or the magnetic force and also of the gravitation radii. The destruction factor is particularly large for electrons. With the gravitational force equation (3.2.3,46) we get the fourth potency. For electromagnetic force one reduces with the radius quadrately; then squaring remains in the end:

$f_a$ = relative destruction factor to proton p: $f_a = 1$,

$f_a = 1836^2 = 3.37 \times 10^6$ for the electron relatively to proton,

Deleted.

Inside the cosms are charged protocosms and antiprotocosms, which directly annihilate.

Deleted.

The equivalence energy $E_{w\gamma}$ in temperatures corresponds to that energy, which each photon is transferring. In the cosms of protons p, electrons e and neutrinos $\upsilon$ the heat of the putative “big bang" has been quasi packed. Only there the energy of annihilation of gravitons g and subtrons s and their antis can be running back into the necessary energy of pair forming.

The electric elementary cosms are special particles with a rest mass how we can judge neither as the known coinomass nor as the antimass. But it is programmed in a special resting magnitude, which exists additionally to the parity of gravitation. We call it electrition. Its particles, the ELECTROGRAVITON q and the ELECTROANTIGRAVITON $\bar{q}$ – do not exist freely separated from each other; the only exception: coupled at primary, elementary cosms and their antis like gravitons, subtrons, protons, electrons and neutrinos. They are contrary pairs and form the base of the stationary electric vacuum and the base for transmission of so-called “electric" fields at the same time. The intrinsic “rest mass" of these particles is an electric charge dimension $e_o$. In electric vacuum it compensates the anticharge:

$$e_o - e_o = 0 . \qquad (2.14,2)$$

Electrogravitons have positive electric charge (electric mass) that elementary charge $+e_o$. Electroantigravitons have the negative elementary charge $-e_o$.

Although the charge contrasts are compensated every single charge movement means a forming of magnetic field. By additional adjusting of rotation direction of two particles in pair, a magnet is formed that magnetic charges correspond to the wave charge, which is called photon $\pm e_{w\gamma}$ working as momentum mass $m_{w\gamma}$.

A radiation cosm is brought together by the sum of all momentum masses acc. to (3.2.3,6)

$$M_{w\gamma} = \Sigma\, m_{w\gamma(i)} \qquad (2.14,3)$$

$$\pm m_{o(magnet)} = d\,/M_{w\gamma} \quad . \qquad (2.14,4)$$

The isolated momentum mass forms a magon including an antimagon as pair over the black-hole-state under the condition of Friedman's photon density (see section 3.2.3.). During this process, an external cosm mass $m_{o(magnet)}$ will be arrived, which is equivalent to the rest mass $m_o$ of the annihilated electrogravitational cosm:

$$\pm m_{o(magnet)} = m_{Ao(grav.)} \; . \qquad (2.14,5)$$

The real cosm already surrounds itself with the aura of the specific magon pairs. For example, the electron and also the positron carry a respective electronmagon pair, which amplitude equals the magnetic amplitude: $R_{o(magnet)} = R_{o(grav.)}$.

The magons/antimagons in the feature of receptacle cosm function work as data memory of the installation of the annihilated gravitational cosms:

The 1st main clause of thermodynamics is fulfilled.

In every specific electrogravitational receptacle cosm the structure analogous magon/antimagon-pairs are isolated.

Let us look at the inside of a magon. There the photons are in principle running on the complete parity orbit of the perimeter of the receptacle cosm amplitude $R_o$. In this respect, the receptacle magon has the shape of an electric spherical wave at the inside. Magons/antimagons are "pulsating light bubbles" seen internally. This fact corresponds to the radiation cosm solution of A. Friedman (cf. section 3.2.3, page 460).

For one particle pair, which is to form again only one magon pair exists in vacuum. But each gamma-quantum could form a particle pair under conditions of higher energy. This would give doubling of particle pairs. The balance will find its end by the finitely isolated inner energy of any cosm: there wouldn't remain some energy for the other half of gamma-quanta. In this respect the only consequence is a balanced recovery of the particle pairs (see section 3.1.).

Each annihilated stable particle pair gives a specific pair of magons/antimagons $q_t/\bar{q}_t$ of the partial charge $\pm e_t$ (a charge quantity of multiple elementary charges $\pm e$ has the symbol $\pm Q$), for example:

electron magons $-e_e$; positron antimagons $+e_e$.

Here both masses coming together lead to an annihilating unit, which dissolves the internal mass of leptons $M_{o(e)}$- $\bar{M}_{o(e)}$ into graviton vacuum and subtron vacuum and into electrograviton pairs and radiation cosms. This way in the same volume the double wave mass arises, which is more than necessary for closing of an electric cosm or a radiation cosm (after Friedman's solution). Consequently, these two states can grow to the double total amplitude or divide themselves into two cosms, which would be coupled with each other because of their contrary charge $+e_e$, $-e_e$ as an electrograviton pair $q_e/\bar{q}_e$.

Storing exactly the rest energy $2E_{Ao}$ of an annihilated electron with the wave energy $2E_{w\gamma}$ of both photon electromagnets, $E_{w\gamma} = E_{Ao}$, the relationship between $v_{w\gamma}$ and c would be interesting. Because (2.12,6) and (2.12,7), it is valid for n = 1 as follows:

$$m_{w\gamma(1)} \times v_{w\gamma(1)} \times c = m_o \times c^2 \qquad (2.14,6)$$

$$m_{w\gamma(1)} \times v_{w\gamma(1)} = m_o \times c = p_o \; . \qquad (2.14,7)$$

Only then, if the wave mass (momentum mass $m_w$) is just reflecting the equivalence of both masses in $m_{w\gamma(1)} = m_o$ at its birth from annihilation, the wave velocity relationship is assumed of equality:

$$v_{w\gamma(1)} = c \; . \qquad (2.14,8)$$

It's plausible now that every velocity change of $v_{w\gamma(n)}$ is answered by a relativistic change of wave mass $m_{w\gamma(n)}$. In the course of the interaction of the photons born with bodies, given a different movement relation or a different space order (density), the increased or reduced wave energies appear.

If for each photon only one single charge would rotate with light velocity on the radius $½R_o$, then half a spin would arise of this photon as an electromagnet and additionally as an electric partial charge. We know that photons don't have such an electrostatic charge. Therefore, two contrary charges will be moved with light velocity in contrary directions or rotate, and they will compensate each other this way. During this process finally the integer spin of so-called Bose statistics will be formed:

$$½ + ½ = 1 \qquad \text{or} \qquad -½ - ½ = -1 \qquad (2.14,9)$$

Because of the energy conservation law, the contrary external movement functions of the electron/positron pair – the external rest energy $\pm E_{Ao}$ – is stored at the pair of charge. Including the own internal mass $\pm M_{w\gamma}$, every radiation cosm connected in pair formation will have to make an external movement. The contrary charge will attract it, the centers of charges will be congruent and will press them out of each other from there as known of electrodynamics. That movement follows the principle: the acceleration energy to the center will be potentialized again after the course of the deceleration and central passage to be kinetic again after the relative amplitude rest. It looks like a rod magnet is vibrating through an electromagnetic coil so that after a complete period, the total movement energy would be changed into both e. m. wavequanta – into these photons. If a negative partial charge $-e_t$ falls to the right in a right arc onto a positive partial charge $e_t$ falling to it in left arc, then both things form each half the part of the equal electromagnetic vector additionally. The dipole radiates two waves or wavequanta (photons) into two preferential directions.

This phenomenon of paired charges in electric charge vacuum, which is able to magnetize and to carry electromagnets as its photons is unique. The radiation cosm forms a system of magnets! Therefore, it wasn't given to discuss the gravitation in the same manner schematically like the "QED" has done it to come close to a kind of "united field theory", because the electrogravitational total cosm is forming the system of magnets (photons, fallons) **and** of charges (real particles). Instead of this, we install the theses:

> That momentum taken and given by magon pairs doesn't change anything at the magon/antimagon rest masse $m_{o\gamma}$ (or at rest charge $e_t$), but it well changes their wave mass $m_{w\gamma}$ ($e_{w\gamma}$), which represents its photon potency dependent on its velocity.

The electric or gravitational cosm pair is respectively able to transfer a wavequantum – that so-called photon or fallon. At first, this state is only the **potential photon $\gamma_q$** or potential fallon **$\gamma_g$**! We call it PHOTON POTENCY and fallon potency (it is simply a magnet). Only during a momentum exchange between the electric particle pair (its wavequantum energy of potential photon) and the electrogravitational cosm, the action is arising that was simply named "the photon". We call it the EFFECTIVE PHOTON and the effective fallon. Photon potencies as effective photons fundamentally mediate elementary angular momenta h. Their measurement is dependent on its momentum transfer velocity $v_q$ (cf. section 1.1.).

The magon vacuum is able to magnetize with the electromagnetic wavequantum energy. By this process it gets its long-distance effect over the short-distance effect. Graviton magons with elementary charge $+e_o$ inclusively their antis ($-e_o$) and subtron magons and their antis ($e_s = \pm e_o/1836.153$) and

also magons of protons and electrons are taking part of every momentum exchange of vacuum magons. One single photon potency can make interference “with itself” at a dual-slit, because it does not have interference with itself but with the continued magnetizing at the substance of that gap over the magons/antimagons of the electric vacuum – a moved electromagnetic effect is working all over. A photon is no particle. Therefore, it cannot be seen as single one in arbitrary positions although it even is a single photon. Every single photon is dependent on Huygens’ principle.

After all reactions, we always find again the stable particles as the cosms at the end of the decay. The leptons only are able to form themselves because their elements, the gravitons and subtrons, are given in stationary vacuum and their electric charge trunks are given as lepton magon pairs in electric field.

**A particle’s identity cannot be broken while it becomes unstable!**

We also formulated this sentence as inconsistency clause of stable cosms. “QCD" contradicts our conclusion: in its theory, all the particles are able to dissolve into “quarks" (this “state" blurs identity consequently). Leptons like baryons would purely arise by chance when freezing out. The “QCD“ speaks about such an idea far of reality, because it has blurred the concept of particle purely energetically.

**Each cosm seeds consist of cosms, which once were stable. Their unstable state decays to corresponding moved cosms under setting free stored wave energy (momentum transfer with pair forming and exchange of protocosms).**

That single electric charge of the electron is such a charge that forms this surplus inside the electron (odd number of contrary electric elementary charges at protocosms). In this respect, the electron has an externally electric elementary charge. After annihilation where this passed elementary charge is only a part of a magon, it determines the inside of that magon in the end. Only then, if such a magon is taken captive again while a pair forming together with an antimagon and a common wave energy came into the prison of an electrogravitational electron, the bonding of its isolated elementary charges at protocosms of the arisen electron is causing the independent action of electric elementary charges to the outside. Then their electric cosm density is too small to close the electric coordinate system of the electron.

The magon pairs of all stable particles are positioned in general vacuum, for example:

subtron magon with $+1.013 \times 10^{-12}$ kg or $+8.73 \times 10^{-23}$ C = $+e_s$;

subtron antimagon with $-1.013 \times 10^{-12}$ kg or $-8.73 \times 10^{-23}$ C = $-e_s$.

Stationary vacuum forms the movement medium of the real electrons and positrons. Because the electrogravitational pairs inside of the receptacle cosm are limited to make asymmetry, only so much pairs are able to annihilate like there were formed before. Then the pairs crystallize to vacuum while the gravitational rest energy escapes now as electric wave energy. Additionally, we find the surplus of coinoparticles, which were adjusted since the ever beginning. So the receptacle cosm is filled of “light” and of structures of real particle asymmetry. After these connections in a closed cosm, the cosm pair annihilations and destructions become ideally reversible processes. Death of heat will never happen.

Our cosm vacuum theory contradicts the interpretation of Dirac. He became wrong of the infinity of the wave relations and therefore he said that the vacuum, this is the wave-vacuum (compensations of photons) would be infinite. His statement would be correct, if the receptacle was infinite. It remains however wrong, because the spacetime is spatially limited and temporally separated and limited by periods. Taking this fact into account, every wave relationships in space and time are limited. The quantity of the cosm vacuum has no importance in a mathematical term without guiding conditions, although it only can be valid as finite, because there only can be a finite quantity of solutions of cosms and their vacua guiding by conditions of ideal transmissions.

b) **Anticollapse or Evaporation**

The **gammaprotocosms (γ-PK)** correspond to the **protocosms (PK)** being **open pre-cosms**. One could say that they are **radiation protocosms**. From their existence the hypotheses follows that they even are able to project over their quality of e. m. protocosms and that they are forming magnetic monopole pairs to the outside. In closed cosm, the sum of all this magnetic cosm energy would also form out an addition, which would close again the horizon mono-magnetically but bipolarly.

Just the same as the sum of all the protocosm masses $M_{o(PK)}$ will be added to the **amplitude mass $M_{o(K)}$** of a **cosm**, the wave masses of gammaprotocosms $M_{w(\gamma\text{-}PK)}$ are giving together that necessary amplitudical wave mass $M_{wo(K)}$ of stable **radiation cosm** or of **gammacosm** in the stable receptacle cosm.

Wave masses can be shifted to **red or blue** that cannot be done with resting masses. Therefore the compactness of a radiation cosm will become to the function of cosmogonic red shift of its inner parts in the shape of radiation protocosms. Remark! Running along with the spacetime, the real volume is becoming larger and the momentum density is decreasing continuously. That signal runs now into its red shift – just because of the density reduction. This way, the e. m. signal can also be shifted to red cosmogonically in a radiation cosm without presence of a mass coming from inner states, which are influenced by density reduction during its running up to the amplitude.

The biggest quantity of single radiations and their energy property (frequency) comes from the center of the universe. There, the externally heavier and internally lighter protocosms are inflated with essentially more radiation energy (mass and antimass) relatively to protocosms in the proximity to the amplitude of that receptacle cosm. In the center, the factor of about $10^9 : 1$ = photon : particles is valid for the measurable radiations. In the proximity of the amplitude, they only correspond to the factor of almost 1, assumed of 1.125:1. The last protocosms in n = 2 open and store the last necessary amplitudical wave mass $M_{wo(K)}$ closing the radiation cosm. Just like this event is running, the rest mass $M_{o(K)}$ closes the gravitational cosm in this moment. These both types of cosms are causing themselves.

Now it looks as the rest mass $M_o$ would bind the radiation and curve the space for radiation like one says so after General Relativity Theory. **In reality, the radiation space and the gravitation space are curving the whole state into the closed state during the same process making a stable cosm.** Only this community curves the space to itself. If the radiation density wouldn't turn around, the space would be open again and again no matter how much mass it would have internally. Just this an observer can watch at the protocosms and subprotocosms. There, the radiation density is not able to close the space inside of the borders of protocosms. It soaks over the borders and negates the horizon of rest mass M, becomes red shifted in receptacle cosm and comes to reduction of energy this way. This process opens up the protocosm. A discrepancy between the radiation mass and the rest mass had its effects.

The cosmogonic red shift has the largest value in the initial elongation from the center of the cosm. It is decreasing to 3 K, if the spatial extending is coming to the end at the amplitude. That initial energy amounts about $6 \times 10^9$ K. After spatial extending, which it is running along the wave masses being about $10^9$-times above, the rest mass of the radiating protocosms are reduced so strong in its frequency that they only have 1:1. Here we have a red shift with also about $2 \times 10^9$ against 3 K. Coming to the amplitude, the γ-wavequanta - there born in anticollapse – become less but more energetically by decreasing red shift.

This protocosm shield is forced by velocity dilation to open just on the amplitude. But there at this time the radiations of the other protocosms arrive so that the just opening protocosm is immediately closed by this energy again. Then the oscillation of protocosm in the shield comes close to the oscillation of its receptacle cosm. This is no equivalence but an approximation. From this we recognize the resonance of stability by dilation.

Our new stability condition is now:

| For receptacle cosm | for a protocosm |
|---|---|
| $M_o : M_{wo} \geq 1 : 1$ | $M_{o(PK1)} : M_{wo(PK1)} \leq 1 : 1$ |

For a subprotocosm of the first rank SPK1 inside an arbitrary protocosm, there is a divergent stability condition. Then the wave mass is less heavier, because its amplitude grows over the mass amplitude, and the horizon is negated.

If gamma radiations came from more central protocosms, so they would stay closed gammacosms because of their density. Multiple numbers of their particles and antiparticles annihilate in relationship to their remaining coino-particle surplus. The addition of such of all internal masses would be more than the mass of the receptacle cosm. Therefore we have one of the dialectic conditions:

The radiation of the receptacle cosm center will be red-shifted most strongly. So that wave mass $M_w$ does not reach for closing. Only the last essentially less red-shifted radiation closes the sum of wave mass $M_w$ to be the gammacosm.

During the installation phase of destruction one would be able to measure that the photon number per particle is decreasing in smallest dimensions of about $10^{-7...-9}$. It isn't $2 \times 10^9$ anymore but $2 \times 10^9$ minus 2 up to 200 gammaquanta. That's been the one feature. In the second feature, the intensity maximum of background radiation had to drift. The less red-shifted parts of small intensity at all will be packed and disappear by their protocosms from above. Stronger red-shifted parts remain. This means that the warm flank dies out.

## 2.15. Planck's Length

The so-called Planck length $l_{Pl}$ has the value:

$$l_{Pl} = (G_v \times \hbar/c^3)^{1/2} = 1.6162316 \times 10^{-35}\ m \quad . \qquad (2.15,1)$$

(/Q 11/, page 114 (1))

One suspects to have found elementary magnitudes. We wonder. Can one put down subjective number-relations to objective numbers?

Our theses is:

> It will be shown that the connection of constants in (2.15,1) only are reflecting constants again. In this respect, Planck's length is just an arbitrary part of an objectively differently positioned amplitude or oscillation length.

We set $l_{Pl} = R_{Pl}$; the length is amplitudically determined by ħ. Using (2.4,20), we also get $\lambda_{Pl}$ (Planck oscillation length). With that the Planck energy $E_{Pl}$ is able by eq. (2.4,9):

$$E_{Pl} = \hbar \times c / R_{Pl} \quad . \qquad (2.15,2)$$

Additionally, we find its Planck mass $m_{Pl}$ because of eq. (2.4,16):

$$m_{Pl} = E_{Pl} / c^2 \quad . \qquad (2.15,3)$$

With (2.4,20) and (2.15,2) are valid:

$$\mathbf{d = m_{Pl}^2 \qquad is\ our\ constant\ d = 4.737 \times 10^{-16}\ kg^2\ !} \qquad (2.15,4)$$

$$b = E_{Pl}^2 \quad . \qquad (2.15,5)$$

We firstly found nothing else than our own mass relation constant and the energy relation constant.

The constant amplitude force $F_o$ (that maximal electrogravitational cosm force) of (3.2.3,51) will be filled to be the gravitation force of Planck dimensions:

$$F_o = G_v \times m_{Pl}^2 / R_{Pl}^2 = c^4 / G_v \quad . \qquad (2.15,6)$$

This also means a calculation of constants.

Finally, we find a constant of the amplitude mass $K_{Pl}$:

$$K_{Pl} = m_{Pl} / R_{Pl} = c^2 / G_v \qquad ; \qquad (2.15,7)$$

$$K_{Pl} = 1.34665145 \times 10^{27}\ kg\ /m \quad .$$

For a given cosm amplitude $R_o$, its isolated mass $M_o$ can be calculated:

$$M_o = K_{Pl} \times R_o \quad . \qquad (2.15,8)$$

This mass can be eased up till the gravitation horizon $r_o$ of a cosm and still reflect the same amount:

$$M_o = K_{Pl} \times \tfrac{1}{2} r_o \quad . \qquad (2.15,8a)$$

For a protocosm with its mass $M_{o(PK)}$ that is equivalent to the mass of cosm $M_o$, the same term is valid:

$$M_{o(PK)} = K_{Pl} \times R_{o(PK)} \qquad \text{(cf. (2.7,4))}. \qquad (2.15,8b)$$

Interesting is this following fact:

$$\mathbf{M_{Pl} = m_{Pl}} \, . \qquad (2.15,9)$$

Inner and outer (internal and external) Planck mass are the same.

In the context of this theory, we see this soberly. The equivalence of both mass features does not show the smallest and heaviest “unit-quantum" of “Big Bang" like “Quantum Mechanics" supposed. It is different. We found a fundamental combination that disproves the Big Bang Theory in principle:

Mankind fixed the amounts of dimensions and constants arbitrarily dependent on free will. Sometimes when the mathematical knowledge circle is able to be closed by the closed and ordered matter, all these arbitrary values must find its circle into each other. This way, this is an important sign of the **ideal oscillator** as the **ideal transmissions**. Philosophically, we see here the finiteness of the complete system of matter in the course of infinity existing below or above it. As expected, we have found the finite concatenation of constants.

When we are searching for the heaviest gravitational cosm – that material elementary cosm of gravitation (that graviton) – then we must orientate us at the value of the electric elementary charge $e_o$ and make its conversion onto an electric mass $m_q$. Here we find the electrograviton that electric force equals the gravitational force of graviton. Now the circle is closed, because the electric things determine the gravitational things and vice versa, the gravitational states determine the electric states during the fundamental oscillation of matter (cf. section 2.5., p. 328).

## 2.16. Field Definition

The differential-geometric description of force terms of masses or charges leads to the concept of "vector field" in the feature of force as vectorial magnitude. Really, a vector exists just with the existence of the electrogravitational charges and their magnetic effects. The tendency of making an absolute concept of field, less a field of charges more a field of vectors, is clearly to be seen as interpretations of General Relativity Theory, just as one sets a field to an electromagnetic charge in Maxwell-Theory-Interpretation without explaining that each field represents an order from charges and anticharges.

Field definition

> Consequently, we want to see the **field** as moved **distribution** of charges and anticharges (of cosms and anticosms in receptacle cosm), which include a secondary field of interactions by their wavequanta.

In principle, the electrogravitational field is a finite distribution of electrogravitational cosms and anticosms in its receptacle cosm.

> We distinguish
> - the vacuum field (cosm/ anticosm field as "medium"),
> - the cosm field (as "capacity") and
> - the wavequantum field (as "inductance").
>
> So the vacuum field is explained as a magnetizing (and polarizing) of stationary vacuum. This is the so-called force field.

If at least a second dipole is located in vacuum (of cosms or wavequanta), this one or both will be set into motion by that **vacuum magnetizing (polarizing)**. A field in the shape of vacuum magnetizing then only has importance or a sense, if further poles are given.

> The general field reflects the primary magnetizing (polarizing) in vacuum.

Each magnets of both features of charges are forming the carrier of the field.

From the start of the oscillation, the field is also the distribution given of all the sub-spacetimes, which exist as elementary cosms of a receptacle cosm of which each cosmic hierarchical plane has its intrinsic amplitude limit R = 0 and its border area limit $r = r_o$. Under the cosmic hierarchical plane, we always understand a receptacle cosm in which just the judging observer is located. Our cosmic hierarchic plane has the name "universe". This universe is stable and absolutely locked. Its elementary cosms are forming unstable structures although they only can consist of the cosms of protons, electrons and electron neutrinos.

Though we systemize the field in principle corresponding to its parts, we must order the cosms carefully. For our overviews, we briefly sign them as: cosms - **K**, wavequanta - **WQ**, vacuum cosms – **VK** (from German signs of the German original theory).

Partition:

1. Cosm fields (primary magnetizing of vacuum, to see as polarizing)

If there wouldn't be cosms (charges and masses), vacuum couldn't be opened or magnetized! Cosms are internally oscillating with v = c reflecting the external wave while they are coupling along the vacuum with velocity of c (irreversible bonding).

Coinomass field or antimass field (gravitational or electric monopole field):

- Gravitational: Primary dipoles of mass (gravitation charges)
  g-cosms, gravitational cosms
  g-anticosms, negatively gravitational cosms
  (stable particle masses = gravitational cosms or anticosms.)

- Electric: Primary dipoles of mass (electric charges)
q-cosms, electric cosms
q-anticosms, negatively electric cosms

- Magnetic: Primary dipoles of wave mass or momentum mass (magnetic charges)
(magons, antimagons always in pairs, then in compensated contrasts
a) gravitomagnetic radiation cosm pairs
b) electromagnetic radiation cosm pairs)

Because of their primary coupling structure, they are primary dipoles, which dipole character remains irreversible. That is the phenomenon of monopole, for example:

the proton (g-cosm with q-cosm as a g-q-cosm),

the positron (g-anticosm with q-cosm as a $\bar{q}$-q-cosm)

the negative elementary charge $-e_o$ (q-anticosm $\bar{q}$);
the magnetic monopole always in pairs with antimagnetic monopole.

The compact mass had to rotate with the perimeter velocity $v_u \geq c$ changing the polarization that is not allowed to it and why this circumstance finds its expression in the special relativity.

2. Secondary wavequantum fields (secondary magnetizing of vacuum)

Wavequanta oscillate with $v < c$ in the transversal layer by which they are coupling with c over the vacuum. Both wave features, g. m. and e. m. ones, will be described by relativity theory, this way.

Fields of rotating mass (gravitational or electric magnetic field):

- Gravitational: gravitomagnets or mass dipoles

g-wavequanta / fallons = gravitomagnetic wavequanta,

- Electric: electromagnets or mass dipoles

q-wavequanta / photons = electromagnetic wavequanta.

They are secondary dipoles dependent on limit movement with velocity $v<c$ of their sources, which dipole character is able to turn around with relative velocities below the vacuum wave velocity: dipole phenomena of the Earth's magnetic field and the Earth's gravitation dipole e. g. superimposed by static gravitation. Each movement in principle is a curved movement. If the magnets interact with $v = c$, they are not able to turn around to its other side (boson character).

- Wavequanta are running because there are vacuum cosms.
- Vacuum cosms are electrogravitational cosm pairs.
- Cosm pairs consist of **cosms** and anticosms.

The last types are connected with each other. When cosm pairs are hardly be moved (rather they are in resting locations), their magnetic energy $E_w$ diverges to zero. Every oscillation of both partners – of cosm and anticosm – generates the magnetic energy $E_w$ between almost zero and a spacetime-specific limit below of infinite.

3. Vacuum cosm fields

a) Convergent congruencies of elementary gravitational cosms and anticosms = Generally cosm vacuum. Each pair there is named vacuum cosm. The existence of real charges in quantitative asymmetry of vacuum prevents from convergent congruence in vacuum.

b) Divergent congruencies of wavequantum superposition = Wavequantum compensation or “wavequantum vacuum"

Convergences and divergences are able to be opened.

The material field of coinomatter particle surplus, in unity with the stationary vacuum, consequently forms the spacetime – the cosm – that’s a pulsating spherical world, which cohesion and installation are able to be determined only by the concepts of waytime or spacetime at the inside. All the cosms of the vacuum field and of the cosm and wavequantum fields in universe are bound with indissoluble connection – in which we can think of closed transmission lines working with v = c (movement lines, waytime lines, geodetic lines) connecting all the moving things of matter with each other as ideal transmissions. Images of movement lines as still curvatures are the expression of the charge shifts in vacuum. As long as there is an outside, they are carrying on the movements to the outside over the vacuum also existing there to the end of force projection – to the horizon of universe vacuum.

## 2.17. Force Definition and Effects

Dependent on the originally given connection of movement lines of cosm limits, we see the movement image of removing points as repulsion and coming together, we see the effect as attraction. Just because we people try to change such events, we must do something against the given states – the anti-force but actually just the **anti-movement.**

> The force is the expression of the objectively and really existing movements of elementary cosms in a receptacle cosm from the start. Between them, the relationships are able to be conserved or changed by the exchange of angular momenta, which are switched by wavequanta. It is not an “exchange of particles“, which would lead to the force than much more the interaction of wavequanta.

According to the eq. (2.4,3), (2.4,7b), (2.4,11) and (2.9,24), we get the term of wave transferred force $F_w$:

$$F_w = n \times \hbar \times c / R_w^2 = h \times f_w / R_w \quad . \qquad (2.16,1)$$

The secondary force as well-known is indirectly proportional to the square of the distance here to the wave amplitude $R_w$, directly proportional to Planck’s effect over n as well as directly proportional to the frequency $f_w$ and the energy of wavequantum $E_w$. The higher the wavequantum orbit is with n, the larger is the force in receptacle cosm. In this respect, the force field is really explained as spacetime correctly as measurement of oscillation time and period time. Each cosm has its intrinsic period time, and so it has its intrinsic external and primary force.

> This is essential. If the waves switch the forces between the cosms and the elementary cosms and charges and when these waves cannot leave a real Black Hole, then the totally working mass $M_o$ inside of this Black Hole **cannot work to the outside directly**!

In the past, I assumed vague hypotheses. I thought that forces of interaction would be dependent on those times of formation or annihilation of those particle pairs taking part, which had the longest time of their changing. But these are the electron neutrinos, at all. They absolutely don't interact electromagnetically, e. m., but just gravitomagnetically, g. m. And suddenly the complete thing of e. m. interaction has changed into an undoing. Therefore, I deleted my old hypotheses simply. I'm not able to give an answer by solution the questions for time of decay and formation.

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Next on page 430.

Forces

In contrast to this, the coupling of nucleons leads to the emission of protocosmic energy. The internal mass is increased and the external mass will be reduced. The deficit has been emitted as binding energy, and it exists now covered at the same time while the bound nucleon substitutes exactly the binding energy over its phenomenal rotation in the vacuum sphere of the binding nucleon. It only then can be set free, if the binding energy is led back to it. From this reason, we don't see conformity of using concept equivalence of nuclear force and strong interaction. Nucleon forces and the frequent effect are two different processes. Therefore we distinguish two forces:

a) Forces of the atom shell

They are combined of

- e. m. attraction and repulsion forces between electrons and protons,
- gravitomagnetic attraction and repulsion forces between the moved masses,
- the inertia force (centrifugal force) of the moved electron masses and
- the relativistic shift of these magnitudes.

b) Forces of nuclei

They consist of

- e. m. attraction and repulsion forces between protocosms
- gravitomagnetic attraction and repulsion forces between the moved masses (essentially gravitational attraction forces of the internal masses M),
- the inertia force (centrifugal force) of moved nucleon masses (negligibly small) and
- the relativistic shift of magnitudes.

Immediately one can see that each secondary force is combined from e. m. and g. m. forces and those relativistic shift. No force of this world can be represented in another a way.

Conservation law of baryons and leptons

Stable particles make the elementarity of matter. The baryon number B causes a conservation law because protons are elementary. Each effects only shift the proton phenomenon to phenomena of unstable particles – to other faces of that proton. The same feature is valid for the lepton number L with the elementary electrons.

The universe is elementary and stable. Inside of universe protocosms and elementary universe particles exist like protons, electrons and electron neutrinos, which can be destabilized to the direction of protocosms. Inside of the elementary particles are particle protocosms and elementary subparticles like gravitons and subtrons, which are similar to the protons and electrons. But analogon to neutrinos you cannot find there. Following only singular couplings similar to hydrogen atom are able there. Those interactions, well-known here, have not chance there. Instead of them, only e. m. and g. m. forces are working in relativity. Here, the unification of the real forces to the real originality is localized – to the electrogravitation.

2.18. Inertia

For an observer within his spacetime (we call him Jo), the inertia is the relativistic coupling effect of his spacetime cosm field surrounding him. His spacetime reaches upwards to the event horizon of his cosm field. Jo thinks that his spacetime image from his position would be his intrinsic cosm. In the past, Einstein made a relativity: each further observer **Jo'** has the same impression of his spacetime. But we notice: he does not have the equal impression, because every observer has his own impressions of his own environments of special order (individuality of environment structure)!

The limits of the amplitude are marked by red shift up to infinite. Jo calculates relativistic distances for his assumption after which the most external cosm field masses would move themselves away from him with the speed v up to the proximity of light speed c. Really, this **cosmogonical** red shift only hits for photons on their way in front of the elongation expansion, although their origin has remained standing still relatively in vacuum.

But Jo has just the knowledge of the present physics. Jo has got the impression that radiation would come to him radially along the photon's way $L_{Ph}$, no matter what real curvatures it has taken on its run. Today, he still believes in small curvatures of the space, because he has no proves of larger values.

Under these circumstances, no gravitational coupling upwards over this horizon can be possible, because it is extending itself with vacuum light velocity c. That is similar to a body that was moved with the velocity $v_c$, which cannot be overcome, nevertheless, one tried to obtain it then with just this velocity of $v_c$, so everybody remains far in the "infinity". The way of obtaining will be extended to an infinite distance.

Jo only couples with the environment masses, which are parts of his spacetime. Because his spacetime is extending along the oscillation time of his world (or reducing) while more and more images of the other observers **Jo'** to **Jo'"n** come into (or out of) the observed horizon along the time going by, Jo has got the impression he himself moved out of the middle of his observed space (out of that middle the intrinsic time wells up). He always is moving into the future; but looking at the dying environment he recognizes that his existence time is going to the end, nevertheless of the positive time direction. His existence is dependent on all the things inside of that cosm. When Jo wanted to change something else, he must produce movements and own energies, so he must give new causes into the material scene. If he wanted to overcome his intrinsic receptacle cosm, he had to uncouple the total movement magnitude of his spacetime and he had the change each material elements with vacuum light velocity c. This means that he had to change the complete energy of his universe to do this. Such a process is impossible! The only exception is that he would make the movement with exactly vacuum light velocity c.

No matter how big the spacetime is and how much mass there is given, the relativistic limits are valid like well-known generating the following equations:

$$\mathbf{a} = -G_v \times M / r^2 \quad , \quad M = M_T / W_{SRT} \quad ; \tag{2.18,1}$$

with the sign **a** as inertia deceleration, M as mass inside of the spacetime, r as deceleration way and t as deceleration time.

Additionally, the inertia force $F_T$ is valid with eq. (3.2.3,42):

$$F_T = M \times a \; . \tag{2.18,2}$$

With the assumption of the relativistic shift of horizon, the deceleration a is valid as following:

$$a = -G_v \times dM / dr^2 \quad , \quad dM = dM_T / W_{SRT} \; ; \tag{2.18,3}$$

$$F_T = F_S = M \times a = -G_v \times M(dM / dr^2) \; . \tag{2.18,4}$$

Inertia force $F_T$ equals the gravitation force $F_S$. For relativistic acceleration after (2.10,13) this eq. is also valid:

$$a = -d^2r /dt^2 \times W_{SRT} . \qquad (2.18,5)$$

We make (2.18,5) equal to (2.18,3) and get the shift of non-relativistic effect mass $dM_T$:

$$dM_T = dr^2 \times d^2r /(dt^2 \times G_v) . \qquad \text{(cf. (2.16,7))} \qquad (2.18,6)$$

This equation means that the differential effect mass of inertia is only determined by the differential way and time changes.

When one integrates eq. (2.18,6) in the limits of R = 0; $R_o$ and t = 0; $t_o$ then a maximal mass $M_o$ is following

$$M_o = M_{T(max)} = R_o^3 /(t_o^2 \times G_v) , \qquad (2.18,7)$$

which still is dependent on the amplitude $R_o$ and the amplitude time $t_o$: the mass is a relationship of way and time. With (2.3,2) we get again the Einstein equation of the mass of a closed spacetime or of the cosm namely the equations (2.8,3) and (2.15,8):

$M_o = R_o \times c^2 /G_v$ . Eq. (2.18,6) is also made for larger steps (differences).

For example, an observer mass shall be shifted on the way of 10 m during the time of 10 s, then a surrounding mass of $M_T = 1.5 \times 10^{11}$ kg is working against this trial. Said with other concepts: the total constellation of this $M_T = 1.5 \times 10^{11}$ kg must be changed, if one single observer wanted to shift an arbitrary mass at his position to make a distance with above called waytime values. If an observer would wish to bring a particle to light velocity, then he had to give a new constellation to all this elements of the total mass $M_o$ of this receptacle cosm according to this solution, in which he is living, and he would never have reached vacuum light velocity (limit velocity, cf. 2.8.). In this term, the mass of the observer is not important for calculation of the surrounding mass $M_T$ making inertia. Because the observer has devised the concepts of mass and force, his own mass, we think of M = 2 kg, has mathematical importance for force and acceleration:

$$F = G_v \times M \times M_T /r^2 = 0.2 \text{ N} \quad \text{and} \quad a = F /M = 0.1 \text{ m /s}^2 .$$

This magnitude of acceleration currently satisfies the observer and covers his view of the giant environment, which is forcing him. The special relativity appears, if the observer must learn about his movement limits. These limits lay – seen from the inside – on the amplitude $R_o$ at all, which is locked below the gravitation horizon $r_o$. Inside of its receptacle cosm, it has a giant effect on the space curvature contrary to the calculation observing a mass from the outside coming to the gravitation horizon of $r_o$.

Inside of an anticosm, negative inertia exists relatively. From this follows the compensation of the features of inertia, if in a cosm were an equivalent distribution of coinomass and antimass. Where ever one feature of inertia exists (here in universe for our observers), therefore, a parity of coinomass and antimass cannot be possible at the same location. But some inertia influences both kinds of masses over the same ways like eq. (2.18,7) has shown. Negative mass and negative force will give the same positive acceleration of +0.1 m/s².

Parity produces the state of the force-zero-complex. After the premise of Einstein

$$a_{\text{gravitational}} = a_{\text{negatively gravitational}}$$

vacuum cosms are stationary cosms. (/Q 15/, page 243f)

**Inertia** only exists why a matter phenomenon is forced to go a determined curved world way in a

limited number of further phenomena coupling with it into a spacetime-like environment dependent on just these couplings.

Additionally, the inertia now can be thought, if the universe has the shape of that cosm. So the observation of inertia already causes the existence of a cosm like this. The finite universe can be proved when mass-radii-relationships can be measured: for mathematical preparation we use the equation (2.8,3) in the term of the equation (2.15,8):

$$M_o = R_o \times K_{Pl}.$$

From this term, direct proportionality is derived for every cosm amplitude $R_o$ and its isolated mass $M_o$:

$$M_{o1} / M_{o2} = R_{o1} / R_{o2} \quad . \qquad (2.18,8)$$

Half the cosm radius (or cosm amplitude), we have to compare, makes half the isolated mass of a comparable cosm. The finite universe is determined of a linear relationship. **It is one-dimensional.** Mass is way; and way is time.

In contrary opinion, the chaos theory of Big Bang and following theories favors the infinity. Corresponding to our opinion, it's impossible to separate an infinite magnitude into finite parts even making vivid calculations with them.

Universe ways = infinite
Average mass density = const. ? --- this is impossible.

We think of an finite volume:

$\mu_{Big\ Bang} = M / V = M / (\text{const.} \times R^3)$; this means:

$\mu_{cosm\ 1} = k \times M_1 / R_1^3$ and $\mu_{cosm\ 2} = k \times M_2 / R_2^3$,

from which the terms will follow:

$$M_1 / R_1^3 = M_2 / R_2^3. \qquad (2.18,9)$$

In cubic universe, the decrease of radius to one half of it would mean the decrease of isolated mass down to $^1/_8$ of its original amount. Such an infinite universe would be simply determined by a cubic relation.

This apparent image will be stimulated deceitfully by the accepted rectilinear view into the past of cosm although we have shown with our cosm solution that the radiation ways are extremely curved and that there isn't any simultaneity.

The infinite universe contradicts the correct Relativity Theory. Our solution shows that red shifts, which come from the change of matter density or of pressure only are localized inside of determined central areas of the cosm. The essential red shift of primary spectrum is caused cosmogonically, what means gravitationally.

## 2.19. Special Relativity Theory in Cosms

That observer who is relatively moved to vacuum, objectively, gets his intrinsic idleness time $\tau_b$ and his idleness way $K_b = c \times \tau_b$ in his receptacle cosm. The magnitude of his cosm measured in amplitudical coordinates (polar coordinates) $R_{o(GK)}$, $t_{o(GK)}$ of its oscillation length $½\lambda_{o(GK)}$ and of its period time $½\tau_{o(GK)}$ is important, because he cannot be moved above these amounts caused by the total curvature of his geodetic coordinates. Under each other, some observers recognize the differences of their intrinsic idleness waytimes $dK_b$, $d\tau_b$. From the view of one observer 1 (relatively to the observer 2), who is moving together with his clock, his idleness waytime $K_{1b}$, $\tau_{1b}$ is shortened to $K_{2b}$, $\tau_{2b}$, because his installation waytime $K_{i1}$, $\tau_{i1}$ (dilated movement magnitudes 1) has become relatively longer to $K_{i2}$, $\tau_{i2}$ (slower clock 2). The observer 1 has almost approached the oscillating waytime of the receptacle cosm more than the observer 2.

The given theory TBA I explains the Special Relativity Theory as a natural limit law. For observers in receptacle cosm, it must be possible to calculate the objectively located limits of their movements. Unfortunately, every step of relativity calculation means just an approximation for them to the objective facts connected with a turn of necessary corrections.

One recognized that the magnitudes of mass, energy, force and acceleration diverge to infinite for intention to move a body up to light velocity in vacuum. Look around, we live in a cosm! Therefore, our theses is: The Special Relativity Theory is working inside of each cosm.

General Relativity Theory tried to respect this theses. The correction value of spacetime magnitudes is determined according to eq. (2.8,3) of the proximity to the electrogravitation radius $r_o$ while running from the outside (collapse, condensation). This event only runs while formation and decay of protocosms. One should be able to conclude that it is not allowed us living here in a cosm to overcome the locked gravitation horizon $r_o$ from the inside. Theoretically, we had to change and to take the complete cosm energy for this escape corresponding to relativistic solutions of inertia. First, this is impossible, and the Special Relativity Theory shows that. Secondly, we saw already that the mass $M_o$ or its energy $E_o$ are concentrated below the horizon $r_o$ down to $½r_o = R_o$ and that they are oscillating there so that the isolated special relativity will give us the limits at $R_o$ what we will see here later.

We now calculate with the term of amplitudical magnitudes of total magnitude of a complete oscillation although it would be really more understandable to set on one amplitude movement just exactly ¼ of one complete oscillation. Even the reference to $\phi = 1$ would remain unopposed. We would get the same symbolic result of mathematics. With eq. (2.3,2), (2.6,1), (2.7,1) and (3.2.3,51), the isolated mass $M_o$ will be calculated by amplitudical magnitudes:

$$M_o = -R_o \times F_o /c^2 = -E_o /c^2 \ ,$$

$$M_o = -t_o \times F_o /c \ . \qquad (2.19,1)$$

The period time $\tau_o$ as primacy of curvature magnitude represents the part of itself by the amplitude time $t_o$: $\tau_o = \phi_o \times t_o$ . Every magnitude will reach the following size, dependent on $\phi$:

$$t_\phi = \tau = \phi \times t_o \ . \qquad (2.19,2)$$

In relationship of amplitude $R_o$ to the oscillation length $\lambda_o$ or to the perimeter of unit circle u, the curvature force $F_\phi$ can be calculated so that the amplitudical force $F_o$ is its part:

$$F_\phi = \phi \times F_o \ . \qquad (2.19,3)$$

In principle, at amplitudical perimeter $K_o = 2R_o \pi/2$ of the cosm is valid $v_{(Ko)} = c$. Consequently equation (2.19,1) can only be filled with the feature extended by $\phi$:

$$M_\phi = \tau \times F_\phi / c \qquad (2.19,4)$$

$$M_\phi = \phi^2 \times M_o \ . \qquad (2.19,5)$$

The same term is then valid for energy $E_\phi$ because of eq. (2.4,16):

$$E_\phi = \phi^2 \times E_o = M_\phi \times c^2 \ . \qquad (2.19,6)$$

We extend (3.2.3,9) with c and get an equation, which explains Einstein's parameter $T_E$ also as a velocity $v_\phi$:

$$v_\phi = \phi \times c = T_E \times c^2 \quad , \quad \phi = v_\phi / c \ . \qquad (2.19,7)$$

This velocity $v_\phi$ is running from zero up to $\phi_o \times c$. Its magnitude is caused by waytime constantly determined by c. Such a velocity is just then an assumption, if the observer thinks he could overcome the amplitude $R_o$ during the time $t_o$ with the velocity c. But then an observer in a circular way had to run with the oscillation length $¼\lambda_o$ and with the velocity of $v_\phi$. Referring to the equations (2.4,4), (2.4,19), (2.4,20), (2.9,27), (2.10,6), (2.10,7), (2.10,8), (2.10,19), (2.19,5), (2.19,6) and (3.2.3,14) the following curvature magnitudes are existing:

$$\pm\phi = R_\phi / R_o = (M_\phi / M_o)^{½} = F_\phi / F_o = (E_\phi / E_o)^{½} = t_\phi / t_o$$

$$\pm\phi = \omega_\phi / f = v_\phi / c = a_\phi / a_o = h_\phi / \hbar = \mu_\phi / \bar{\mu} \ ; \qquad (2.19,8)$$

$R_\phi = \phi \times \lambda_o$ , way on the oscillation length.

This equation is able to be differentiated to:

$$\pm d\phi = d\lambda / R_o = dM_\phi / 2M_o = dF_\phi / F_o = dE_\phi / 2E_o = dt_\phi / t_o$$

$$\pm d\phi = d\omega_\phi / f = dv_\phi / c = da_\phi / a_o = dh_\phi / \hbar = d\mu_\phi / \bar{\mu} \ . \qquad (2.19,9)$$

Such differentials were already given in (3.2.3,13), (3.2.3,35), (2.9,5) and (2.9,6). The squared function values W of waytime-like oscillation (3.2.3,24-27) and (2.10,2-5)

$$R = R_o - r_3 = R_o \cos\phi \quad \text{and} \qquad R^2 / R_o^2 = \cos^2\phi$$

take the following abstract shape:

$$W^2 = \cos^2\phi \ . \qquad (2.19,10)$$

Just one of the oscillator solutions can be abstracted to this idealized and shortened form:

$$R = \pm R_o \cos\phi + const_{(r)}. \qquad (2.19,11)$$

$$R^2 - (2R \times const. - const.^2) = R_o^2 \cos^2\phi \ . \qquad (2.19,12)$$

There the subtrahend – the anything moved (we notice materially zero; we do not indicate it) – on, which base the system is oscillating can be neglected and a function like this can be formed

$$\frac{R^2}{R_o^2} = \cos^2\phi = W^2 \qquad . \qquad (2.19,13)$$

Equation (2.19,13) will be extracted the root under attention of the positive and negative phase course to:

$$W_I = + \cos\phi \quad , \tag{2.19,14}$$

$$W_{II} = - \cos\phi \quad , \tag{2.19,15}$$

$$W_{III} = + \cos(-\phi) \quad , \tag{2.19,16}$$

$$W_{IV} = - \cos(-\phi) \quad . \tag{2.19,17}$$

There the magnitudes are ordered:

$$\pm W = R /R_o = (M /M_o)^{½} = F /F_o = (E /E_o)^{½} = t /t_o$$

$$\pm W = f_t /f = v_v /c = a /a_o = h_t / \hbar = \mu_t /\bar{\mu} \quad . \tag{2.19,18}$$

In differentiated form they are called:

$$\pm dW = dR /R_o = dM /2M_o = dF /F_o = dE /2E_o = dt /t_o$$

$$\pm dW = df_t /f = dv_v /c = da /a_o = dh_t / \hbar = d\mu_t /\bar{\mu} \quad . \tag{2.19,19}$$

Finally, the function (2.19,13) has to be differentiated as

$$\mathbf{\phi' = d\phi / dW} \; .$$

We need the function (2.19,13) changed on the arcus cosine :

$$+\phi = + \arccos W_I \quad , \tag{2.19,20}$$

$$+\phi = - \arccos W_{II} \quad , \tag{2.19,21}$$

$$-\phi = + \arccos W_{III} \quad , \tag{2.19,22}$$

$$-\phi = - \arccos W_{IV} \quad ; \tag{2.19,23}$$

in differentiated form

$$\phi' = - 1 /(1 - W_I^2)^{½} \quad , \tag{2.19,24}$$

$$\phi' = +1 /(1 - W_{II}^2)^{½} \, , \tag{2.19,25}$$

$$-\phi' = - 1 /(1 - W_{III}^2)^{½} , \tag{2.19,26}$$

$$-\phi' = +1 /(1 - W_{IV}^2)^{½} \, . \tag{2.19,27}$$

Because of the multipliers of -1 eq. (2.19,26) is the mirror of eq. (2.19,25), and eq. (2.19,27) is the reflection of (2.19,24). Passing we distinguish that working of special relativity in the coinoworld and antiworld of cosms. Additionally we already have learned that the movement direction of the same charges decides about their secondary positive or negative reaction.

On the one hand, we find the complex of solutions of the **complete Special Relativity Theory in cosms** in fulfillment of the equations (2.19,9), (2.19,19) and (2.19,24) to (2.19,27):

> These are the corrections of the way, the mass, the force, the energy, the time, the frequency, the velocity, the gravitational and the electric wavequantum momentum.

On the second hand, the squares of function values in root term (2.19,24-27) doesn't only show the dependence of the well-known velocity relationship but also the limit values of all the radial magnitudes, which show the observer what he can never reach. From the multiple number of solutions, we find the example of waytime dilation for demonstration; (2.19,25) in solved form:

$$\pm dt_\phi / dt = (t_o / t_o) / (1 - v_v^2 / c^2)^{1/2} \quad , \qquad (2.19,28)$$

or

$$d\tau = \pm dt / W_{SRT} \; ; \qquad \text{(cf. (1.1,6))} \qquad (2.19,29)$$

$$\pm dR_\phi / dR = (R_o / R_o) / (1 - v_v^2 / c^2)^{1/2} \quad , \qquad (2.19,30)$$

$$dR_\phi = \pm dR / W_{SRT} \; . \qquad \text{(cf. (1.1,8))} \qquad (2.19,31)$$

This doesn't mean something else than explained with the modified Schwarzschild solution, Term 1: one oscillation step is dilated in its phenomenon as a waytime step of $dR_\phi$, $dt_\phi$! That oscillation step only can be seen inside the given waytime of $R_o$, $t_o$ or inside the receptacle cosm.

This relativistic expression of the root of velocity terms in this solution can also be calculated with each physical magnitudes also with the waytime relation $R/R_o$ or $t/t_o$ itself:

$$\pm dR_\phi / dR = 1 / (1 - R^2 / R_o^2)^{1/2} \quad . \qquad (2.19,32)$$

So that result shows into the same direction like the already calculated limit values of finiteness: nobody can be faster than the objective waytime (the objective movement).

Since we live in an irreversible world function, the theoretical adjusting of a sign is superfluous that would show the matter in principle having a character of two poles: coinomatter and antimatter.

A waytime differential means a waytime difference. Without integration it cannot be understood.

Therefore that dilation of waytime in term 1 of modified Schwarzschild solution asks for a decrease of the number of waytime pattern per given receptacle cosm. The moved elementary cosm strides against the oscillation of the receptacle with its intrinsic oscillation. From this, a contraction of installation waytime $ds_i = c\, d\tau_i$ results.

During the increasing waytime step $dR_\phi$, $dt_\phi$ at the movement $v_v \rightarrow c_v$ in movement direction of the elementary cosm, the remaining waytime step $ds_i$, $d\tau_i$ is also decreasing, remaining of the world's internal structures, measured at the objective magnitudes of the receptacle cosm $\lambda_o$ and $\tau_o$, which half is forming each a cosm pulse of two on a period: $K_o$ and $\frac{1}{2}\tau_o$.

For two material observers 1 and 2, the term is valid under each other over their relative velocity without direct reference to vacuum:

$$dR_\phi = dR / (1 - v_E^2 / c^2)^{1/2}$$

$v_E$ as Einstein terms (addition theorem (1.1,4)).

If both observers have the same vectorial movement state in vacuum, what is impossible because of the dimensions of cosms, then they have the same waytime contractions relatively to vacuum, by which they would notice no difference under each other – then they would indicate the equal state of waytime (which is also impossible).

That fact is essential that the number one in the counter of the relativity formula is only given by shortening of the absolute cosm references. Such an absolute consequence was covered with Einstein's relativity, although there the vacuum light velocity were shortened, too. But here we recognized

that such a relativity can only exist, if it is referred on the oscillation magnitudes inside the **absolute measurements** of an arbitrary cosm. The velocity in vacuum is one of the given absoluta of calculating relativa.

The prove of the General Relativity Theory here is given into itself - in the unity of the new theory of solutions:

**Our universe has the well-known qualities, because it is constructed according to the laws of the isolated cosm.**

This knowledge are the premise of our opinion of spin. Converting eq. (2.19,29) we get this eq.:

$$dt = d\tau \times (1 - v^2/c^2)^{1/2} .$$

We integrate to:

$$\Delta t = t_2 - t_1 = [\tau_{o(2)} - \tau_{o(1)}] \times (1 - v^2/c^2)^{1/2} \qquad (2.19,33)$$
$$\Delta t \to 0, \text{ if } v \to c.$$

This means: the differences of both systems 1 and 2 moved are fading in the proximity of light velocity. That way, the contraction of a compact body has to be explained: the dimensions come close and closer.

One can conclude that each elementary cosm itself sets its oscillation time $\tau_{o(EK)}$ to zero in divergence to light velocity for a relatively resting and indicating observer:

$$t_{EK} = \tau_{o(EK)} \times (1 - v^2/c^2)^{1/2} .$$

An indicator can notice the diverging oscillation to zero decelerating that system. This means for a signal frequency that its energy diverges to infinity.

Vice versa, the observer moved along the system does not notice that indication but the dilation – the extending – of the oscillation time:

$$\tau_{o'(EK)} = \tau_{o(EK)} /(1 - v^2/c^2)^{1/2} \quad . \qquad (2.19,34)$$

The light velocity c represents a constant that only exists because of the oscillation of the receptacle cosm (GK). Every elementary cosm (EK) is subordinated the movement principle (cf. section 3.2.3., 4.3. and 4.4.).

The total isolated energy of receptacle cosm cannot be changed by isolated processes into an acceleration energy for one single purpose (it's impossible to make a perpetuum mobile of first type or second type from that given perpetuum mobile of zero type by isolated manipulating with isolated matter). Consequently, an element taking part at inertia (death and rebirth) from the start of the movement in a cosm cannot get older than the cosm itself. In this respect, the dilated oscillation of the element taking part at inertia cannot exceed the oscillation of the receptacle cosm. The decision is making collapse or anticollapse.

## 2.20. Summary

Three problems remained sidelined because of their oppression:

1st Phase angle $\phi$,
2nd Imaginary number j,
3rd Integration constant $const_{(r;\,t)}$, movement.

We find out that only this movement projects the concept of “matter" and with it the concepts like “force, energy, mass etc.".

Every movement system of matter made as an area of new adjusting of coordinates is separated totally mathematically signed by the imaginary number j.

If anything is moved of a substance character that we cannot explain, because that is not a spacetime-like apparent substance, but it is a given condition, then this **primordially moved anything** firstly makes the phase angle and secondly the imaginary number. Both magnitudes are ideal non-spacetime-like coordinates. With the premise of a firstly spacetime coordinate $R_o$ and $t_o$ moved by velocity c, which is a product of real infinity like $\phi$ and j, we find inside the $const_{(r;\,t)}$ from equations (2.9,11) and (2.9,15) that the receptacle cosm is oscillating on the base of elementary cosms. Consequently, the term “$const_{(r;\,t)}$ " is forming the measurement of an elementary cosm amplitude $R_o$' or the measurement of its amplitude time $t_o$'.

$Const_{(r;\,t)}$ is an arbitrary measurement as long as we haven’t a relative measurement. The first measurement of all measurements remains arbitrarily, what is the non-material “anything moved”. But then this **anything moved** has formed **something moved** defined physically by us but known under the name COSM. The phase angle $\phi$ gave the orientation of movement to the anything moved namely to reflect an oscillation. The largest measurement was noticed with the velocity of c.

Consequently, the term “$const_{(r;\,t)}$ " indicates the **non-congruence** of oscillation zero passing of all primary protocosms in R = 0 of a receptacle cosm. The gravitational center of the cosm inside is in R = 0 but the gravitational centers of the protocosms causing the primary center lay beside them! In this meaning, our concept is confirmed of **cosm system**.

Let us say it with pictures. If the first and strongest cosms are rolling in such a way that second, third cosms etc. are installing a cosm hierarchy on the base of primary cosms – making the maximum cosm universe – then an **ideal gearing** is given (an ideal transmissions). With well-known magnitudes, it will be possible to calculate the unknown “wheels" of this gearing correctly with their values (see section 4.5.)!

## 3. Foundations of United Field Theory of Electrogravitation

### 3.1. Reversible Thermodynamics in the Cosm System

Thermodynamics only can be understood as a branch of electrition and of the magnetism electrically caused in the bottom of unification! Each clearing will be coupled with the electrition solution of relativity theory (knowledge of parity of magons and antimagons as well as the existence of those electromagnetic wavequanta, section 2.5., page 328).

According to our reference, the first main law of thermodynamics reads:

“The internal energy" of a system “is a state dimension.

So it is a definite function of state variables, for example, of volume and temperature,“ E = E (V, T). “Mathematically this statement is made for expression that a change "$\partial$E“ is described by a total differential "dE, dE = $\partial$E - p dV.“ After running of circular process the observed system comes back to its starting state. Because the [...] energy is a state dimension, it has the same amount as at the start of the circular process. If the system has worked while the circular process is running for example," (naturally relatively the system environment) “then according to the first main law, it must have been supplied a corresponding large heat-energy to it. [...] There is no perpetuum mobile of the first type. [...]"

$$\oint dE = 0 \qquad \text{(/Q 12/, page 120)}$$

(E - energy, p - pressure.)

The first main law of thermodynamics also says that the energy sum of universe is constant. Just this fact includes that an observer has to start his opinion of macrocosm as an isolated system. There, the total change of mechanic energy into heat and reversed would be really possible, because in principle no energy is excepted from its change into another energy form.

We speak of open systems of mass and energy exchange, of locked or closed systems of energy exchange and of isolated systems without any exchange to the outside. For our cosm theory, this means that only the macrocosm is isolated, consequently, it is a perpetuum mobile of the first type. Inside of it, circular processes are really running. The microcosms (generally cosms) are closed. For them, the following condition is valid.

Supplying electric energy from the outside of a cosm (magons/antimagons mediate their photons) then two processes must follow:

1st External energy balance for example momentum exchange or/and pair formation. No direct exchange of mass over the horizons $r_o$ provided that the elementary cosms will not be exchanged. Otherwise the particles change themselves like in weak interaction.

2nd Isolated energy balance: the isolated inside of two particles pregnant with energy is interacting while they are meeting externally, because they are meeting internally at the same time.

Particle become unstable as long as they are “eating” energy. Then they decay into stable particles under equal energy ejection while the energy which was escaping contributes formation of particle pairs if there is enough energy.

Now could be objected to this explanation that the isolated system universe must be held constantly regarding the thermodynamic volume. Such a process seems to prove difficult in practice. Actually, how it is supposed to work in the universe?

The spacetime “universe” is limited by the stationary vacuum. That vacuum body has a finite volume, which doesn’t change by pair formations and annihilations at all, because the contents of universe only can be changed by their apparent forms. The complete system is living from itself. In addition, the cosm vacuum is a state like a compensation of gas and anti-gas, liquid and anti-liquid and solid body with solid antibody, which are able to be given free in pairs and to be coupled to vacuum again. Consequently, keeping the volume of the universe constant doesn’t matter. Therefore, the universe cannot contract or expand itself while temperature would change itself. Only local systems can exist, which are relatively observed as an area from the inside and the outside. There is a density as agreed in them, which change proves a local expansion by red shift of photons especially the reduction.

The second main law of thermodynamics is read as follows:

“It is part of the in principle experiences of the theory of heat that a temperature compensation takes place at the heat contact of two systems of various temperature and that this heat-energy will be transferred from the warmer to the colder system. [...] Heat-energy cannot be changed completely into work - the experience teaches so. The reversed is possible[...]" (/Q 12/, page 120) A perpetuum mobile of the second type cannot be constructed. In this respect, an empirical law limits the theory of the first main law of thermodynamics. The cold body does not warm itself by collecting of heat spontaneously. Then the kinetic of heat would be distributed itself to the other bodies while the reversed event of collecting must be forced by energy. In this context, the concept thermodynamically caused of entropy was coined. The thermodynamic disorder would increase with positive entropy. Because movements and the existence forms of bodies are coupled with heat, one can also take the entropy concept on general order and disorder states of matter. In the result of this experience, even for almost isolated systems it was impossible to change back that heat completely into mechanic energy, which was made from mechanic energy. So the questions is whether it is even possible to completely convert heat into a form of energy from which it would have arisen. So far, this question has been answered with “no, it can’t” for the known forms of energy.

We assume an isolated receptacle (vessel) in which low-energetic photons are located. If a quantity of high-energetic photons now enters this receptacle, the interaction energy is distributed almost evenly over all pairs of magons by interaction between the electrogravitational particles (cosms). There is only this one way of new adjusting of heat energy of the system (temperature of the body) namely in principle down to the mixed temperature. That phenomenon became the precondition for the definition of the thermodynamic concept of entropy. But with increasing density by gravitation, we raise the wave energy consequently at the inside of the receptacle till it reaches the energy of pair formation, then the photon energy will be stored during this particle pair formation. The reversed way is possible now why heat is changed into gravitational energy (cf. section 2.14.).

Photons interaction with the particles of a system give their radiation energy e.g. to the atoms. The kinetic gas theory at which one explains the temperature as average kinetic energy of all the particles of that body cannot be confirmed here. In reality, the picture of the mobile atoms is only the projection of the radiation energies $\Delta E_{(n)}$ – transferred between the particles according to eq. (2.4,14) - , which exchange the electromagnetic energy between their electromagnets and which lead then to the movement change of atoms (cf. page 318). The kinetic energy $E_{kin}$ is the axiomatic equivalent of radiation energy $\Delta E_{(n)}$ in non-relativistic calculations. But the reality is always relativistic.

The actual cause of virtual photons lies in real magon pairs, which only lack electric wave energy and thus an electromagnetic momentum. They will pumped up by other electromagnetic momenta. After this, they transfer these things and then, they go back into their zero-divergent energy state. The problem is much more complicated.

In stationary gravitational vacuum is just an “ocean" of charge pairs of less wave energy. In form of the stationary electric vacuum, they are ready to transfer the wave energies of those separating wavequanta while their energetic separation. Therefore, the wavequantum theory only explains wavequantum exchange processes – these are wave energy transfers. Its handle according to our United Field Theory must remain incomplete without the knowledge of the cosm character of corpuscles, because the wavequantum theory expects particles, which are not such particles but exactly wavequanta, which have the wave energy to revive a particle pair from the real cosm vacuum. “Quantum Theory" in form of “GUT" contributes to the uncovering of wave energies till the origin of the primary wave energy. This means in due clarity: the “Quantum Theory" just clears up a quality scale, because the temperature as an established measurement of radiation energy is a qualitative magnitude. On this base of waves, “Quantum Theory" explains the formation energy of real particles as protons and electrons and their unstable states. Additionally, this theory thinks to be able to extrapolate the processes up to the imaginary “Big Bang" since formation energies of “subparticles” like “quarks” and “gluons” are known. It lifts up the claim to explain the structure of the world from a quality scale. Can one investigate the anatomy of the backside of a pig from the fractionated distillation of lard? Is it really possible to lay the structural origin of universe into the “Big Bang” observing temperature equivalents? Certainly, both ideas are not from this world!

But if just now the heat is distributing all over the universe, how should then their retrieval go? The experience in second main law of thermodynamics teaches the reversed process. Simply that experience one wouldn’t be able to change heat into mechanic work completely is been won from an open system of the local observer in which he doesn’t know any process or any law that would be valid for a completely locked system – for an isolated system. The General Relativity Theory could give him the explanation. After it, the steady-state condition in resting matter system leads to the interpretation “that in equilibrium that temperature change compensates just this energy, which had to be supplied or led away while (virtual) transport of a volume element in gravitation field." (/Q 15/, page 192)

This means nothing else than the given shift of electric energy into positive as well as into negative direction by working of gravitational energy inside of an isolated gravitational system. This is an arbitrary cosm:

> The gravitational work is able to equalize the electromagnetic work completely. Or the universe is an oscillator between gravitation and electrition.

The proof was given by eq. (1.2,6) with the frequency shift of electric spectrum by gravitation. While the emission of electromagnetic wavequanta from an electrogravitational radiator of some mass, a

decrease of frequency and energy appears. The e. m. radiation gets an increase approaching at the electrogravitational receiver of some mass, which is an energy increase (a blue shift).

This sentence gives the equivalence of electric and gravitational work and that law we'd been searching for, disproving the experience of the second main law of thermodynamics. The gravitational energy is able to increase the e. m. energy forming particle pairs!

> In universe of protocosmic processes, the complete red shift arising while unpacking (evaporation) of matter will be reversed into the blue shift while packing (condensation) of matter by newly formed protocosms!

Our opinion of entropy does not contradict this law being a measurement of disorder of a thermodynamic system. "The entropy is a state dimension. While a state changing from the state 1 into the state 2, the entropy change is independent on the way from which the system is led from 1 into 2,

$$\int_1^{(a)2} dS = \int_1^{(b)2} dS = S_2 - S_1 \text{ . [...]}$$

For a circular process is valid

$$\oint dS = 0 \text{ "}$$ (/Q 12/, page 123)

Following the experience law of thermodynamics no. 2, disorder of systems shall increase over self-running events. The entropy increases. Additionally, processes always run working exothermically as well as with entropy increase. These processes are exergonic. We describe them with type 1. Two further exergonic events are connected with temperature. For type 2 is valid that the entropy is decreasing and the reaction is strongly exothermic. With type 3, the entropy can strongly increase while the process is running endothermicly though. Endergonic reactions connected with endothermic enthalpy balance and entropy decrease don't run spontaneously or "accidentally" from themselves.

A "Big Bang" would increase the already extremely increased entropy by start distribution of "original substances". This event would be the homogenization of an already homogenized state after the origin. Now the distributed heat should spontaneously collect endothermicly itself, and during this event, it should also overcome the homogeneity while the entropy should decrease. Such a process is endergonic. It never runs accidentally from itself! If we tried to help us, we could assume that an exergonic process of order forming would be included on the way after the "Big Bang" – the crystallization of particles from pre-particles – from the "quarks" - as exergonic process of type 3. Such a strange construction is possible, because the present physics has no solid understanding about particles as bodies according to its opinion that a particle can have each kind of a body, if it only satisfies the physical magnitudes, which are seen as dot-like (gravity center as gravitational center point).

Our theory does not know any law from which particles would be able to crystallize! Corpuscles remain identical cosms, which have an everlasting programmed body that property is given to load energy and to increase then the external mass while the sphere $\Sigma_0$ of this particle is oscillating faster. So this frequency is the expression of the increased external energy $E_A$ or its mass $m_A$. Therefore, we are able to bring the radiation just got free into those particles, which got stable in the end of radiation after this, they will get unstable again. At short resonant stop points of energy, we give names to the states of unstable particles. That "Big Bang" only has to be impossible concluding from the contradiction to the general **law of entropy**. It says that an initial order (a completeness) will degenerate, but with much energy, it will be newly formed up. This law demands the diversion (distribution) of substances by processes of diversion of radiations as long as these radiations haven't come back yet.

We noticed that the oscillating world is closed completely into itself. If we see the internal state of a given spacetime as that "first" hierarchy plane, the laws of thermodynamics are valid for the observer

of this plane; but also completely separated from the events running in second, third or further hierarchy planes at each of those spacetime planes. The already told General Relativity Principle is valid. We make the conclusions as following:

1. Ideal oscillators (cosms) don't require an external supply of materials from the outside. Therefore, they don't require a filling of electromagnetic energy (special form of it: heat energy). But if one gives energy to a stable microcosm from the outside, one gets back exactly and absolutely the same quantity of energy.

2. Really isolated energy of them is keeping itself. This means that at the inside of a cosm is a conservation law, which looks carefully that there does not be lost some heat or electrition.

3. Their isolated entropy is reproducing itself. This means: loss of order will be compensated automatically by a process of win of order at universal life in a cosm. This way, there will never be such a death of heat. That process is connected with the annihilation of protocosm pairs and the connected change of cosm seeds to stable particles and those back-change to protocosm pairs and cosm seeds on another way over the same change steps.

4. Consequently, a cosm is a perpetuum mobile of the first type.

**5. Ultimately, the universe is a structure with reversible thermodynamics!**

It is told: if an isotherm expansion is running statically (so to say), then the event is reversible. An explosive expansion (climbing) will become to an irreversible process if one sees the system working in relatively open environment (irreversible thermodynamics).

So-called present "world models" on base of the incompletely solved Friedman cosm including the above called wavequantum dynamics (QD) think of a high-dynamic expansion of one single so-called "cosmological singularity" localized in the open infinity ("Big Bang") in an incomplete thinking. After the next compression of the universe, one expects a difference of entropy. But under our conditions, this thought is not necessary for our universe.

Our cosm does not explode totally or singularly. Local density changes cause the local shifts of spectra (plurality). Pair formation and annihilation (destruction) are connected with a conservation law of energy. The stable particles won't be lighter from change to change and our environment wouldn't become permanently warmer after such a process. In the course of the gravitational reorganization of protocosms, those particle pairs will be formed again, which came from these protocosms.

We look for the origin of heat. It was set free during a pre-process. At that time, particles and antiparticles including a small surplus of particles existed in a high unstable form. This means: their microcosms were maximally filled with radiation energy, which external masses were increased. Starting from some maximum, from one stop point of radiation, at which it returns, those extremely unstable particles began to decay by ejecting of radiation and losing of external mass. That energy of ejected radiation decreased along the run of world time (oscillation period) until the particle pairs were decayed into their stability area. After annihilation of stable particle pairs, residual radiation continued to decrease. Only that surplus of coinoparticles remained at which some part of radiation is coupled to be the so-called warmth. This way, mass and antimass were changed into heat during an especially intensive push of radiation.

The radiation can be revived to particles and antiparticles by increasing gravitation energy. That process of pair formation makes possible the complete change of heat into coded energy forms - into gravitational and negatively gravitational energy (particle and antiparticle masses and their charges) according to the first main law of thermodynamics and Einstein's equation $E = m \times c^2$. The General Relativity Theory confirms this relationship by the possibility of transformation of gravitation energy into radiation energy, and vice versa. It's interesting that the radiation itself has a quality of gravitation according to General Relativity Theory collecting itself at a defined density.

Whenever there is a birth of two external radiation momenta, in every world point a sensitive decision is given for the ways of both radiation quanta. The primary radiation energy will be divided on its world way. One half radiates into the matter, which is already installed and decreases then under entropy increase. The other half is running with light velocity ahead of the installation of the following matter,

turns around if the reinstallation of matter begins and will be compensated gravitationally. The energy is increasing again and running back where it hits the lost space area. There, it shoots together the collected coinomatter forming particle pairs from single but double high-energetic radiation quanta.

This way, the complete energy can be reproduced by the fact that the pairs are closed in a reborn Black-White Hole, which newly collects by subprotocosms and those hierarchies at its inside and which is giving an order to them by internal energy concentration and entropy decrease. Connecting, it opens its order, which main part annihilates and sets free mass and energy bodies in quanta of ordinary coinomatter, which now starts into an exothermic process of increasing disorder (increasing entropy, the born original life is dying). That exergonic process without some additional assumptions agrees with other theories. Reversed, the pair formation as endothermic reaction agrees with the entropy decrease forced by the hierarchy of Black-White Holes. The endergonic inverse process never runs spontaneously.

In the universe, however, it is an inevitable consequence of the interaction of gravitation and electromagnetism, which cause the oscillation of the macrocosm.

The inhabitant of an isolated system is not allowed to build a perpetuum mobile, because he himself is working with open or closed systems in principle. However, our universe is the only, really and objectively existing isolated system itself. So it is the only perpetuum mobile of first type. Microcosms of stable feature represent the perpetuum mobile of second type. They are changing radiation into mass and the mass back to radiation or/and pair formation.

According to the General Relativity Theory, the concept of energy exists only then, if the spacetime has a total curvature. The interpretation has been kept with the static observation of sigma-sphere, but it shows already that the energy conservation doesn't seem to exist at all. Our construction leads to an oscillating horizon. The resting energy of the system is increasing and decreasing at the inside. Therefore, the sum of all energies can be just constant in one of each instants (time points).

In this respect, the existence of first main law of thermodynamics has been confirmed of an experience law, which couldn't led ad absurdum in lack of experimental time. The changes are just small that they are not measurable with our instruments.

If the cosm wouldn't be isolated, this time-like conservation law would not be existing at all. The whole topic is connected together logically (subordinated logic isn't definitely experimentally provable; it will keep discuss of religious believers and unbelieving):

The isolated system universe
- as perpetuum mobile,
- with conservation law of energy,
- in complete spatiotemporal curvature as non-stationary Black-White Hole,
- in which the heat distribution, the substance distribution and the entropy increase alternate the phase of heat collection, substance collection and of entropy decrease,
- which is oscillating as a Black-White Hole between two changes of the states,
- and which lives its birth, its death and its rebirth in the shape of a turn, which is not able to finish from the inside of this kind of perpetuum mobile.

All the systems rotating there are open or closed. They exchange mass and/or energy making the system of universe fundamentally by conservation laws relatively thought from the outside (the oscillation energy is constant). That universe is ideally stable. Stable particles in universe must interact. They cannot keep their state eternally.

Particles swallow energy and change their stability signs at this changing their mass or generating unstable states. The identity of those particles is not broken similar to a body, which only stores heat, which even runs more than one different state of aggregation, which gives back the heat again to get back the original state before.

Particles as non-stationary Black-White Holes are not only black like the universe to its outside but also white: non-stationary Black-White holes. We call them simply microcosms or shortly with plural **cosms** while there is only one macrocosm – the **universe**.

Everything else is a question of the quantum-mechanical definitions of each oscillation and wave phenomena. The problems of order of the relativity theory join when the General Relativity Theory controls the order of oscillator-hierarchy and the Special Relativity Theory controls the order of oscillator-movements. Orders are the result of programming in principle. We start thinking at the point of rebirth of universe where is the highest state of programmed order, which is losing in the course of world time. The trend of the increasing entropy is ubiquitous. Almost in the end of the building up, the disorder is processed in the non-stationary Black-White Holes into the Black-Hole-State. At this, the order is restored, which becomes reborn by ejecting from the White-Hole-State.

The universe has neither a measurable beginning nor an end. That program can have started at every arbitrary time. Analogously, nobody can make a statement in the face of a vibrating pendulum, when and in which position it ever has started to vibrate. But there, one can choose defined points of oscillation about them we can philosophize: these inverse points (reflection of the largest internal mass $M_o$ of universe $M_U$) and zero passing (cold vacuum body without free mass and radiation).

## 3.2. Ideal Oscillator and General Relativity Theory

### 3.2.1. Kerr's Solution (Kerr, 1963)

Following Kerr's solution analogously to the electric rotational fields, there are also gravitational rotation fields. For our theory, this is a base of the assertion of unity of the electrogravitation. The principle is obtained particularly on the theoretical question of rotating Black-White Holes. According to this opinion, the Black-White Hole would be determined by its mass $M_o$, by its electric charge Q and its electrogravitational angular momentum **I**. (/Q 15/, page 222f)

However, unfortunately, one didn't take into account adequately that both a gravitational and also an electric wave mass will be causes by the angular momentum **I** (wave energy of the wavequantum): a rotating charge generates a dipole, no matter if the cosms are electric or gravitational or both types.

Because the particle matter consequently realizes relative rotations, we must start thinking from a Black-White Hole in the shape of Kerr's metrics.

According to his solution, two radii can exist inside of the horizon:

$$r_+ = R_o + (R_o^2 - a_r^2)^{1/2} \quad \text{and} \tag{3.2.1,1}$$

$$r_- = R_o - (R_o^2 - a_r^2)^{1/2} \ . \qquad \text{(/Q 15/, page 223, (24,4))} \tag{3.2.1,2}$$

The variable $a_r$ fills the real set of values: $+R_o \geq a_r \geq -R_o$. From this term, the dependence of radii $r_+$ and $r_-$ follows:

$2R_o \geq r_+ \geq R_o$ as proportionate radius of vacuum sphere $\Sigma$

and $0 \leq r_- \leq R_o$ as radius of amplitudical sphere $\Sigma_o$.

With the surface of a sphere $\Sigma = 4\pi R^2$, the limit area of stationarity $\Sigma$ always must be measured above of $r = r_+$. One can take it as the surface of the vacuum sphere $R = 2R_o$ or $r_o = 2R_o$.

In opposition to this, we think to be able to describe the spherical surface dependent on the cosm amplitude $R_o$ with the amplitudical limit area $\Sigma_o$:

$$\Sigma_o = 4\pi R_o^2 \ . \qquad \text{(/Q 15/, page 224, (24,10))} \tag{3.2.1,3}$$

In the case that the radii are equal as $r_+ = r_- = R_o$, the area $\Sigma_o$ locks the cosm amplitude $R_o$. Depending on position of the radii $r_+$ and $r_-$ , the General Relativity Theory just has given a sphere, which is positioned amongst them – the ergosphere. We think this is the elongation area of protocosms of unstable particles. Protocosms don't meet themselves in the center of their movement at one point R = 0. Therefore also Kerr solves the smallest elongation to a "ring singularity". Above the sphere $\Sigma_o$, there would be the stationarity of vacuum. This fact corresponds to our solution after which there is still a **vacuum sphere** in radius $R_o$ between the cosm amplitude $R_o$ and its gravitation radius $r_o$:

1. The cosm has the vacuum sphere $R_o$ on half the gravitation radius $r_o$

$r_o = 2R_o$ according to eq. (2.8,2).

It only appears convergently at closed programmed particles, which are stable.

2. The protocosm has a divergent vacuum sphere. It is working out, if the mass has decreased to its amplitude $R_{o(PK)}$: $r_{o(PK)} = 2R_{o(PK)}$ .

Kerr's solution gives a special Killing-vector, which amount changes while exceeding the limit area of stationarity $\Sigma$ changing its sign. (/Q 15/, page 224 (24,9), (24,10))

Then this means that the field goes from stationary outside metrics of external vacuum into a non-stationary inside metrics including stationary vacuum. Just this thought, we want to clear now. In our new terminology, this means: **in the isolated state of the so conceived stationary vacuum body further bodies exist, which qualities equal the qualities of oscillators**. The external bodies are insignificant but the external vacuum does not do so.

Corresponding to the general relativity principle according to our opinion, the observer finds the same law relation inside the non-stationarity – inside the oscillators - like the external observers do there:

> He – the isolated man - finds himself being inside the general stationary vacuum body, which includes a completely curved spacetime from the inside and which makes it look like a pseudo-infinity. While doing this, he looks at sub-spacetimes, which also exist inside the general stationary vacuum body oscillating in it – this means being non-stationary. That observer who is inside of one of the sub-spacetimes observes this relationships, too. With the next step to the next inside, the end of the material hierarchy is reached just like the stationary vacuum body ends to the outside, because the base particles and antiparticles of stationary vacuum equal the last sub-spacetimes (**gravitons**, antigravitons, gravitonmagon pairs, electrogravitons, electroantigravitons; **subtrons**, antisubtrons, subtronmagon pairs).

Exactly seen, this means that the observer must refer the events running in his locality to the stationarity of vacuum. And the "Big-Bang-particles" can be formed by extreme energies in experiments proving the "Big Bang" without having ever existed this way of pure energetic scale and without including of spatial structures.

These cosms, which existence the observer cannot notice immediately, are giving him the truth about the oscillation – namely about the non-stationarity. Consequently, this is our theses:

> **The stationarity unconditionally includes the non-stationarity into itself!**

But if there isn't formed some new spacetime body in form of a protocosm, the external observer watches the transient state, this means the following movements or the non-stationarity.

Each cosm only exist in an intrinsic spatial part of stationary vacuum. We call it to be their intrinsic vacuole. Such a vacuole of a cosm is described by the limit area of stationarity $\Sigma$, because the gravitational vacuum cosms are generally stationary by its originality. However, photons and fallons are formed and restructured in their special particle energy at annihilation inside of existing electrogravitational cosms. Therefore, the stationary vacuum of universe just is filled with photons of protons and electrons and their antis. Inside of these particles, there are the photons of annihilation of subtron and graviton pairs. The annihilation of protocosm pairs leads to the destruction of the system protocosm

from which the internal radiations of graviton and subtron photons are soaking. In this respect, a vacuole one could understand as a thermodynamically independent receptacle.

With (3.2.1,3) the surface $\Sigma = A_{(r_o)}$ of the stable cosm takes the form:

$$\Sigma = 4\pi\,[2R_o^2 - Q^2 + 2(R_o^4 - R_o^2 \times Q^2 - I^2)^{1/2}] \quad . \qquad (3.2.1,4)$$

The larger a cosm is the more content of isolated cosms are there!

Even similar to eq. (2.10,22): the more protocosm are falling into a given hyperprotocosm the bigger the hyperprotocosm will be. This eq. (3.2.1,4) also is valid as conservation law of Black-White Hole for the case of unification of such two holes 1 and 2 in that form like this:

$$\Sigma = 16\pi \times R_o^2 \geq \Sigma_1 + \Sigma_2 = 16\pi \times (R_{o1}^2 - R_{o2}^2) \quad . \qquad (3.2.1,5)$$

(/Q 15/, page 227 (24,14), (24,16))

The inequality also justifies the supposition of protocosms. It means at the same time that cosms are not compatible with each other till duration.

For our understanding, the balance equation is nothing else than the fact …

…1st that a cosm, which is definitely stable, can grow by energy and pair formation at its inside shortly before it decays keeping its identity; and

… 2nd that two protocosms, which anyway diverge to the gravitation horizon, can grow to larger protocosms reaching the common surface equal or larger than the sum of their introduced surfaces.

This means: when two stable particles don't reach the equality condition, they cannot be stable. Following this fact, the inequality says that there are stable and unstable cosms. Just this result explains the changes in a cosm. The common surface is dependent on the sum of the commonly isolated mass. This problem is clarified by Friedman's solution particularly. For a Black-White Hole, the radiation temperature was indicated with the following eq.:

$$T = 2(r_+ - R_o) \times \hbar \times c / \Sigma \times k_B \; ; \qquad \text{(/Q 15/, page 228)} \qquad (3.2.1,6)$$

$\hbar = 1.0545887 \times 10^{-34}$ Js (Planck's radial constant), (/Q 12/, page 281)

$k_B = 1.381 \times 10^{-23}$ J /K (Boltzmann's constant) (/Q 12/, page 151)

$$\Delta E = k\,T \; . \qquad (3.2.1,6a)$$

A Black-White Hole does not radiate, if it is stable – if it is a cosm because then for $a_r = R_o$ is valid: $r_+ = r_- = R_o$. Without wave interaction to the outside, however, neither a gravitomagnetic nor an electromagnetic force exists, which would react to the outside. Only such coordinate systems, which are not closed like at pure electric charge force can react to the outside. This means: the internal mass locks completely; the internal radiation cosms lock completely; the internal electric charges of protocosms of the contrary number make equalities, but one more of the charge opens the action to the outside.

While an exceed of gravitation radius $r_o$ to the collapse horizon $r_k$, which shows the open state of radiation (evaporation of protocosms), one can think of significant magnetic balances or forces with environment. There is valid $r_+ = 2.25R_o$ and $T = 0.0057233/\Sigma$. A Black-Hole-state of the radius $r_{o(PK)} = 3000$ m radiates before reaching the anticollapse of its substructures with a temperature of $5.06 \times 10^{-11}$ K. All the higher temperatures are the result of matter coming out from the protocosms after their anticollapse (evaporation):

> During a decay of an unstable particle, this Black-White Hole radiates parity energy (even pair formation) and reaches its stable state in the form of a cosm. This means: before the anticollapse of a protocosm, its internal mass starts coming to the outside successively.

While a change of a cosm into an unstable particle, it takes radiation into itself. This radiation cannot appear diffusely according to Max Planck, but is must be quantized either in its photons or/and in its fallons. It causes pair formation of energies by compression in subspace, which energies are reversed from the outside to the inside according to eq. (2.7,12) and (2.7,13). This way, isolated particle pairs of gravitons and subtrons arise, which are concentrated in isolated portions. Their density can be extremely large so that **protocosm pairs** can be formed. This means:

> The isolated state of energy of pairs or of protocosm pairs (protocosms and antiprotocosms) are working out an instability of a given stable spacetime.

The results of this knowledge of our theory are well-known facts, which appear at daily work of microphysics: particles are destabilized by electric energy. After a certain existence time of these unstable oscillators, they “decay" back into their stable starting position additionally into electromagnetic energy at least. However, they are even forming electrogravitational cosm pairs (cosm + anticosm) with enough energy for external pair formation.

> The arise of unstable particles will find its end asymptotically in the proximity of the energy of gravitons! But this process of forming of unstable particles will always stay specifically for that particle type, which had started it: protons go their own way in relationship to the electrons becoming unstable particles; there will not be any common unstable primeval particle, which would be the equal result of the proton shock as well as of the electron shock!

Only reversed at decay of specifically unstable particles of highest energies, which properties and qualities will be similar to each other divergently, the photon energy coming free can overcome itself the given division **forming** pairs of baryons and of leptons! This process made in laboratory you could misunderstand as a proof of “Big Bang”.

For example, the energetic forming of tauons is only possible in lepton channel. But the decay of tauons $\tau$ runs in lepton channel to muons or electrons, tauon neutrinos, electron neutrinos or antis as well as in hadron channel to pions and tauon neutrinos. Just in different ways, physics formulates this fact abstractly. Leptons are subject only of the “weak force" while hadrons are subject of the “weak" as well as the “strong (nuclear) force". This kind of terminology is no help for clearing up. It is an expression of very small knowledge.

Summarizing, we conclude the following:

1. The amplitude of the unstable particles becomes asymptotically smaller by increasing energy input. The ejection of inside mass M decreases. From this fact, it is possible to calculate the collapse of protocosm down to smaller and smaller radii and masses – but finitely small but already small to infinitely small. As far as the energy can form protocosm pairs, the process of inflating of stable particles with protocosm pairs starts, but comes to an end at the maximally given isolated wave energy of the receptacle cosm. This means: no receptacle cosm has as much energy that its photons could be brought to a graviton divergence naturally.

From hierarchy to hierarchy, the energy is transferred at another subcosm to the inside. In this respect, the maximal wave energy could correspond to pair formation energy of gravitons/antigravitons of $2 \times 10^{18}$ GeV, which can be reached inside of the protocosms of the known stable particles.

2. In the isolated state of unstable particles, the given coino-protocosms are forced kinetically for larger waytime dilations since they’ve been stable by what they are opening less, ejecting less internal mass – the external mass is increasing. This process can theoretically diverge to the longer non-opening of protocosms and to the external mass of infinite value at diverging isolated increasing of kinetic energy. Then the total life time of the formed unstable cosm would be combined maximally from exceeding of life time made by dilation of all the concerned protocosmic graduations in the concerned cosm sentences. Briefly, such a particle just does not only decay into the next unstable interstages but to its

stable identity in the end! All the steps must be added temporally. The total time increases in the same manner like the dilation time of protocosm in n = 1.

3. The collection of protocosm pairs however plays a limiting roll: each receptacle cosm has special protocosms. Their space would be limited by their pair formation, if in general vacuum the general velocity relationship wouldn't be valid. These isolated protocosms will be also forced to live by dilation of the waytime in the context of half their oscillation period.

Therefore, in the isolated interior, protocosm pairs are formed by supplied energy, which don't reflect some gravitational balance (gravitation = antigravitation.) but they reflect an e. m. energy balance. Particle pairs have got a gravitational zero balance. These subparticle pairs are also coupled at a process with higher energy, which is making them with a volume becoming smaller and smaller as well as heavier and anti-heavier (what is compensated to the isolated cosm balance with pairs): there is no mass increase as if there would be bosons analogously to photons! So physics made a conclusion also into "strange" terminology on a system of so-called "intermediate bosons" and of "Higgs-particles" explaining the "weak force", which is here unified essentially more simply with a new terminology (cf. TBA III).

A special, relativistic process is projected onto the outside seen from the inside here. The isolated total energies of the stable particles are however so much high that they cannot be reached by external energies. Briefly, that remains impossible to produce the isolated energy of a proton on physical way externally making a decay of a proton of total destruction of that proton into leptons. Just like this, it will be impossible to collect the isolated energy by a just formed cosm seed of a proton externally. A divergence in this respect exists also at the increase of the energy of a single particle of the cosm-seed.

Only then if another theory would be able to construct a convergence **plausibly**, which would stand contrary to our explained divergence of gravitation horizon, the decay of stable particles like also the transition of stable particle **types** (**species**) into other types (species) would be possible to be calculated seriously. Because "Quantum Mechanics" doesn't know spatial particles but it discusses about them, which are only wavequanta of particle formation as even only energy equivalents, it will not give a satisfying answer.

In our theory, we don't construct the change of stable particles into common heavier particles of one united mash like "Quantum Mechanics" does! Here, the decay of protons never happens! With us, the particles remain programmatically this feature what they are forever. We only show that they "come a cropper" over levels in their course of increasing energy at positions where other particles also "come a cropper". There are the "stairs" in energy field, which have a real cause by objectively existing oscillations in this frequency area caused by protocosms. Consequently, "Quantum Mechanics" is not able to give an anatomic particle theory or the "original force" predicting a convergence of all particle energies at $10^{32}$ Kelvin.

As we know now, the cosm amplitude of a stable cosm is $R_o$. If we set the magnitude $a_r$ into (3.2.1,2) and (3.2.1,3) equal to the cosm amplitude

$$a_r = R_o \quad , \tag{3.2.1,7}$$

then $r_+$ and $r_-$ come together to $R_o$. We got the vacuum sphere between the space of

$$\mathbf{R = 2R_o} \qquad \text{and} \qquad \mathbf{R = R_o}.$$

Till now, the magnitudes seem to disappear in a "Black Hole" below a gravitation radius $r_o = 2R_o$. According to Kerr's solution in special case of cosm, they cannot be touched already above of $r = R_o$ unless over the exchange of wavequanta. This means that the determined magnitudes $M_o$, electric charge Q and curl I are only inside of the isolated state or in it under the amplitudical existence. The real completion is then given, if the system was negated to an oscillating one. The imaginary number j is on the amplitude $R_o$.

At a protocosm, these magnitudes are temporarily inside below the divergence amplitude $R_{o(PK)}$. Vice versa, they will become free, if the unstable body decays while anticollapse (evaporation).

The mass exists in the vibrating movement of the moved anything. There, only cosms can be selected, which are only designed permanently stable. All of the other cosm connections of these stable "original" cosms change themselves into these stabilities by so-called decays and reversed reactions. We derive the **inconsistency clause** from the divergence of the protocosms and the cosm-seed:

**Cosms *aren't* durably compatible with each other in protocosms!**

The unification of cosms strives for an energetic divergence. Vice versa, the distribution of protocosms and cosm seeds leads to the energetic convergence. In the end, there are results in the shape of stabilities in the ocean of instabilities. Cosms are wandering on a small burr of stability – it is not an equilibrium but a state of sensitivity.

Using eq. (3.2.1,5) and (3.2.1,6), a cosm doesn't radiate: **T = 0 Kelvin**.

But a protocosm would radiate almost over eternal times from its divergence to be a cosm, if it would be static. This way, it would surely vaporize while hundreds of billion years. This thought is a theory of pure stationarity! Because our protocosm is not stationary, it opens itself already after inconceivably short time periods!

In (3.2.1,4) one recognizes the magnitudes in spherical measurements $R^2$. One expects a charge or an angular momentum area referred to the isolated mass determined of that area. For comparison of these magnitudes, we take the concepts of gravitational primary spin, g-spin, and of the electrical primary spin, q-spin, according to eq. (2.12,4). For charges Q the equation follows after which the primary momentum of n = 1 corresponds to a charge in electric or gravitational feature:

$$\bar{\mu}_{(1)} = e_o \times c \times R_o \quad , \tag{3.2.1,8}$$

$$\hbar_{(1)} = m_o \times c \times R_o \quad , \tag{3.2.1,8a}$$

$$\mathbf{Q_{el} = R_o} = \bar{\mu} / e_o \times c \quad , \tag{3.2.1,9}$$

$$\mathbf{Q_{gr} = R_o} = \hbar / m_o \times c \quad . \tag{3.2.1,10}$$

But the angular momentum **I** is explained here as wavequantum effect from which we have to follow to electrogravitational conditions:

$$\bar{\mu}_{(n)} = e \times v_{(n)} \times R_{w(n)} \quad , \tag{3.2.1,11}$$

$$\hbar_{(n)} = m \times v_{(n)} \times R_{w(n)} \quad , \tag{3.2.1,12}$$

$$\mathbf{I_{el} = R_{w(n)}} = \bar{\mu}_{(n)} / e \times v_{(n)} \quad , \tag{3.2.1,13}$$

$$\mathbf{I_{gr} = R_{w(n)}} = \hbar_{(n)} / m \times v_{(n)} \quad . \tag{3.2.1,14}$$

The spherical surface $\Sigma$ of the receptacle cosm is calculated corresponding to geometric laws:

$$\Sigma = 4\pi \times r_o^2 = 16\pi \times R_o^2 \, . \tag{3.2.1,15}$$

So the surface of the amplitudical radius of the cosm equals:

$$\Sigma_o = 4\pi \times R_o^2 \, . \tag{3.2.1,16}$$

We choose four cases and set them into (3.2.1,4) and discuss that result.

1. $Q = 0$; $I = R_w < R_o$:

$$\Sigma_{(w)} = 4\pi \times [2R_o^2 + 2(R_o^4 - R_w^2)^{1/2}] \; . \qquad (3.2.1,17)$$

If the effect of a wavequantum has to be described without any charge, then a wave amplitude exists in a receptacle cosm. If the wave amplitude is close to zero ($R_w \geq 0$), then follows $\Sigma_{(w)} \leq \Sigma$ and the isolation of this effect inside of this receptacle cosm horizon $r_o$. When we let the wave amplitude diverge to the receptacle cosm radius ($R_w \rightarrow R_o$), then follows $\Sigma_{(w)} < \Sigma$. Altogether, wave amplitudes remain in isolation between zero and the horizon $r_o$.

2. $Q = R_o$; $I = 0$:

$$\Sigma_{(Q)} = 4\pi \times R_o^2 \; ,$$
$$\Sigma_{(Q)} = \Sigma_o \quad . \qquad (3.2.1,18)$$

An electric charge q like also a gravitational charge g (a gravitational mass) arise from the oscillation of the amplitude $R_o$. Setting in of Q with $2R_o$ leads to imaginary magnitudes but then to the change of the world of charge, because that would be open while overcoming the horizon of $R_o$.

3. $Q = I = 0$ :

$$\Sigma_{(0)} = 16\pi \times R_o^2 \; ,$$
$$\Sigma_{(0)} = \Sigma \quad . \qquad (3.2.1,19)$$

The limit is $r = 2R_o$! At least, this result shows that the defect position comes from its horizon area $\Sigma$ at an external indication of charge and wavequantum closing the receptacle cosm. If there is no charge and no momentum mass measurable, then this is the result of the horizon at least.

4. We assume once a particle of the defined charge for Q could be a wave of the wavequantum "**I**" at the same time. If this would be as assumed, "Quantum Mechanics" would be right with its "particle unification" made as pure wavequantum unification with big-bang-consequence:

$Q = R_o$, $I = R_w \leq R_o$ :

$$\Sigma_{(Q,I)} = 4\pi \; [R_o^2 + 2(j^2 \times R_w^2)^{1/2}] \; ,$$
$$j^2 = -1 \; ,$$
$$\Sigma_{(Q,I)} = 4\pi \; (R_o^2 + 2j \times R_o') \; , \qquad (3.2.1,20)$$

This area is around an imaginary number, we say: around a world change above the amplitude area. The inside and the outside seem to change here. We can interpret this mathematical state: the wave energy has to stay inside of its own cosm.

For both cases, no real common solution exists at all!

If both states appear together as resting charge and wave mass, then they are not connected by one common cause:

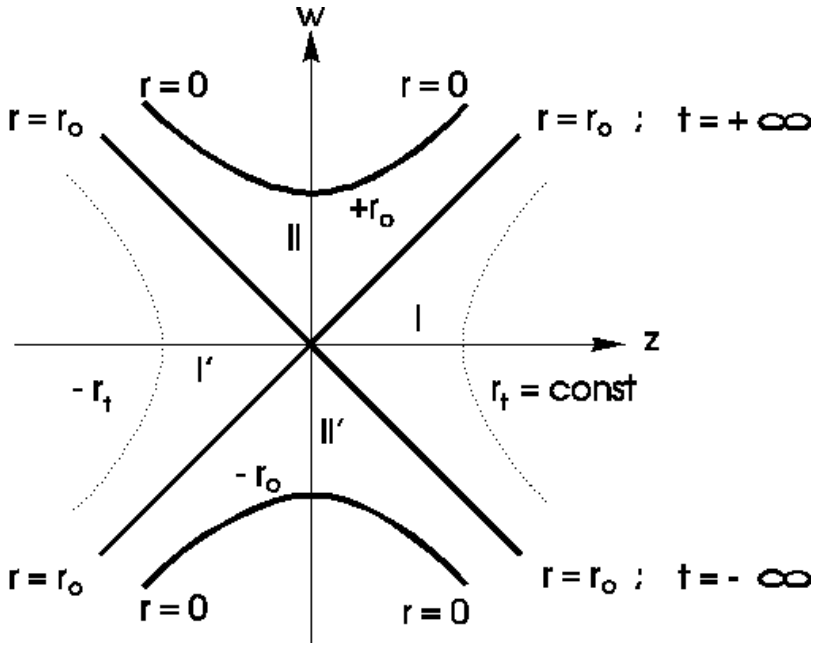
> **The particle does not have the same magnitude to be a cosm and equally to be an electromagnetic wave in direct and parallel connection! That e. m. wave sent or received is an external balance function of cosm. Balances, which are standing in connection with their inside only are running over pair formation.**

The primary cosm spin and the secondary wavequantum spin have each a different intrinsic relativity; but they can appear coupled with each other.

3.2.2. Kruskal's Solution (Kruskal, 1960)

Resulting from Kruskal's metrics, spherical coordinates $\phi_1$ and $\phi_2$ are valid for localization of sub-spaces of spherical symmetric shape. The coordinate z is space-like, w is time-like. In the following illustration, the Kruskal diagram of Schwarzschild's solution ($\phi_1$ and $\phi_2$ are suppressed) is presented here:

Illustration 3.2.2;1: Kruskal Diagram




(cf. /Q 15/, page 208, illustration 22.1)

Stephani interprets it like this:

"Briefly we want to show how Schwarzschild metrics and its singularity look like from the point of view of Kruskal's metrics. The external space of Schwarzschild metrics" ($r > r_o$; t finite) "corresponds to the area I [...] in which $z > |w|$ is valid. The margin of this area, which is described in r, t-coordinates by $t = \pm \infty$ or/and" $r = r_o$ "form the rays $w = \pm z$, $z \geq 0$. If one exceeds this margin into the area II, this means, if one exceeds $t = + \infty$," $r = r_o$, "then one comes into the 'inside' of the usual Schwarzschild metrics[...] The areas I' and II' in which one can come by further varying of coordinates w and z are isometric (metrically non-differentiable) to I or II: the maximum extension of Schwarzschild's solution includes the external" ($r > r_o$) "and the internal" ($r < r_o$) "part of Schwarzschild-metrics just two times. There are no limits or singularities with the exception of the real (like one can show) singularity r = 0, which is not be able to be canceled by coordinate transformations drawn by both hyperbolic arcs in Kruskal diagram." (/Q 15/, page 208f)

Contrarily, we recognized the following conclusion. Because of the supposition of $\phi_1$ and $\phi_2$, this interpretation must remain incompletely since we are separating with that off of each installation of spacetime. Consequently, we only see these spaces, which give the stationarity of vacuum. So we conclude from the isometrics of the areas I/II to I'/II':

> Obviously, a negative solution exists that can be seen as negative Black-White Hole – as a black-white Anti-Hole. So we mean these are the stable antiparticles!

Therefore, one can go into a subworld like also into a sub-antiworld coming from an antiworld. As well one can do if one is living in a world. There one is meeting particles and antiparticles as we do.

3.2.3. Friedman's Solutions (Friedman, 1922)

Theses:

The solutions on hand are perfect.

Antitheses:

Two further solutions are inscribed yet to Friedman's solutions, anyway, which represent well the most important state of matter as an oscillating system with negated mass – the real elementary quantum.

Now we change the formula of Friedman's solutions corresponding to our electrogravitation. Preconditions of simplification are the eq. (2.8,2), (2.3,2) and (2.8,6). Friedman's solutions represent the existence of radiation cosms, especially a) the photon cosm to which the fallon cosm of gravitation's radiation is analogous. Under b) the unity of the common cosm of photons and fallons is made of the oscillating system of the real resting mass (or rest charge) of the cosm. From this solution, one can derive that the internal mass will be ejected by quantized shape and from oscillating protocosms and that it will be given back to them by destruction of external structures while a radiation cosm is arising and passing.

a) Radiation Cosm (Magon)

Friedman's density $\mu_{F(\gamma)}$ of photons exists in the frame of electric way-energy $A_{el.}$ with the unit Jm:

$$A_{el.} = \mu_{F(\gamma)} \times c^2 \times r_o^4 = \text{const.} \qquad (3.2.3,1)$$

We cause it by practical calculation of intensity of electromagnets in $C/m^3$ into a momentum mass per volume $m_{w\gamma}/m^3$. Analogously, instead of the electromagnets, one could observe the gravitomagnets describing a fallon cosm of gravitation's radiation.

An amplitudical determination follows under those three parameters $\varepsilon$ :

$$\varepsilon = 0 \quad r_1^2 = 2c(t - t_A) \times \sqrt{(G_E \times A_{el.}/3)} \qquad (3.2.3,2)$$

and with the selected constant $r_o$

$$r_o = \sqrt{(G_E \times A_{el.}/3)} \qquad (3.2.3,3)$$

follows: $r_1^2 = 2c \times r_o \times (t-t_A)$ ; $t_A$ as time origin; (3.2.3,4)

$$\varepsilon = -1 \quad r_2^2 = c^2(t - t_A)^2 + 2c \times r_o \times (t - t_A) \text{ and} \qquad (3.2.3,5)$$

$$\varepsilon = +1 \quad r_3^2 = -c^2(t - t_A)^2 + 2c \times r_o \times (t - t_A) . \qquad (3.2.3,6)$$

For $t = t_A$, the limit $r = 0$ exists as starting point of photons $\gamma$ (electric wavequanta, electromagnets). In an isolated cosm, $r_3$ grows from zero up to $\pm r_o$ as the maximum and after the time difference $\Delta t = 2r_o/c$, it goes back again to $r_3 = \pm 0$. (/Q 15/, page 245..., (26,23), (26,26))

What however is an isolated radiation cosm acc. to equation (3.2.3,6)? This is a **magnetic cosm,** but it is not the well-known electric wavequantum named photon! Here we derive a solid particle of magnetism, no matter if it is electromagnetic or/and gravitomagnetic. We chose the name MAGON and ANTIMAGON for the anti-feature. Because of the internal contrasts of momenta (conservation of momentum), always magon pairs are existing. In this respect, a further primary and ideal oscillator gets its task to be a magnetic producer of wavequanta. This cosm is an analogon to a stable cosm when its internal coordinate system remains isolated relatively to the outside. That would hit the fact, if the internal oscillation would be limited on the amplitude $R_o = ½r_o$. If it would exceed over it analogously

the protocosms, then there are temporary radiation cosms or unstable magnetic particles. Theoretically, here is the **corpuscle character of magnetism** given, but in pair connection. We find a new quality at it representing a cosm itself. Inside, the real oscillator of magnetism is hidden – the magnetic generator. In principle, that thing would be a **magnetic monopole**. Because these poles of magnetism are coupled in pairs, independent and free magons don't appear from their antimagons in freedom. In this respect, each magnetic charge is compensated to zero – and we have a further type of vacuum.

The protocosm as open system only exists as each elementary state inside of a receptacle cosm. It represents a real subcosm, which is able to decay according to eq. (3.2.3,5). With eq. (3.2.3,4), a decay of a protocosm by anticollapse, light rays all over moved take off as a cloud of photons coming back on curved ways and synthesizing a new protocosm from those subparticles striving to a center. After the opening of protocosms, their radiations exist inside of the magnetic protocosm pairs in the shape of **PK-magon pairs**. If a protocosm annihilates against an antiprotocosm, two light cosms (magons) will become free in the same volume. The annihilated magnitudes exceed the necessary resting mass by the factor of $10^{9...10}$. An anticollapsed protocosm produces half the dense radiation cosm in opposite to an annihilated protocosm pair of the same type. From these states of density, light cosms have to grow over elongation arriving their own amplitude and falling back then over their elongations creating the original protocosms again at the remaining resting mass. These light bubbles are able for pair formation, if there is only one particle lost that has the energy for the change of the contracted light cosm into pairs of particles (see section 2.14.). Because light waves are analogous to the gravitational waves, the density of a multiple number of gravitation wavequanta can also form gravitation radiation cosm.

b) Friedman's Cosmos of Electrogravitation

Here we think having found the cosm of the internal mass $M_o$ coupled at the necessity of the given existence of a radiation cosm. In this respect, the radiation is primary. Different states of internal mass are able to exist together. Qualitatively, for the single elementary resting mass of gravitation $m_o$, the resting charge of electrition $e_o$ is given, too.

For this cosm of both matter, the density term of mass is expressed with an energy value:

$$D = \mu_F \times c^2 \times r_o^3 = \text{const.} ; \qquad (3.2.3,7)$$

gravitational energy number D with the unit J, corresponds to $M_o$; intensity multiplied with $c^2$.

D is proportional just like $r_o$ for closed cosms with total mass $M_o$.
(/Q 15/, page 246 (26,28))

The "Friedman differential equation" follows:

$$\dot{r}^2 = (G_E \times D /3r) - \varepsilon \quad . \qquad \text{(/Q 15/, page 246 (26,29))} \qquad (3.2.3,8)$$

We define that variable in specific form

$$\phi = c \times T_E = \pm \int_{r_{(ct)}} \frac{dct}{} = \pm \int_{r_{(ct)}} \frac{dL}{} \qquad (3.2.3,9)$$

with the definition range of Einstein's parameter $T_E$

$$-\infty < T_E < +\infty \quad \text{and its interval} \quad 0/c \le T_E \le 2\pi/c$$

from which according to our definition of variables, its definition range and its intervals are given:

$$-\infty < \phi < +\infty \quad 0 \le \phi \le 2\pi \quad \text{with} \quad \phi_o = 2\pi \text{ . (/Q 15/, page 246 (26,30))}$$

It describes an independent magnitude $\phi_x$ for each solution. Because of the adjusting of the interval on positive angles temporarily, we neglect their negative values.

If $t_B$ is chosen for initial time at which r disappears, under use of those three parameters already changed onto the horizon $r_o$ with (3.2.3,19), the following equations are valid:

$\varepsilon = 0$ $\quad r_1 = G_E \times D \times c^2 \times T_E^2 /12$ ; $\quad L_1 = c(t - t_B) = \pm \frac{1}{2} r_o \times \phi^3 /6$ , (3.2.3,10)

$\varepsilon = -1$ $\quad r_2 = G_E \times D(\cosh cT_E - 1) /6$ ; $\quad L_2 = c(t - t_B) = \pm \frac{1}{2} r_o (\sinh\phi - \phi)$ , (3.2.3,11)

$\varepsilon = +1$ $\quad r_3 = G_E \times D(1 - \cos cT_E)$ ; $\quad L_3 = c(t - t_B) = \pm \frac{1}{2} r_o (\phi - \sin\phi)$ . (3.2.3,12)

/ Q 15, page 246 (26,32) to (26,34)/ By the notation of way evolution L = c × t, this equation follows:

$$d\phi = \pm dL /r_{(ct)} = \pm dL /r_{(L)} . \quad (3.2.3,13)$$

For the angular interval (rotation angle of cycloid in one of both directions have been chosen) and the following maximum angle of observation, we get

$$\phi_o = 2\pi = 2L_o /r_o . \quad (3.2.3,14)$$

There are $L_o$ as perimeter of cycloid unit circle and $r_o$ as its diameter. The unit circle is allowed to be turned around to the left and to the right (parity of primary spin) for drawing of a cycloid. That radius of the unit circle amounts $\pm R_o$ according to eq. (2.8,2). Corresponding to the proportionality, the coordinate volume of the unit sphere $V_F$ can take this equation

$$V_F = 4\pi \times r_o^3 /3 \quad (3.2.3,15)$$

where the smallest density $\mu_F$ is measured with

$$\mu_F = M_F / V_F . \quad (3.2.3,16)$$

Friedman's density $\mu_F$ represents such a density that makes an unstable cosm as a protocosm. Here the factor 8 is lost for stable central density.

With (3.2.3,16), the energy number D will be changed by (3.2.3,7) to:

$$D = 3M_F \times c^2 /4\pi = 3E_F /4\pi . \quad (3.2.3,17)$$

Then for the electrogravitation radius $r_o$ with (2.8,3) and (2.8,6) follows

$$r_o = 2G \times M_F /c^2 = G_E \times c^2 \times M_F /4\pi , \quad (3.2.3,18)$$

it is valid, from which over (3.2.3,15) the so-called Friedman-world radius $r_o$ follows:

$$r_o = G_E \times D /3 . \quad (3.2.3,19)$$

With this fact initially, it is proved that any spacetime is limited by the electrogravitation horizon $r_o$ also in non-stationary case and that a **non-stationary Black-White Hole** is conceptionally possible. Because of (3.2.3,19), the eq. (3.2.3,14) can be written in the form of

$$L_o = \pi \times r_o = G_E \times D \times \pi /3 \quad . \quad (3.2.3,20)$$

The simplified Friedman-equations have got the forms as followed.

a) as temporarily closed cosm:

$\varepsilon = 0 \quad r_1 = \frac{1}{4} r_o \times \phi^2 \quad ; \quad L_1 = c(t - t_B) = \pm \frac{1}{2} r_o \times \phi^3 / 6 \,,$ (3.2.3,21)

b) as temporarily open cosm:

$\varepsilon = -1 \quad r_2 = \frac{1}{2} r_o(\cosh\phi - 1) \; ; \quad L_2 = \pm \frac{1}{2} r_o(\sinh\phi - \phi) \,,$ (3.2.3,22)

c) as isolated cosm (the primary quantum as universe itself)

$\varepsilon = +1 \quad r_3 = \frac{1}{2} r_o(1 - \cos\phi) \; ; \quad L_3 = \pm \frac{1}{2} r_o(\phi - \sin\phi) = \lambda_o \,.$ (3.2.3,23)

If we set into these equations the equation (2.8,2), it gets very conspicuous that with our view below the horizon $r_o$ further simplifications are possible, which have the character of an oscillation of the amplitude of $R_o^2$ in the elongation of $\mathbf{R^2 = R_o^2 \times \cos^2\phi}$.

The limits of r, t = 0 and t = $t_b$ have to be interpreted more deeply than this was possible till now with the opinion of transitional cosms (3.2.3,24), open cosms (3.2.3,25) and of **closed cosms (3.2.3,26)**:

$r_1 = R_o \times \phi^2 / 2 \quad ;$ (3.2.3,24)

$r_2 = R_o(\cosh\phi - 1) \; ;$ (3.2.3,25)

$r_3 = R_o - R_o \times \cos\phi \quad$ or (3.2.3,26)

$r_3 = R_o - R \quad .$ (3.2.3,27)

That radius $r_3$ is the reflection of a cosine function in a fundamentally positive coordinate system, because $R_o$ exists already as a reference measurement! We are told that the so-called negative state of oscillating cosm does not change the type of matter, but it represents a pure movement relationship. Friedman's solution just really shows that from an arbitrary time in limited space, a quantity of gravitomagnetic and electromagnetic waves are arising spherically from protocosms and coming back to this point after a determined time, which is dependent on the world time. We see this as the opening time of an arbitrary protocosm of many equal protocosms, which has arrived the determined living height of world amplitude. There, it radiates its spherical wave, which intrinsic time $\tau_b$ can be just remained in addition to the universal time $\frac{1}{2}\tau_o$ (cf. below (3.2.3,32)). While the spherical wave is existing and falling down being the radiation cosm coming back, the structures of coinomatter, which were set free from that protocosm, are living their real time $\tau_b$. The higher the protocosm is programmed to fly to the amplitude $R_o$, the less idleness (strolling) time $\tau_b$ remains for its existence within its radiation bubble.

Corresponding to the task given to us starting this discuss, the interpretation of (3.2.3,27) as world formula is not difficult:

1. Below the electrogravitation radius $r_o$, a spacetime is oscillating with the amplitude $R_o$. The quasi-radius $r_3$ subscribes a complementary cosine graph.

2. The cosm realizes the isolated mass $M_F$ as $M_o$.

Because of the symmetric solution, the following sentences are inscribed to the cycloid solution:

1. A cosine function with positive amplitude $R_o$ and positive phase angle $\phi$.
2. A cosine function with negative amplitude $-R_o$ and positive phase angle $\phi$.
3. A cosine function with positive amplitude $R_o$ and

negative phase angle -$\phi$.

4. A cosine function with negative amplitude $-R_o$ and negative phase angle -$\phi$.

We interpret this as follows:

The solutions (3.2.3,24) and (3.2.3,25) describe the external possibilities of energy balances as decaying unstable particles (state of white holes) as well as the reversion to be the combining (state of Black Holes) of cosms into an unstable particle. Unstable particles are forming cosm pairs via energy firing. We call them cosm seeds.

Both solutions are also standing explicitly for formation and decay process of protocosms. With the principle, formation and decay only reflect an open quarter oscillation. The solution (3.2.3,25) represents the cause of the relative being open at the inside of a receptacle cosm.

These solutions of (3.2.3,26) and (3.2.3,27) reflect stable and isolated cosms.

Converting (3.2.3,27) to $\mathbf{R = R_o - r_3}$ , we get a limit R = 0, which shows the zero-passage of oscillation of one single waytime R = c x t.

This way, the fact is made fix mathematically that a non-stationary Black-White Hole is allowed to be described as an ideal oscillator existing below of $r_o$ corresponding to Planck's quantizing - at his time this procedure was thought for waves.

We define the most very own primary quantum as a cosmos for the present sake of terminology!

From Friedman's solutions, a strategy can be derived, which ascribes the cosmological red shift to the growing of the world radius in principle. But we have to ask, which subordinated processes lead to the increase of world radius! Those events are presently described by the simple representation of "Big Bang" and of a real volume expanding itself. According to our opinion, the gas volumes arise locally quantized. Therefore, the simplified analogy construction of "Quantum Mechanics" to gas-kinetic volume dependence of temperature is failed. Here we have to take notice for the spectrum shift corresponding to Friedman. A cosm (a stable particle) doesn't lose isolated energy by independent radiation, because no element is able to exceed the convergent horizon $r_o$. Nobody can reach it since all the mass is locked inside of the amplitudical oscillation of $\frac{1}{2}r_o = R_o$. Only the stability balance is conceivable. As much as it is falling into this system, it has to get out again.

The radiation law of Planck (1900) sets relationship of electromagnetic energy density $\mu_{(f)}$ in Js/m$^3$ as intensity of effects h (Js) per volume V (m$^3$) of wavequanta of the same energy $E_w$ with the wave frequency f ($f_w$) in Hz or s$^{-1}$:

$$\mu_{(f).} = 8\pi \times h \times f^3 /[c^3(e^{h \times f /k_B \times T_{-1}})] \; . \qquad \text{(/Q 12/, page 280)} \qquad (3.2.3,28)$$

Additionally there are:

T - temperature equivalent of average radiation energy $\Delta E_{(n)}$ of a black radiator in Kelvin,

$k_B$ - Boltzmann's constant acc. to (3.2.1,6a) in J/K where $\Delta E_{(n)} = k_B \times T$ is valid,

e - base of natural logarithm: e = 2.7182818,

h - Planck's constant (effect quantum) in Js,

c - vacuum light velocity in m/s.

The equation (3.2.3,1) is changed by Stephan-Boltzmann's radiation law into:

$$\mu_{F(\gamma)} \times c^2 = \text{const.} \times T^4 \; . \qquad \text{(/Q 12/, page 281)} \qquad (3.2.3,29)$$

With (3.2.3,1) one gets $T^4 \times \text{const.} = A_{el.}/r_o^4$

and concludes the relationship from relativity theory, which was blurry interpreted until now, because this state does not equal a general so-thought expansion of a particle cosm from “Big Bang":

$$T \sim 1/r_o \quad . \qquad \text{(/Q 15/, page 252 (27,12), (27,13))} \qquad (3.2.3,30)$$

This means: the electrogravitational wave energy in the feature of temperature T is indirectly proportional to the electric or/and to the gravitational horizon $r_o$ of a radiation cosm or of a cosm, which only can be described by its waytime $2R_o$, $2t_o$ in **one-dimensional feature**. The radiation cosms represent spatial waves (sky waves) with reversal behavior. Their expansion equals the elongation R to the amplitude $R_o$, which contraction has to be set equal to the elongation R decreasing from the amplitude to zero. Our concepts of expansion and of contraction have nothing to do with identical concepts of “Big Bang theory"!

For internal effects, the following conditions are valid:
Along that running of reduction of radiation density at expansion of spatial wave, the temperature is linearly decreasing with the increase of elongation radius $R = ½r$ onto the amplitude $R_o$. After return of that spatial wave from the amplitude in contraction process, the temperature is increasing again. No matter if the cosm now has resting mass inside or not and if it is just a radiation cosm, the temperature of its photons or fallons is falling along the increase of amplitudical elongation and arising with the decreasing elongation coming from the amplitude going to the zero-passage. The shift of temperature change is absolutely zero-loss in isolated cosm.

Until now one has only known the relationship of laws of Gay-Lussac and Boyle-Mariotte thinking at the putative “Big Bang" by which the phenomenon of background radiation was plausibly explainable as a “turn of expansion of exploding macrocosm". To the additional underpinning, one took into account the equation (3.2.3,30) for a cause of relic radiation. But the laws of Gay-Lussac and Boyle-Mariotte contradict that equation with the potency of receptacle extension. Therefore, the general state equation of the gasses says nothing to the background radiation at all. To this, we have written separately (see section 4.4.).

For the external effects, the following sentences are valid:

1. Convergence: for cosms

> A larger electric cosm horizon $r_o$ only exists as reflection of its amplitude $R_o$ in relative rest of the observer in stationary vacuum. It makes a larger magon pair with proportionally less magnetic energy or mass.
> The larger the amplitude of a cosm the less is its resting mass.

(3.2.3,30) means that the external magnetic charge of a magon can be calculated changing into a temperature. You have to take in account that it is possible to conclude on cosms of magnetic type and also on gravitational particles:

> **The larger the amplitude of a cosm, the less is its electric or its gravitationally resting charge or resting mass (resting energy).**

2. Divergence: for radiation protocosms

> The larger the amplitude of PK-magon, the less is its magnetic charge pair.

A cosm emits its radiation,

a) if it annihilates against an anticosm;

b) if it emits the radiation, which came in returning to stability equally.

c) A protocosm also radiates, if it evaporates during an anticollapse (see section 2.14.).

Every cosm has its own period time $\tau_o$. After half a period $K_o$ the cosm sphere $\Sigma_o$ made an oscillation while the following contrary oscillation $K_o$ completes the whole period $\lambda_o$. Just inside of half the period $K_o$ the absolute waytime is given as oscillation waytime $\lambda_o$, $\tau_o$ (oscillation length in connection with period time: $\lambda_o = c\ \tau_o$).

If half the oscillation waytime $½\lambda_o$, $½\tau_o$ of a receptacle cosm is running over one single waytime step $r_i'$, $t_i'$ by relativistic movement of that elementary cosm acc. to (2.19,34) that there $½\lambda_o' = r_i'$ is valid, then this is an installation waytime $K_i$, $\tau_i$. And then the moved elementary cosm doesn't have any idleness (strolling) waytime $K_b$, $\tau_b$ with vacuum light velocity c. But it has an installation waytime $K_i$, $\tau_i$ without using it. That elementary cosm cannot make an installation from itself to give the same idleness waytime to the ejected world (to galaxies and their common photon cosm) (cf. section 2.19.):

$$K_b = ½\lambda_o - r_i' = 0\ .$$

This corresponds to the law

**Installation waytime $K_i$, $\tau_i$ ($r_i'$, $t_i'$) + idleness waytime $K_b$, $\tau_b$ = receptacle waytime $K_o$, $\tau_{(K)}$.**

If one even gets a negative idleness waytime, the dilation has come so far that the elementary cosm doesn't take part in death and rebirth of its receptacle cosm along that single oscillation period. It survives to take part in one of the next arbitrary oscillation when its velocity would be decreased or interactions have done it. Conclusion: the elementary cosm can become older than its receptacle cosm using relativistic effects of increasing velocity to vacuum light velocity. Although, it cannot leave it because of the acting forces, the shift of the intrinsic oscillation means: before the elementary cosm oscillates, one time to the receptacle cosm death and rebirth have happened already. Sensibly with dilation of waytime of elementary cosms one can reach or even exceed the "age" of the receptacle cosm of macrocosm without dying. Always then, this limit has to conserve the given cosm, no matter if it is externally unstable. Theoretically, it's possible to survive the cosm pulse with one oscillation at least (life time of unstable particles). Here we have the objective reason of time journeys but only forward in the inseparable waytime arrow.

The elementary cosms are ejected by the protocosms in relativistic movement. So a shorter waytime of idleness $K_b$ also follows for them relatively to the oscillation waytime $K_o$:

Idleness bow (the unpacked things of protocosms are living their waytime)

$$K_b = K_\gamma = K_o - K_i = K_o - r_i\ /(1 - v_v^2\ /c^2)^{½} \qquad (3.2.3,31)$$

Idleness time

$$\tau_b = ½\tau_o - \tau_i = \tau_{(K)} - t_i\ /(1 - v_v^2/c^2)^{½}\ . \qquad (3.2.3,32)$$

This way, the dilation of waytime $r_i$, $t_i$ referred to the remaining idleness waytime of cosm can be interpreted as installation waytime $s_i$, $\tau_i$ in term 1 of Schwarzschild's solution. We have to take notice that there an installation is also running while the run of oscillation waytime $\lambda_{o(PK)}$, $\tau_{o(PK)}$ at the inside of protocosms, which is now extremely decelerated by the reason of this relationship. This means: the period time and the oscillation length of protocosms are dilated.

Additionally, the wave waytime $dr_w$ of protocosms contracts including its velocity in vacuum. The faster those protocosms are, the smaller their wave amplitude $R_w$ is, the larger their wave energy $E_w$ and their wave momentum $p_w$ are. That contraction of waytime is referred to the term 3 of Schwarzschild's solution.

It is possible to connect the oscillation solution directly with the conception of a matter oscillator of harmonical oscillation. Under the condition of a uniformed angular velocity in Friedman's solution and in the oscillation of the adapted unit circle

$$\omega_F = \omega \qquad (\omega = c / R_o) \tag{3.2.3,33}$$

the perimeter steps du are forming equivalent oscillation length steps dS and Friedman-way steps dL referred to the movement steps $d\phi$. Then there are valid:

$$u = \phi_o \times R_o = \lambda_o = L_o \qquad \text{with} \tag{3.2.3,34}$$

$$du = d\phi \times R_o \; . \tag{3.2.3,35}$$

Using eq. (2.10,18) and (2.10,19), the elongation R reaches the amplitude value $R_o$ in $t_o$ while running of amplitude time or elongation time t:

$$R_o = c \times t_o \tag{3.2.3,36}$$

$$R = c \times t \qquad \text{(cf. (2.3,1))} \; . \tag{3.2.3,37}$$

We can write for the expansion of the front of the spherical wave, which stops in $R_o$ and returns back to R = 0 analogously to (2.3,2):

$$R_w = c \times t_w \; . \tag{3.2.3,38}$$

This equation is also valid for the calculation of amplitude $R_w$ of a wavequantum into its amplitude time $t_w$.

Then $\tau_o$ can also be valid as perimeter time and explain the spacetime as a process of the completeness of all the waytimes:

$$\tau_o = 2\pi \times t_o \; . \tag{3.2.3,39}$$

The space and its time arise from ejected ways and their times.

Each waytime steps du can be also expressed as equivalents of period time steps $d\tau$ by eq. (3.2.3,36) and (3.2.3,39):

$$du = c \times d\tau \; . \tag{3.2.3,40}$$

The forces of the oscillation of a mass $M_o$, which is locking its space forming its stable cosm or only a protocosm for a short time, are referred to the maximum centripetal force $F_o$:

$$F = F_o \times \cos\phi \tag{3.2.3,41}$$

$$F = M_o \times a \qquad \text{(Newton (1643-1727))}, \tag{3.2.3,42}$$

with (2.10,14)

$$F = - M_o \times R_o \times \omega^2 \times \cos\phi \; , \tag{3.2.3,43}$$

$$F = - M_o \times R \times \omega^2 = M_o \times a_o \times \cos\phi \; , \tag{3.2.3,44}$$

$$F_o = - M_o \times R_o \times \omega^2 = M_o \times a_o \; , \tag{3.2.3,45}$$

$$F_o = - G_v \times M_o^2 / R_o^2 \; . \qquad \text{(Newton)} \tag{3.2.3,46}$$

We get the energy relationships to the maximal potential energy $E_o$, which is forming the inside:

$$E_o = M_o \times c^2 \quad \text{(after (2.4,16))}, \qquad (3.2.3,47)$$

$$E_o = F_o \times R_o \quad \text{(after (2.9,21), (2.9,22))}. \qquad (3.2.3,48)$$

(/Q 5/, page 98ff)
Using eq. (2.8,3), we already know half the electrogravitation radius $R_o$ being the amplitude:

$$R_o = G_v \times M_o / c^2 \quad . \qquad (3.2.3,49)$$

Using (3.2.3,33), a factor c can be expressed as: $R_o = G_v \times M_o / (c \times R_o \times \omega)$ by what the known equation of deceleration appears with eq. (2.10,15):

$$a_o = - G_v \times M_o / R_o^2 \quad , \qquad (3.2.3,50)$$

Eq. (3.2.3,46) is confirmed. If one sets the eq. (2.8,3) into (3.2.3,46), then the force $F_o$ follows being the universal constant for all ideally oscillating masses or charges:

$$F_o = -c^4 / G_v \qquad (3.2.3,51)$$

$$F_o = - 1.21031 \times 10^{44}\ \text{N} = \text{const.} \qquad (3.2.3,52)$$

This extreme force locks the spacetime referring to the isolated cosms. Its constant amount can be also explained with its relationship to Einstein's gravitation constant $G_E$.

$$F_o = 8\pi / G_E \quad \text{(acc. to (2.8,6))}, \qquad (3.2.3,53)$$

because we can see $G_E$ as a reciprocal force $F_E = - 4.8156703 \times 10^{42}$ N, which has to be really negative. In this connection, we recognize a spacetime constant of gravitation $G_o$:

$$G_o = 1 / F_o = - 8.262346 \times 10^{-45}\ \text{N}^{-1} \ . \qquad (3.2.3,54)$$

This interpretation of an oscillating mass $M_o$ below the horizon $r_o$ can be continued. While the collapsing mass $M_F$ as $M_o$ would be contracting on up to the radius $R_o$ and forming out of intrinsic structures according to the laws of dipole forces, a new stable cosm would arise. In reality, this way is impossible. Stable cosms are existing from the beginning (a priori). Unstable cosms will be formed and destroyed by collapse and anticollapse, during their oscillation is diverging to $R_o$ but not converging. For stable cosms, Friedman's values can be converted into magnitudes of our theory [for unstable cosms the equations (3.2.3,56) to (3.2.3,60) are only valid in the form of inequalities of divergence]:

$$M_o = M_F \ ; \quad E_o = E_F \quad , \qquad (3.2.3,55)$$

$$R_o = G_E \times c^2 \times M_o / 8\pi \quad , \quad \text{(cf. (3.2.3,18))} \qquad (3.2.3,56)$$

$$V_o = 4\pi \times R_o^3 / 3 = V_F / 8 \quad , \quad \text{(cf. (3.2.3,15))} \qquad (3.2.3,57)$$

$$\mu_o = M_o / V_o = 8\mu_F \quad , \quad \text{(cf. (3.2.3,16), (3.2.5,4))} \qquad (3.2.3,58)$$

$$D = \mu_o \times c^2 \times R_o^3 \quad , \quad \text{(cf. (3.2.3,17))} \qquad (3.2.3,59)$$

$$R_o = G_E \times D / 6 \quad . \quad \text{(cf. (3.2.3,19))} \qquad (3.2.3,60)$$

This means: the oscillation volume $V_o$ has only the eighth part of Friedman's volume $V_F$. Vice versa, the oscillation density $\mu_o$ is acting. A cosm with a smaller density than $\mu_o$ is a protocosm and therefore an open system, which is only divergently and temporarily closed, if it is just oscillating over one half

a period for one times between collapse and anticollapse! At the next oscillation, it can have got different magnitudes and it can be converted up to new oscillation values because of its open exchange with the environment (cause of evolution factors after program for changing programs).

A COSMOS obviously exists only then, if its oscillation is exactly limited at $½r_o = R_o$. Just in this case, the inside mass $M_o$ oscillating there will be externally negated to the outside mass $m_o$. The oscillation of a stable cosm is a priority of the matter. Like the matter itself, it isn't able to create and to finish by our assistance.

It's a complete different thing with unstable cosms and protocosms. The stable cosm can be disturbed by energy influence while it is striving to equalize that disturbance and to come back to stability. These events make variety of particle reactions.

Protocosms will be born from the outside by a collapse, which is supported of radiation. Until the contracting mass $\Sigma m_o = M_o = M_{o(PK)}$ has reached the proximity of the divergent amplitudical radius $R_{o(PK)}$, the external mass $m_o = M_o$ remains working externally. This is the short-time state of the so-called "Black Hole". As soon as the mass $M_o$ gets under the amplitude of the oscillating system of $R_{o(PK)}$, it will be directed to the inside and negated by the end of the internal coordinate system curved totally. Now it works like an oscillation mass of a cosm $M_{o(PK)}$.

After passage of its own amplitude $R_{o(PK)} = R_d$ to R = 0 and back to $R_{o(PK)}$, the intrinsic oscillation is made. Externally, one only can measure that mass $m_{o(PK)}$ acc. to eq. (2.7,4) (cf. sections 2.8., 2.9., 2.13.1., 4.1. and 4.2.).

Now the question appears, what time features are the times given in Friedman's solutions

a) Radiation cosm $t - t_A = \Delta t_A$ and (3.2.3,61)

b) Friedman-cosm $t - t_B = \Delta t_B$ . (3.2.3,62)

The time step $\Delta t_B$ is the equivalent of the period time step $\Delta\tau$ because of the running variable from eq. (3.2.3,9) introduced there. It is valid

$$dt_B = d\tau \quad . \tag{3.2.3,63}$$

If we observe this solution (3.2.3,6) better, then it is shown that (3.2.3,6) in the step $\Delta t_A \cdot c = 2r_o$ is nothing else than reflection of the equation of the horizon circle of that $r_o$ (illustration 3.2.3;1). In this respect, it is the **vacuum sphere** $\Sigma = A_{(r_o)}$, which reflects the central cut of such a horizon. The middle dot equation of that circle is now: $r_3 = \pm r_o (1 - r^2/r_o^2)^{½}$. With the help of the law of Thales (625-545 before Christ) and the similarity of three right triangles, it is able to be proved that for this argument

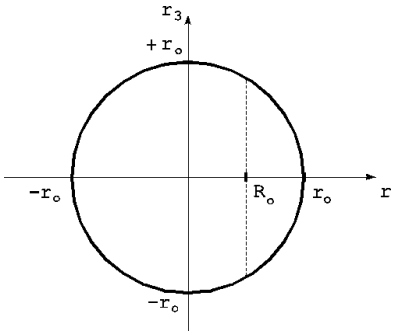
$$r = ½r_o = R_o \quad ,$$

the following function value

$$r_3 = \pm ½r_o\sqrt{3}$$

hits the corresponding points of the horizon circle.

Illustration 3.2.3;1: Horizon Circle




This means:

1st Light waves or gravitational waves cannot exceed over $r_o$ without any help (non-stationary Black-White Hole).

2nd If the wave was dimensionless, it would be running eternally at the perimeter of the horizon circle.

Therefore, the time $\Delta t_A$ is defined as amplitude time step:

$$dt_A = dt \quad \text{and} \quad dr = dt_A \times c = c \times dt \quad . \tag{3.2.3,63}$$

On a different way, we can see that a radiation cosm corresponds to the Friedman-cosm in that sense of our hypotheses according to its density-energy-relationship (3.2.3,1), (3.2.3,7) and (3.2.3,59):

$$A_{el.} = D \times r_o \quad . \tag{3.2.3,64}$$

We have found here the unity of cosms of radiation and of resting mass and charge. They are oscillating **cosms** – non-stationary Black-White Holes - (worlds, spacetimes). Electric charges are derived of the oscillations of electric cosms. Gravitational charges (these are masses) are gravitational cosms in the same sense.

When two flat waves are superimposed under the conditions

$$R_1 \neq R_2 , \quad f_1 \neq f_2 , \ \phi \text{ is variable}, \ 0 < \Delta\phi < \pi ,$$

then for $R_1$ next to $R_2$ (wave amplitudes R acc. to (2.4,20)) a beat arises, which frequency $f_1$ is formed from the difference of the superimposed frequencies $f_1$ and $f_2$:

$$f_i = f_1 - f_2 \quad . \tag{3.2.3,64}$$

If the condition is limited with $f_1 \geq f_2$ and $f_2$ = const and also the amplitude $R_2$ = const, then the amplitude $R_1$ must decrease while an increase of frequency $f_1$. With (2.10,17) and (2.10,19), the equations follow:

$$1/\lambda_i = 1/\lambda_1 - 1/\lambda_2 \quad ,$$

$$1/R_i = 1/R_1 - 1/R_2 \quad , \qquad \text{or} \tag{3.2.3,65}$$

$$R_i = R_1 \times R_2 / (R_1 - R_2) \ . \qquad (\text{/Q 5/, page 109f}) \tag{3.2.3,66}$$

The resulting wave length $\lambda_1$ decreases within the interval to zero:

$$f_1 \rightarrow \infty; \ 0 < \lambda_i < \infty \ ; \ \lambda_1 \rightarrow 0 \ .$$

We compare eq. (3.2.3,64) to the converted energy term (2.4,36):

$$E_{w(n)}^2 = E_{A(n)}^2 - E_{Ao}^2 \ .$$

In relative rest, the Hamilton energy $E_{A(n)}^2$ equals the rest energy $E_{Ao}^2$ from which the wave energy $E_{w(n)}^2$ is zero. Two cosms resting relatively to each other have no relative wave energy. Obviously, the physical beat as seen above is just a non-relativistic phenomenon (the same we noticed at the classic Doppler's effect referred to the sound going up to the quadratic Doppler's effect increasing to light velocity). This relationship of beat is made by Hamilton-function (cf. (2.4,37)) in quadratic feature of matter. On reason of their relative movement state, two oscillating material observers identify themselves the material **quadratic beat** as the effect of wave phenomena of matter.

### 3.2.4. Einstein's Solution (Albert Einstein, 1917)

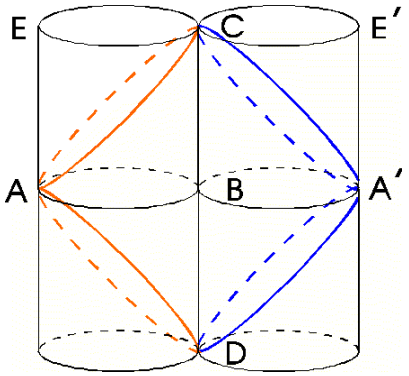
Einstein's solution confirms the stationary vacuum conceived in the beginning postulating that lambda term $\Lambda$ of antigravitation for stationarity, hardly observed until now! That term will be the symbol of **the negative gravitation of antimatter**. At the same time, it means the complete symmetry of fundamental laws referred to the parity of electric matter.

Metrics of Einstein's solution leads to a static and locked cosm. This is a stationary cosm, which is uniting the contrary mass charges of the electrition and of the gravitation and which their dynamics is bringing to zero.

At suppression of the coordinates $\phi_1$ and $\phi_2$, at a model of cylinder mantle and at the example of photon emission equally to fallon emission, we can exactly see that one point starting from an initial point describes a helix returning to the initial point at the mantle area.

The way is inside of the interval $T_E = 2\pi/c$. This closed line reflects two ellipses, which are standing to the fundamental circle area with an inclination of 45° or ¼π (cf. Goedel's solution) and which are touching themselves at the antipode point. That fundamental circle of the cylinder laying in antipode point is also valid to be a rectified double projection of the running point on the ellipse. If one leads the running point to the neighboring ellipses, the reversed rotation direction (cosm spin) of the second fundamental circle is adjusted. One can give an order to the fundamental circles at the cylinder with equal primary spin right and left orientated. So we get two parity orbits.

Illustration 3.2.4;1: Cylinder Model




According to the negative turn direction given to this by extracting the root, it is possible to conclude on two contrarily directed electric or gravitational dipole fields (wavequanta) of electric and also gravitational matter. So we describe all the vacuum, the electric, the gravitational and also the electromagnetic and the gravitomagnetic vacuum, in which the electromagnetic and gravitomagnetic waves are extending themselves:

a) Abolition or compensation of the graviton charges referred to the antigraviton charges. This means: primary charge against primary charge ($+e_o + -e_o$), electrograviton against electroantigraviton.

b) Abolition or compensation of the graviton mass referred to the antimass of antigravitons. This means: gravitational primary charge against primary charge ($g + \bar{g}$ or $m + \bar{m}$).

There the coupled corpuscular character compensates the elementary gravitation charges. Just this conception of “gravitation equals antigravitation", Einstein presupposed for his stationary cosm with his hypotheses.

For stationarity conception, the additional introduction of one parameter of negative gravitation was necessary. In stationary cosm, there are not only the contrary electrical charges but also the contrary gravitational charges as well as their rotating effect fields: **electromagnetism - gravitomagnetism**. (/Q 15/, page 239ff)

Today the objection is valid that Einstein’s cosmos of electric and gravitational matter could not be stationary, because it would disregard the thermodynamic laws. This conclusion, one referred to the apparent reality of the observed universe. So Einstein’s cosm seemed to be non-real.

With our contrary opinion on the one hand, we must see Einstein’s solution as a part of a non-stationary solution of completeness, where in this concrete case the contrasts were given to compensation – to congruence for a vacuum as medium of the non-stationarity. One could also say: gravitational movements are going to zero expressed by force and energy.

On the other hand, the stationarity can be assumed without working of thermodynamics as such a thing namely without electromagnetic interaction. Then a g-vacuum cosm and a q-vacuum cosm of contrary parity of their charges had to exist. There might not be any particles, which would make an exception relatively to this electrogravitational vacuum, so we had an undisturbed vacuum. And this is Einstein’s solution!

That conception of Einstein isn’t thought to its end until today, because one began the observation from visible experience. Each thermodynamics is caused on the electrition, better, it is caused on its electromagnetic field effects. If we can take out the electromagnetic interactions of our calculation, then the stationarity of gravitation is allowed. Inside of this stationarity, that stationarity of electromagnetism is possible. Why is this correct? A vacuum can exist without surplus of electrically elementary charges $\pm e_o$ as they are given at the electrogravitational particles from the first beginning. In General Relativity Theory, that vacuum is described essentially as zero-geodetic lines and field congruence. The description is always reduced on metrics of Kerr and Schwarzschild (idealizing: total compensation).

The real **cosm vacuum** exists in the compensation of the oscillator phenomenon to the outside by contrary oscillation. Currently, “Quantum Mechanics" believes to have found a vacuum definition with the compensation of wavequanta. But this “wavequantum vacuum" is only a relativum. In contrast and in connection to this, the absolutum exists objectively and really in the **cosm vacuum**. That new discovery of cosm vacuum does not negate the present fundamental knowledge of wavequantum compensations but their order by interpretation of the world’s philosophy.

Particles themselves cause the vacuum magnetizing or the field interactions. Without thinking of these particles, it is legitimate to conceive the stationary vacuum. With the existence of particles at all, its stationarity causing of total compensation is made relative. The electrogravitational vacuum gets its primary magnetizing by the presence of the ordinary particles appearing as polarizing. Therefore, moved particles carry an internally locked and an externally generally identifiable movement function referred to the stationary vacuum body:

A cosm, which is moved in stationary vacuum, is externally measured by eq. (2.4,11) at its wavequantum momentum $p_w$ of its external mass $m_o$. At the same time, it carries away the isolated mass that is packed inside of it. This internal mass $M_o$ carries the potency to shock on another cosm with the same velocity $v_{v(n)}$ (inside like outside) at shocks acc. to eq. (2.7,1). But then, at the inside, an incomparable extremely larger isolated wavequantum momentum $p_l$ will be realized:

$$p_w = m_o \times v_{v(n)} \qquad (3.2.4,1)$$

$$p_I = M_o \times v_{v(n)} \quad . \qquad (3.2.4,2)$$

If the external mass $m_{o(PK)}$ is negated via anticollapse, then the isolated mass $M_{o(PK)}$ has to take the external momentum $p_w$. But if this system is in convergence (cosm: $m_o$ is not able to be negated, but it can be changed), the isolated mass $M_o$ remains an isolated function. This problem can be found in section 4.6. in the features or coupling states $\alpha_1$, $\alpha_2$ and $\alpha_3$. It explains all the states, which were thought of being paradox by physics today. But it explains the thing only on base of general validity of stationary vacuum.

By anticollapse opening protocosms have to change the external momentum into the isolated momentum. The equations (3.4.2,1) and (3.2.4,2) will be used and set to equality of $p_w = p_I$:

$$m_{o(PK)} \times v_{w(PK)} = p_{w(PK)} = p_w \text{ (ejection of } M_{o(PK)}) = M_{o(PK)} \times v_{w(AK)}$$

$$\alpha_{2(PK)} = m_{o(PK)} / M_{o(PK)} = v_{w(AK)} / v_{w(PK)} \; ; \qquad (3.2.4,3)$$

AK - after anticollapse.

Although these anticollapsing (evaporating) protocosms just were running with divergence to light velocity in vacuum they are decelerated on almost zero velocity while their opening! There is no cause of galaxy escape, anymore.

### 3.2.5. Goedel's Solution (Goedel, 1949)

Currently, one tried vainly to interpret the three solution-equations meaningfully in which we choose the radius $R_o$:

$$\mu_{Go} = 1 / (G_E \times c^2 \times R_o^2) \; , \qquad (3.2.5,1)$$

$$\Lambda = -1 / R_o^2 \quad , \qquad (3.2.5,2)$$

$$\omega_{Go} = c / (R_o \times \sqrt{2}) \quad . \qquad (3.2.5,3)$$

(/Q 15/, page 262 (28,28), (28,30))

This radius $R_{Go} = R_o \times \sqrt{2}$ rotates obviously with its angular velocity $\omega_{Go}$ in the sense of a closed time line, therefore one rejects this model for unreal. When we set (3.2.3,7) and (3.2.3,19) equal over D, then we get the Friedman-density in comparison to the Goedel-density (3.2.5,1) as a less magnitude:

$$\mu_E = 3 / (4G_E \times c^2 \times R_o^2) \; . \qquad (3.2.5,4)$$

Here we don't have to interpret the Goedel-density, because a plausible explanation arises from the complete solution of General Relativity Theory for the radius $R_{go}$ with our Oscillator-Solution (Arcus). In this respect, the calculation of some Goedel-density is unnecessary for mistaken assumption of existence of any "Goedel-cosm". Such a cosm does not exist explicitly. So the Goedel-solution is one part of the complex solution of oscillator.

The Goedel-radius equals the amount of the large half an axis of that ellipse from Einstein's solution, which is declined by 45° on the cosm circle with the radius $\frac{1}{2}R_o$. Better said, the projection of the ellipse on the area that is declined by 45° gives the circle of the radius $\frac{1}{2}R_o$ (see illustration 2.9;2, page 367).

In the side-view of the areas of that circle and that ellipse, the image of two rays arises, of the $R_o$-ray and of the $R_{Go}$-ray, which are deflected with 45° in their origin. If one would bind the ends of both rays, then a right-angled and isosceles triangle would be formed.

Now it is explained why we found $\mathbf{R_{Go} = R_o \times \sqrt{2}}$.

The closed waytime line of cosmic installation corresponding to Goedel means:

**After the death of universe that rebirth follows with exactly the same installations referring the objective events! The waytime never runs backward!**

### 3.2.6. Stationarity and Non-Stationarity

What impression has an observer who is in the spherical space of his receptacle cosm that limit horizon $2R_o$ he cannot reach or exceed because of the relativistic couplings of all the elementary cosms of their receptacle cosm?

He is falling free and he has no contact to the outside of $r > 2R_o$, which could help him to notice the objectively existing reference system of his spherically symmetric place in the cosm sphere. This means:

> For him only an internal relativity exists apparently referred to the elementary cosms of his receptacle cosm. He describes them with the help of the General Relativity Theory as external effects of elementary mass and with the help of Special Relativity Theory as effects of relative velocity between them.

At the inside of a receptacle cosm, the sentences are valid:

> 1st The relativity only is valid for the mathematically constructible relationships of the minimum of two observers inside of one common world – inside of one common receptacle cosm. For an observer existing externally of that receptacle cosm, this special isolated relativity formula has no importance in community with any observer being at the inside of that receptacle cosm. Each observer of his world has his own completely curved coordinate system, if we have to judge the isolated physical processes.
>
> 2nd Inside of a receptacle cosm the light ways are extremely curved. Theoretical Euclideanity doesn't even apply in the range of short distances, not to mention larger distances of the observers.

Since the observer has no information about the Euclidean relations of his never stopping movements inside of his cosm, he cannot use spherical coordinates. He cannot find the reference plane for this. The observer does not find an end. He consequently believes in the infinity of his space, although it is objectively only a pseudo-infiniteness. If he should have noticed as we did it now that he comes from a central limit R, t = 0, he could try to use polar coordinates and to find his place R, t as function of the total amplitude $R_o$, $t_o$ of his receptacle cosm. In addition, he lacks precise data for determining the origin, such as the magnitudes $R_o$, $t_o$ and thus the Euclidean reference plane. Although he could calculate being on a spherical surface $\Sigma$ inside of the receptacle cosm of $\Sigma_o$, he either cannot indicate a special point on this surface neither a special direction. This observer seems to be in an "infinitely unresorbed state".

For this apparently hopeless situation, Einstein has given the compensation of the absolutely working force to the free falling observer. This observer only notices relative forces and judges the sub-spaces as relative outside at elementary cosms, which are quasi-Euclidean spherical bodies. Just this external local dynamics of these sub-spaces (microcosms), he can judge in their structural coupling of cosms. Nevertheless of relativity, in the isolated inside of the receptacle cosm, a general relativity of all elementary cosms inside of their mother receptacle cosm is also valid namely inside of the universe. This is caused in the general existence of the stationary vacuum. Consequently, the functions of isolated internal spaces of particles are also changing moved in universe dependent on velocity in general vacuum without the observer living inside of a particle would know how fast his particle is moved in universe, then outsides of the observation. Referred to the vacuum nothing is isolated!

This cohesion one had to know, if one examines the solutions of General Relativity Theory after their common truth at that matter. In the sense of determination of all those solutions, we see clearly now:

I. The cosm of the observer (receptacle space) is fundamentally **stationary pre-conceived** although he contains a **non-stationary cosm system**. Each solution of General Relativity Theory must reflect this premise to be the external reference calculation, what means:

**Inside of stationary vacuum, non-stationary cosms are living in their hierarchy.**

II. Only this locally fixed and concrete gravitation field indicated by this observer in the form of his environment masses (elementary cosm structures) can reflect spacetime-dependent limits like these:

- cosms, cosm seeds, protocosms,
- cosm reactions (changes between cosm seeds and/or protocosms).

That means that the solutions of elementary cosms – corresponding to the expectation of Einstein – will actually reflect the real “singularities of the field" (the field limits!).

### 3.2.7. Momentum and Angular Momentum

From the interpretation of the balance equations of the General Relativity Theory for the momentum and the angular momentum follows “that momentum and angular momentum of a source (of the area, which is bordered of $\Sigma$) are changing by transfer of **gravitational radiation** over the limit area $\Sigma$. Its special advantage is that all the magnitudes only need to be known on $\Sigma$, this means only in the area of the far-field." (/Q 15/, page 138)

We think that the limit area $\Sigma_o$ is a spherical surface of the amplitudical oscillation of the non-stationary Black-White Hole in its solutions as cosm and as protocosm. Its radial horizon is described by the amplitude $R_o$. Dependent on the special kind of cosm, the conservation balance exists just below the limit area $\Sigma_o$! Exceeding this limit, the radiation energy exchange of $\Delta E_o$ would change the internal momentum amounts from the view of the internal observer. This magnitudes would also change, if the area $\Sigma_o$ would vary along the time, if then a cosm amplitude would change itself by **emission** of energy. Analogously, this principle is valid for the conservation law of energy. We are concluding:

1st Each cosm changes its momentum and angular momentum magnitudes only then, if it gets electrogravitational energy $\Delta E_o$ and if this energy is able to give free again in pairs. If this balance is equal, the cosm keeps stable. Such a cosm therefore only changes temporarily in the course of events, which force it inside of its isolated states to fight with that energy, which came in from the outside.

2nd Different amplitudes of cosms cause different constant or only temporarily constant limit areas of stationarity, limit areas of the vacuum sphere $\Sigma = 4\Sigma_o$. Therefore, each cosm has a special and intrinsic isolated momentum complex.

3rd Protocosms open their horizon and radiate their radiation cosms, which existence is made for intrinsic time $\tau_b$ of the installed structures.

4th Each cosm changes its energy or mass externally and in mirror also internally only then, if it gets electrogravitational radiation energy $\Delta E_o$ from the outside and if it has to give this energy free to the outside again. During this event, this cosm remains identical (after isolated conservation balance). For example, the proton keeps just this proton while it is existing in the state being an unstable particle, because it will be return as proton during the ejection of energy in pairs or masses of pairs (cf. (2.4,16)).

5th Another cosm of a different radius $R_o$ causes another constant area of stationarity $\Sigma$. Therefore, each special cosm hat as special intrinsic and isolated resting energy $E_o$ or resting mass $M_o$, which reflects a special external rest energy $E_{Ao}$ or rest mass constancy $m_{Ao}$ (see eq. (2.7,1)). The internal rest energy changes by this eq. $E_{o(stable)} \pm \Delta E_o = E'_{o(unstable)}$.

It is essential that the momentum exchange is only working with a common balance, if two limit areas $\Sigma$ fill a common space. This case is only then true, if two cosms dip their vacuum spheres $\Sigma$ into each other (see section 4.6.).

### 3.2.8. Energy Balance

"In a general gravitation field there is a conservation law $T^{mn},n = 0$ for energy and momentum of that matter producing that field in the environment of each point with introduction of the localized inertial system, but it is only valid as long as one can neglect the curvature of space, this means the real actions of gravitation. In this sense and with this qualified sense, the gravitation theory confirms the conservation laws of specially relativistic physics. For larger spatial areas with real including of gravitational field, there is no energy balance equation. [...] There, some covariant magnitude energy does not exist, which one could give the property of conservation or non-conservation at all. [...]" If the gravitation field has symmetries "there are always conservation laws." (/Q 15/, page 140f)

From this facts, we conclude that positive and negative Black-White Holes do not correspond to any general law of conservation at their inside: masses will be piled up and piled down and so do their energies (in "[...] larger spatial areas [...]"). Only for each time-**dot** of the oscillation, one conservation of positive or negative energy exists ("[...] of each point [...]". This means with integrated features that an oscillation period reflects the conservation of the energy of a stable cosm (in "[...] symmetries [...]"). But the universe is completely symmetric be distribution of ordinary matter and anti-matter.

For a common, arbitrary and external quantity of cosms or anticosms, some additional conservation balance of the isolated states does not exist; just obviously because the spacetimes are completely separated by total curvature and because different relationships are adjusted at the outside referred to the inside (for that observer after the general relativity principle).

In short features: we cannot meaningfully add the isolated energy $E_o$ of both separated particles $E_{o1}$ and $E_{o2}$ with each other. Just the addition of the external (the outer) energies $E_{Ao}$ of these particles $E_{Ao1}$ and $E_{Ao2}$ and of all the other particles would have a meaning in which the completeness of all particles is forming the isolated energy $E_{o(GK)}$ of its own superordinated receptacle cosm for each time-dot. The addition of the isolated energy of any receptacle cosms, no matter what hierarchy area, has only then a meaning, if the particles are acting with each other by connecting their isolated insides for this time, exchanging and even changing themselves!

We found a law of this fact, which distinguishes the external energy $E_{Ao}$ of the isolated energy $E_o$ of the locked spacetime system including the vacuum (see equation (2.7,1)).

### 3.2.9. Gravitational Waves

Flat gravitation waves are transversal. Influenced by them, a test particle circle would be running over one single elongation in the interval of $2\pi$. This behavior corresponds to the Bose statistics as electromagnetic waves do so. Gravitomagnetic waves also had to be transmitted by that boson character of radiation quanta.

The energy momentum complex of the flat wave can be seen analogously to the electromagnetic waves: the complete energy is flowing with vacuum light velocity (taken together with vacuum wave velocity). We searched for gravitation waves and we found them then in their analogy to Maxwell's theory of electromagnetism (of electrition) in principle. (/Q 15/, page 143f)

Such a success we got conceiving the united electrogravitation. Gravitomagnetic waves can be expected then making the same original phenomena like electromagnetic waves:

1st Field change:
A rotating electrogravitational charge (mass) is forming a dipole (electromagnet or/and a gravitomagnet). Additionally rotating or vibrating around its rotation area, that magnet causes the field polarizing change in vacuum with a determined frequency (continued energy transmission of magnetic short-distance interactions at the wave).

2nd Field swelling:
An electrogravitational charge (mass) is successively rotating. During this procedure, it produces the above called electrogravitational magnet. That unique installation or/and change of position are working at the other wavequanta (the magnets) or at the other charges (or masses).

At a supernova a swelling effect appears, which should lead to a single gravitomagnetic wavequantum. It would be able to transmit a quantized angular momentum to the masses. We know the shielding effect of the Faraday cage of electromagnetism. If one shields now the detectors of gravitation waves within the masses of the Earth, then one hardly can indicate some waves, otherwise the complete Earth is vibrating.

We can prove those waves with well-known experiments. It is possible to conclude mathematically of the effects of all the gravitation dipoles of planets to the orbit of other objects moving in that gravitomagnetic field. If their orbits are elliptical then they are forced by the dipole force to such a curved orbit, which is not alone explainable with the stationary gravitation and its relativistic effects but better with the **gravitational Lorentz force** analogously to the electrical Lorentz force:

> Some moved gravitation charge (mass or antimass) will be lead to a curved orbit influenced by the gravitomagnetic field.

The moon would be making the strongest effects here.

### 3.2.10. Operating Conditions

It is called: A Schwarzschild-metric is attachable within a Friedman-cosm. The changes of the external Friedman-cosm with receptacle feature happened within its intrinsic time have no influence to the events below the Schwarzschild-sphere $\Sigma$ with the horizon $r_o$. (cf. /Q 15/, page 253)

We interpret this result to be a **systematic knowledge** – a hierarchy of Black-White Holes explaining the conception of the world itself:

> 1st A **non-stationary Black-White Hole** like a Friedman-cosm includes a **quantity of non-stationary Black-White Holes** as well as their vacuoles, which are forming these cosm compensates **hole and anti-hole**. The real quantity of non-stationary Black-White Holes represents the elementary cosms, which are forming the isolated oscillation mass $M_o$ and its wave mass $M_w$ (radiation cosm) as condition for the existence of its receptacle cosm.
>
> 2nd Inside a radiation cosm, a Black-White Hole is located. Or said better: a protocosm ejects a radiation cosm. Both are walking on their own ways with their own existence. With the return of the radiation cosm, the existence of the structures has found its end by the reinstallation of the protocosm.

Schwarzschild's solution therefore is a result that confirms the oscillation of a mass oscillator inside of the Black-White Hole. This now also applies to pair formation and pair annihilation.

## 4. Corresponding Solutions (Arcus, 1972 until 1998)

### 4.1. Protocosms

In the system of wavequantum conditions, the quantizing of isolated mass $M_o$ is necessary formation of material structures below the elongation R of the receptacle cosm, essentially different referred to the outside. The sum $\Sigma M$ of all the ejected protocosm mass $M_{(PKn)}$ as elementary cosms forms the isolated mass $M_o$ of the receptacle cosm to its amplitude $R_o$. All the momentum masses $m_{w(PK,\,u.a.)}$ are coupled with it in the shape of radiation cosms:

$$M_o = \Sigma\, M_{(PKn)}\ ,\ \phi = 0,\ \pi,\ 2\pi\ . \qquad (4.1,1)$$

This is a selective amount. Really, the installation and the destruction of the mass will be completed by half the oscillation length $½\lambda_{o(GK)}$ (see section 2.19.). The maximum mass diverges periodically to zero. We call the divergently closed cosms **protocosms**. They represent the pre-states of cosms in the shape of the maker-cosms of intrinsic cosms inside of the receptacle cosm (the cosmos as the receptacle cosm). Their short sign is:

**PK** - with positive mass surplus (coinomass as ordinary mass),
$\overline{\mathbf{PK}}$ - with negative mass surplus (logical signed as antimass or antimatter).

The first-rate protocosms of electrogravitational matter carry the **single electric elementary charge** $\pm e_o$ as if they were related with the electrically charged leptons. Their sub-ranks are multiply charged and differently moved succeeding the asymmetry structure. Antiprotocosms for example form the isolated areas of the antiproton, which is an electrogravitational anticosm. Several charge differences in the isolated state make also variety of charges and of electromagnetic momenta.

A protocosm is the trial to copy the stable electrogravitational particle via collapse.

Because of the acting divergence this trial is impossible. The apparent horizon $r_o$ of the infinitely strong force $F_o$' will not be reached totally. Instead of this, there is the divergence horizon $r_d$ of finitely strong force $F_d < F_o$'. It can be exceeded. The protocosms of universe area consist of cosm seeds and anticosm seeds, which are locked in subprotocosms of that hierarchy, which has a substructured substructure down to the unstable particles of the eternally stable cosms (p, e, $\nu_e$).

The life time $t_{L(PK)}$ of a protocosm would have half of its period time $\tau_{o(PK)}$ at least, if there wouldn't be the opening phase that has more than $1.125\tau_{o(PK)}$ until the structures appear above the collapse radius $r_k$:

$$t_{L(PK)} = ½\tau_{o(PK)}\ . \qquad (4.1,1a)$$

After a life period $½\tau_{o(PK)}$ beginning with their restoration in collapse ending in their anticollapse, the subprotocosms exceed the protocosmic amplitude $R_{o(PK)}$ according to eq. (2.8,7a). In one moment, the external mass is negated and changed while the internal mass is just becoming external mass now, and this body will be stopped by momentum conservation law.

The internal radiation closes most of the protocosms in the upper cosm sentences so that they have a new collapse secondarily. If the radiation would come from the outside, the new subs would fall to the inside and would make an new life of a new born second-rate protocosm. But here, the radiation pressure comes from the inside. It even supports deeper cosm sentences and ejects a separated top layer of high-energetic subprotocosms out into the installation of a rotation area flying in a common area far away from their mother protocosm. The other subs ejected by radiation will be driven apart into all directions of their pre-quantizing of their orbits. While this process, the density of mass of the anticollapsing system is falling down below the limit of Friedman-density $\mu_F$. The anticollapse will be effective externally while the horizon skin $r_k$ is touching the inside. That complete time between collapse and anticollapse is valid as half a protocosmic period $½\tau_{o(PK)}$.

The anticollapse starts with $\tau_i = ½\tau_{o(PK)}$. Isolated particles of the mass m and antiparticles of the anti-mass $\bar{m}$ come out from the opened protocosm made of substructures, and they annihilate up to the above called surplus of coinomass M (cf. eq. (4.1,2)). The radiation comes into the opened state of the vacuum receptacle cosm being an intrinsic cosm system and exchanging their wave energies there at the coinomatter. Because all the structures are exchanging energies in the isolated system, the radiations must turn back with their own radiation cosm. Then the collapses are working. After this, the period time is starting with a structuring process in the first quarter of the period time $¼ \times 1{,}125 \times \tau_{o(PK)}$. It is effective below the amplitude $R_{o(PK)}$ , and it gives support to quantizing. After the passage of the protocosmic center close to R = 0, the newly formed subprotocosms will be dispersed.

Below the amplitude of the protocosms $R_{o(PK)}$, the subs are programmed according to the quantizing laws. There are the scheduled mass parts $M_{o(PK)}$, their angular momenta, their electric charges and their task to be the reborn life. A protocosm includes the electrogravitational cosms and anticosms where the cosms are more than the part of the anticosms insignificantly. But this super-small difference of the packed subparticle masses m and the sub-antiparticle masses $\bar{m}$ equals the protocosmic internal mass $M_{o(PK)}$:

$$M_{o(PK)} \approx \sum m_{(subcosms)} - \sum \bar{m}_{(sub\text{-}anticosms)}. \qquad (4.1,2)$$

In the antiprotocosms there are more parts of the anticosms than cosms:

$$M_{o(\cancel{PK})} \approx \sum \bar{m}_{(sub\text{-}anticosms)} - \sum m_{(subcosms)}. \qquad (4.1,3)$$

Quantized annihilation of the cosm seeds ejected from decaying (evaporating) protocosms of unequally large quantities of cosms and anticosms produces their vacuum cosms and their photons and fallons. That expected energy radiation runs quantized. This means that it comes from the concentrations of a rotation system hierarchy, from lightning ray bursts.

Vacuum is the reference medium of the remaining electrogravitational cosms after the annihilation. The vacuoles will be foamed up from the center of their cosm starting from $r \rightarrow 0$, acc. to (3.2.3,27) in steps of elongation dR. Each installation of a protocosm gradually reaches the amplitude $R_o$ of the receptacle cosm. The radius of the spherical wave is a little bit larger than the amplitude $R_o$, which is valid for a waytime in its maximum. Spherical symmetry is not primary. Corresponding to this knowledge, the orbital theory in the shape of statistics of space cannot keep real. The space is formed by the completeness of all the line waves of protocosmic waytimes. In this respect, the area is primary, but statistical clouds are not primordial.

Protocosms evaporate only inside of their receptacle cosm contributing to that stable construction, if their intrinsic period time $\tau_{o(PK)}' = \tau_{o(PK)} \times f_{SRT}$ will be underrun while dilation in receptacle cosm measured at that period time $\tau_{o(GK)}$ (cf. eq. (1.1,6) and section 2.8.). But if reversed relationships are valid

$$\tau_{o(PK)}' \geq \tau_{o(GK)} \qquad (4.1,4)$$

then the protocosms will annihilate later. In the state of equality, they behave as quasi-stable particles.

The electromagnetic central points of the lightest protocosms from n = 1 have to reach the amplitude $R_{o(GK)}$ of their receptacle cosm in agreement with their gravitational center. Then they have to exceed this value because of the repulsion potential of the deeper laying equally charged protocosms. This is valid for the symmetry systems integer massblock MB and partial massblock $MB_x$. The asymmetries MB-1 and MB+1 exceed the amplitude $R_{o(GK)}$ more with their asymmetry part +1, because there is no attractive pole moving on the other side.

This part of protocosmic internal mass $M_{o(PK)}$ , which is to be ejected and to collected, never swings around the central point of the cosm r = 0. But those protocosmic external mass part $m_{o(PK)}$ (cf. (2.7,1)),

which is dilated on $m_{B(PK)} = m_{o(PK)}/f_{SRT}$ relativistically and smaller flies around the center (anticollapse velocity $v_i$ as initial protocosm velocity from collapse until the anticollapse).

Therefore, all the first-rate protocosms of its receptacle cosm could run through their own zero-passage when the elongation of the oscillation of the receptacle cosm is R = 0. In this zero-passage of the superordinated cosm forming the cosm hierarchy, the heaviest elementary masses of the electrogravitational matter are there in their packing at the inside of protocosms, which are forming externally the lightest masses being gravitational charges of matter (cf. eq. (2.10,23)). The protocosms are moving **away from each other** in their extension different of zero. In the center of the receptacle cosm the density of the external protocosm masses $m_{o(PK)}$ is extremely small. There the density of electric charges is important for an e. m. Black Hole. In this meaning the movement of protocosms leads to the oscillation phenomenon of the building up and down of the mass state as the sum of $M_{o(PK)}$ in the isolated receptacle cosm.

We imagine that the radiation energy would be half while it built new protocosms. The other half of the radiation remains so that its own mass as momentum mass $M_{ow}$ would hold locked this cosm as if it was a pure radiation cosm now, which vibrates with the pulse of the appearing and the disappearing of $M_o$ from their protocosms. This would also be an explanation of the **double mass** in the equation of the so-called "Black Hole" $r_o = \mathbf{2M_o}$ G/c² (cf. TBA IV of the year 2021).

So the first-rate protocosms lift their isolated mass $M_{o(PK)}$ up to the initial height R (the elongation of the receptacle cosm) while they are just diverging to the locked state ejecting a determined part of their isolated mass. For example of high-energetic protocosms, we assume that first the complete internal mass would work, but only $^9/_{10}$ of it would come out and stay there. Billions of photons were free from the pushes of the subprotocosms. The remaining part of $^1/_{10}$ of that mass has a new collapse and forms a further, a second-rate protocosm, which carries now its smaller inside mass over its larger outside mass and with a smaller external momentum complex. In the end, all the internal mass comes to the outside in steps of transformations when the rates of the matter transformation contribute to a certain scattering of the systems.

Substructure of protocosms makes strong waytime-like differentiation of transformation processes. Therefore, the upper subprotocosms in its receptacle cosm reach the own anticollapse below n = 1 at an essentially later time while it is just working in its phase of anticollapse. Then they are ejected far into the space. Deleted.

The orbital 1s ejected either one or three first sub-PK. After this event, from the orbital 2s, four SPK, and in the orbital 3s, four SPK are following. Actually, after 2s should follow three times of the orbital 2p. These orbitals lay in the angle of 120° externally the plane of the funnel slot, what is the flat opening plane of the s-orbitals. This is the reason why all the evaporating SPK escape in the ecliptic of all the s-orbitals from almost one plane. Why do they now take certain inclinations towards their orbital plane?

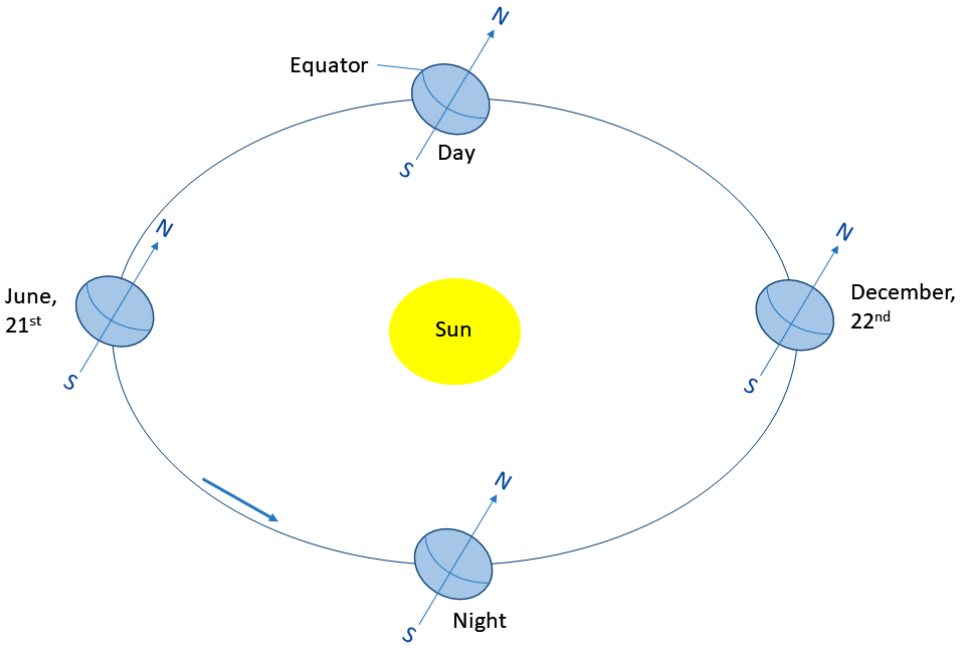
Well, in each quadrupole we find two left-oriented and tow right-oriented tracks together with the bound rotations of the SPK. Each one pair of these SPK differs once again slightly in terms of mass, because it is split up into MB+1 and MB-1.

The external mass-dipole of the star (its gravitational "bar magnet" on the axis of rotation) as well as the complete superordinate curvature of space give the sense of rotation to the SPK. When flying in on a track (it should be a track that is far away for enough time formatting the central body), each SPK must rotate along the gravitomagnetic sense of its star. If a mass of any protoplanet rotates in reverse, it will be broken until it stops rotating. But without rotation, it almost hasn't some gravitomagnet anymore, which could orientate to the central star. Consequently, this protoplanet remains in strange inclinations of its track and self-rotations. The second protoplanet, however, rotates from the beginning along the direction of rotation of the central star. According to this constellation, its top pole attracts the top pole of the star. The same do the poles below (gravitation is based on a similar attraction). If a pole gained the upper hand, the inclination would reach 90°. Forces then would go to zero, because they were perpendicular to one another.

This process is similar to the precession motion of an electromagnet in a uniform electromagnetic field. The higher its speed of rotation, the less its inclination to the direction of the field. Actually, we

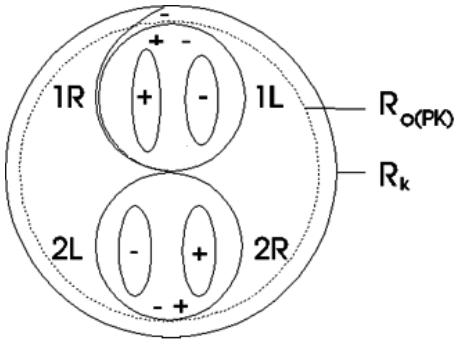
now have a gravitomagnetic field. It isn't uniformly directed straight ahead, but rotates around its own center inside the star. If we run along the field, we observe a bound precession that leads to the special angle of inclination, e. g. of the Earth:

Illustration 4.1;1: Bound Rotation of the Inclination of the Earth




The movement energy $E_{w(PK)}$ (angular momentum complex) carried of the external mass $m_{o(PK)}$ and its velocity $v_{(PK)}$ in vacuum must transfer itself from isolated mass $M_{o(PK)}$ up to this opened mass during the opening - that's a rapid braking action: $\alpha_1$ turns to $\alpha_3$. That protocosm decelerates its momentum in the relationship of eq. (2.10,23) in vacuum, and it reaches a vacuum velocity of almost zero to the vacuum and just a zero-like intrinsic rotation (see eq. (3.2.4,3)). Now the isolated state is coming out while anticollapse is running. Isolated movements like rotations and orbits come into the universe and stop there in the moment of their opening: the movement state of all the subs is frozen! From this position $R_i$ (elongation position), the system made of subsystems only can move with zero-like non-relativistic velocity referred to vacuum. Now it is starting to fall to the objectively existing cosm center almost uniformly accelerated movement, determined of the gravitation fields in the proximity (falling close to the center) and of the small angular momentum, which came from the own central body.

Illustration 4.1;2: Running out of the Asymmetry MB+1 Referred to the Internal Symmetry




As we know, this way systems are like galaxies and solar systems. Actually, looking at the order of magnitude of time inside some cosms, like in universe or in proton, the assumptions of accidental concentrations cannot be comprehended. Time is not enough to increase the density fundamentally in the course of the free fall again. For example, the Galaxy is falling to the Virgo cluster with a small velocity, which would cause the collision after hundred billions of years. But after 17.6 billion years the

complete universe has found its end of living! The compression while such large times is illusionary. It's a different thing with the orders of magnitudes of smaller systems like the planet system or its satellite systems. When there are already central condensations, which make dark central bodies then it is not a problem to observe the attraction of the gases laying around the centers within short times.

The "Andromeda nebulum" is in our proximity. It approaches our Sun with approximately 180 km/s – consequently, there is a local blue shift as we expect it above for all the galaxies. But the general escape movement of galaxies does not exist! (/Q 3/, page 14)

According to this law, from the anticollapse point $P_{AK}$ to the collapse point $P_K$, each body is falling very slow and dependent on its curved orbit. After its objective existence time $\tau_b$ walking the existence way $s_b$, there it will be reorganized to a new protocosm by the falling and returning radiation (cf. (4.3,2)). This means that the radiation bubble expands at first, then it curves, turns around and contracts back. While this event, the born system has the time of its own life - a time between fire birth and fire death. This small living bow,0 we call **idleness bow** or **idleness geodetic line** $s_b$ (cf. (4.3,1)). You also can tell it “strolling bow”. On it, the real formations are stored extending like a plant by collapse and anti-collapse of second-rate and continuing sub-rate protocosms. During the installation of structures along the idleness geodetic line, the waytime $\lambda$, $\tau$ ($R_\phi$, $t_\phi$) of the receptacle cosm oscillation is running on. Reaching the retrograde state of elongation of the receptacle cosm, the radiation bubbles are coming back. Then the specific idleness bows are finished.

One assumes until now that the world mass would fall together completely, if it would do so at all. But the reduction of the space, which is determined by the internal cosm mass M just swelling down over steps dM, is not measurable at the idleness velocity $v_b$ of the free fall (cf. (4.3,1))! The falling movements of idleness don’t play the smallest role referred to the real contraction of the oscillating spacetime! One could imagine this only at single galaxies, because protocosms are coupled with wavequanta of their rotation movement. So they form a rotation order, which wrecks every illusion the free fall could change anything of the universe. The substructures are ejected via collapse and anti-collapse that there are formed two until six points of installation of arms of sub-rate protocosms around the central body at least. Because the points are exported onto the highest orbits, they run shorter ways for lack of energy before the anticollapse happens, they are drawn with a spiral structure. If the central body rotates slowly or if it doesn’t at all and if at this time its own subprotocosms are subordinated in a coarse quantizing while setting processes of its points in anticollapse of subprotocosms, the spiral arms appear to be almost straight lines. The finer the quantizing and the faster the central body rotates, the more elliptic bodies are made, which arms are closed to it so strong that they aren’t visible or that they merge completely in it. This way, we find the types of beam galaxies, spiral galaxies and elliptic systems. Irregular systems could be arisen from openings, which would lay close to each other coming from both equal subprotocosms (for example: 1L on 1R).

> Idleness by the world has to be understood to be the life time of material structure after its birth from a protocosm. It is finished by the death in protocosm and after this event, it is reborn from that protocosm.

The protocosm flew an installation bow $s_i$ from the collapse to the anticollapse. While anticollapse $R_i = s_i/2\pi$, the galaxy was born and installed from a protocosm. The following idleness bow $s_b$ approaches to the idleness radius $R_b$ because of its small movement referred to the anticollapse radius or the installation radius $R_i$. After passage of the idleness bow, the galaxy disappears again into a protocosm. The apparent average radius $R_T$ - the top radius - of the illusory perimeter $s_T$ of the illusory circle has the amount of the following:

$$R_T = R_i - R_b \quad \text{or} \qquad s_T = s_i - s_b \tag{4.1,5}$$

Both points between birth and death of the galaxy or some cosmic object could be calculated with the well-known algebra $s_b = P_{AK} - P_K = [(x_2 - x_1)^2 + (y_2 - y_1)^2]$.

But we haven't some reference measurement of the shift. The present opinion of a kind of “expansion" and “contraction" is nothing else than the mirror of the illusion after which one thinks the quantized piling up and piling down would run over steps $dR_b$! But the bill deceives! The free fall of the mass

relieved from protocosms does not lead directly to on single mash of hot mass in the meaning of the "Big Bang", but to local and intrinsic restorations of those protocosms!

Unpacked mass of protocosms goes along its small waytime of its world in the shape of idleness, then to lose the life during a packing process carried to its rebirth in package!

The isolated mass $M_o$ of the cosm is building up itself over steps of dM from the radius of R = 0, each time in every step keeping the necessary elongation density μ. While this process, the gravitation horizon is moving with warp speed to its maximum $r_o$. With (2.10,2), (2.9,11), (3.2.3,50), (3.2.3,57) and (3.2.3,58) we get a description of the density (2.9,21), which is only valid for the free work of the sum of isolated mass of protocosms $M'_{o(PK)}$ that has really come free:

$$a = - G_v \times M /R^2 \ ;$$

$$a_o \times \cos\phi = - G_v \times M_o \times \cos^2\phi /R_o^2 \times \cos^2\phi \ , \qquad (4.1,6)$$

$$M = M_o \times \cos^2\phi \ , \qquad (4.1,7)$$

$$E = E_o \times \cos^2\phi \ , \qquad (4.1,8)$$

$$\mu = \mu_o /\cos\phi \ ; \qquad \cos\phi \neq 0 \ ; \qquad (4.1,9)$$

guaranteed that all terms of Schwarzschild's solution are ≠ 0.

$$\mu = M /V = 3M /(4\pi \times R^3) = 3M_o /(4\pi \times R_o^3 \times \cos\phi). \qquad (4.1,10)$$

In that state where all the inside masses of the protocosms are locked at the inside after (2.7,1b) on $m_{o(PK)}$, the density equation system loses its validity with the receptacle cosm mass $M_o$. The function is not steady in the proximity of $\cos\phi \rightarrow 0$. That density, which has increased to this proximity of the central open protocosm masses $M_{o(PK)}$ changes then into the special density made from the sum of all the external masses $m_{o(PK)}$ in relationship to volume running through while one moment after packing of the last four protocosms of the main level n = x. Also in this state the necessary density of the receptacle cosm must be guaranteed, virtually the finite density:

$$\mu_E = \Sigma \, m_{A(PK)} /V_E \ . \qquad (4.1,11)$$

We assume that here the single electric charges of the first-rate protocosms are able to form an electric cosm: all the charges make an electric density of an electromagnetic caused “Black Hole” - another type of Black Hole.

The upper protocosms inside of the cosm – protocosms almost close to the amplitude of the cosm - don’t happen a complete opening. They catch a part of the radiation of the openings of subordinated protocosms just after they have given the equivalent part. The balance is equal - that particle is stable. If the equalizing process should be disturbed, then the included energy can be larger and can accelerate the protocosms (unstable particles as subs in anticollapsing protocosms). In this respect, above the isolated mass elongation, the **umbrella of protocosms** is floating made by the first-rate and lightest and largest hyperprotocosms. At the amplitude of their receptacle cosm, they are maximally stretched.

The behavior of subprotocosms is also working in protocosm analogously, but here it is referred on the amplitude $R_{o(PK)}$ and the density $\mu_{o(PK)}$ (cf. eq. (4.2,2)). While anticollapse of protocosm - while self-annihilation of the subprotocosms - radiation and vacuole and the mass $M_{o(PK)}$ are coming to the outside forming the start of a new life there (strolling in idleness).

When a particle pair is annihilated, its inner protocosms have to be compensated. The annihilation of PK/$\overline{\text{PK}}$ makes arise a **PK-magon pair,** because it annihilates the mass $M_{o(PK)}$ against the antimass $\bar{M}_{o(\overline{PK})}$ (see section 2.14).

**A protocosm pair only can be built from a PK-magon pair, if before in its receptacle cosm has also happened a determined annihilation of protocosm pairs and there are such PK-magons as mothers of pair formation.**

This is the essential precondition of the understanding of the “strong", the “weak" and the “hyperweak" forces. Inside of unstable particles, the increase of energy by protocosm pairs must be programmatically given, which transfer the energy via annihilation to the outside and which are forming there real particle pairs only existing there. During this process, they are decaying themselves to the stable final limbs in which aren’t protocosm pairs anymore. Instead of them, there are PK-magon pairs now in form of radiation cosms.

Our theory of the closed and locked universe does not give any solution for such universes, which would annihilate with each other. If there were PK-magons of universes, one could create giant cosm areas of matter and antimatter by low energy. A continuous beam of pairs of universes would run into nowhere. Surely, this is impossible. Obviously, only our universe exists in supersymmetry of matter and antimatter bodies!

But inside of the stable particles of universe, you can find PK-magon pairs. They come from the isolated annihilation of protocosm pairs while stable particles were formed out of the extremely energetic unstable particles (cosm seeds) of different but unmistakable identity, step by step. Vice versa, unstable particles will be divergently destabilized. Each energy level, which should be found at shock experiments, hits on a protocosm pair energy or on the reflection of the internal dilation energy at those protocosms.

Sub-rate protocosm get differently strong momenta during their process of formation. The further event is dependent on the intrinsic mass and its charge number. If the mass is too small like the charge number also and the momentum is too large, then they are moving with almost light velocity and with small tendency of interaction. We call them a primary sorting. If there is a relatively big external mass, because small internal mass was packed there with low energy push, and if there are multiple charges, a quite high momentum but smaller then at primary sorting cannot have such a high velocity. The dilation is smaller. We call it tertiary sorting. All the kinds of it laying between both, we call them secondary sorting.

If a protocosm of primary sorting comes into the life during a supernova, then it will be able to fly afterwards the expanding shell without some obstruction. In this hot expansion layer, it will be interacting itself. During this event, the protocosm will be heated and destabilized. Its mass will increase, its dilation will relatively decrease. And so it will be soon arrive its anticollapse. In this protocosm, its subs are more dilated why they are more accelerated at anticollapse of the protocosm center, and they are ejected only by internal radiation. Such a kind of protocosms can already anticollapse inside of the supernova shell. But it seems to be more probable that they are exceeding this shell and opening out of it. Later they will be reached and closed of the approaching shell. Consequently, at the theoretical base of transformation of stars doesn’t change much but only the question after the distances of protoplanets to their central proto-body. Referred to this hypotheses, in the last time only Jupiter class planets of central stars have been proved in a very short distance of their central stars. We have to wait for better observation technologies.

The secondary sorting will be anticollapsing below the shell and even accelerate the shell. Finally the tertiary sorting will arise, which remains in the core area. Its particularly high external mass and charge is orientated at the symmetry of the environment mass. According to our inertia theory, this environment mass forces now for inertia. The new pulsar will be kept in the center. Its ways are of small distances while running its phase of finishing.

Similar phenomena are visible overall at the stars, in their shells and also in the galaxy cores. Because of the density of the nucleus area and of its multiple charge, these protocosms interact very often. While this process, they get an increasing energy with increasing external mass and often diversion. Finally, they have got so much heavy and so large momentum that they have reached already their anticollapse time without leaving the gas shell. Their evaporations then can be seen as eruptions at the surfaces of the stars.

4.2. Formation and Destruction of Protocosms

The first hierarchical plane of protocosms of a cosm is called as the first rank. In every rank hyperprotocosms and subprotocosms are given. The hyperprotocosms of a rank x, $APK_x$ (**a**bove PK), represent the umbrella by protocosms. They almost evaporate (anticollapse) at stable and unstable cosms. Only the subprotocosms, $UPK_x$ (**u**nder PK), evaporate completely below the amplitude of their receptacle cosm $R_o$ or of their receptacle protocosm $r_{o(PK)}$.

First-rate protocosms in receptacle cosm are packing matter in the shape of hierarchical planes of subprotocosms. They are fundamentally programmed analogously to the electron in the asymmetry system 1+0, just like their first-rate subprotocosms. In every last hierarchical plane - at "subsub...subprotocosm" - cosm seed is packed. This cosm seed itself is binding matter with antimatter (in pairs) with a little surplus of matter. This way, it carries the prestructure and those cosms inside, which finally will be forming the relatively stable bodies in unity with the electromagnetic and gravitomagnetic wave energy later coming free after annihilation of pairs. Summarily, the formation and destruction order is made of following quantum steps.

| **Protocosms ($PK_x$)** | **Cosm seed ($KS_x$)** | **Cosms (K)** |
|---|---|---|
| **packing** | **unstable particles** | **stable particles.** |

1st step: first unpacking is meant to be the first rank:

| first-rate | first-rate | |
|---|---|---|
| protocosms ($PK_1$) | cosm seeds ($KS_1$) | cosms (K) |
| packing suborder | coupling suborder | |
| down to the $n^{th}$ | down to the $n^{th}$ | |
| subprotocosm ($SPK_1$) | cosm seed portion | |

The first-rate protocosms consist of a multiple number of subprotocosms of different properties referred to their magnitude (their external mass), to their velocity and to their dependent birth position time. With them, a first part of the mass of the receptacle cosm $M_o$ is made over the steps dM with giant dizzy speed. After giving enough time (installation waytime) during the first-rate unpacking close to the world center for a new packing and a second unpacking, there are the further suborders:

2nd step: first packing and following second unpacking that's the second rank:

| second-rate | second-rate | |
|---|---|---|
| protocosms ($PK_2$) | cosm seeds ($KS_2$) | cosms (K) |
| packing suborder | coupling suborder | |
| down to the $n^{th}$ | down to the $n^{th}$ | |
| subprotocosm | cosm seed portion | |

Secondarily made protocosms give the second rank order. Their birth position and their zero passage lay in the same waytime area, but away from the receptacle cosm center. At their arising location in vacuum, the second-rate protocosms have their own oscillation zero point of their intrinsic oscillation subordinated of the universe amplitude - there is a local gravitational center. They are coming from there, and they are going back there after their installation life (strolling) and their reinstallation.

Beginning with the second rank the following is happening:

> After the anticollapse, the given asymmetry MB+1 is working externally. This means: there isn't some subprotocosm parity 0 × ($PK^+/PK^-$), but one single subprotocosm at the inside 1 × $PK^+$ or 1 × $PK^-$. The symmetries of quantizing $MB_x$ are concentrated deep inside the protocosmic center, this means subprotocosm parity 2 × ($PK^+/PK^-$). Their central dot is not the same of the gravity center of all the masses, because this one mass of MB+1 makes the

significant surplus with an inside coarse quantizing. The new collapse of the central building will be referred to that gravitational center shifted to the gravitational symmetry.

This thesis decides everything about the philosophy of frequency of earth-like relationships of extraterrestrial planetary systems!

The thought spherical surface of the radius $R_{o(PK)}$, which we now can lay into the quantized center of the anticollapsed first-rate system, will be shifted. Here we see the eccentric circle of the same radius in two dimensions. At first, the question is: Is it possible to shift the new gravitation horizon as far that both sides of the rotation symmetry are locked at the same event? The answer refers to the sensitivity problem, which here seems to be answered with the exclusion of the simultaneity by Einstein: No, it isn't! Therefore, at least our sphere always includes an asymmetry MB-1 on the one side, while it leads to the asymmetry MB+1 on the other side, both symmetry features have contrary charges now. We get the balance of subprotocosmic generation as twins of the same matter:

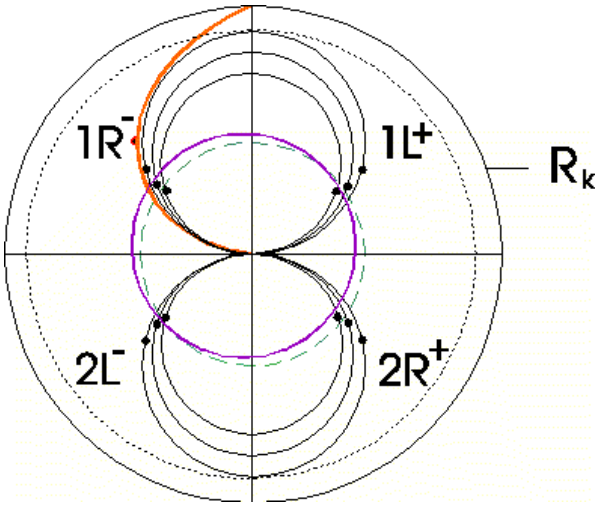
$$MB + MB = (MB\text{-}1)^{+/(-)} + (MB\text{+}1)^{-/(+)} = PK^{+/(-)} + PK^{-/(+)} .$$

Theoretic symmetry splits into asymmetry.

This way, at the inside of the cutting circle, there are $1R_x^-$, $1L_x^+$, $2L_x^-$ given for the remaining asymmetry system MB-1. At the same procedure, the eccentric circle cuts at $1R_y^-$ one minus, which gives the asymmetry system MB+1 at the other protocosm. Certainly, a double PK will be formed. It could be symmetrical, so each would consist of an equalized mass block. But the nature supports asymmetry. One SPK wanders to the other PK. There, a system of a mass block plus this SPK makes MB+1. The other PK was reduced from its mass block to MB-1. This one now is asymmetrical and reactive externally. Both systems MB-1 and MB+1 have different properties.

During the formation of secondary protocosms, the symmetry of separation apparently will be cut dependent on the momentum conservation so that these above called 2 asymmetries are always able to arise. In any case, in our planetary system we can watch this parity system of angles of inclination. Always there is a sister who rotates and tilts about 25° while the other sister or brother barely rotates and tilts in a strange feature. This asymmetry generates only single integer charged protocosms. Their amount can additionally arise big sizes.

Illustration 4.2;1: Asymmetry Cut of Central Quantum Symmetry for One Single Cut




Legend:
The inner new $R_o$-bow is eccentrically shifted to the $(MB+1)^-$-subprotocosm to $1R^-$, and it cuts one plus at $2R_x^+$, which remains externally.

If there is some waytime remaining as installation waytime during the second-rate unpacking for packing again and unpacking once more, the following suborders are possible:

3rd step: Second packing and following the third unpacking that's the third rank:

| third-rate protocosms ($PK_3$) | third-rate cosm seeds ($KS_3$) | cosms (K) |
|---|---|---|
| packing suborder down to the $n^{th}$ subprotocosm | coupling suborder down to the $n^{th}$ cosm seed portion | |

If there is some installation time left after third-rate unpacking to pack once again and to unpack after it, the further suborders are given:

a) Until it is impossible to form more protocosms caused by too less cosm mass and cosm seed mass, so that a central “Divergent Sphere, DS” remains laying there (pulsars and cores or nuclei of stars and of galaxies),

b) Until there is no waytime anymore, because packing has finished with the last things, which could be packed in.

The universe waytime was running for half a period. On base of all the waytime oscillations, the spacetime oscillation was built as a complete system of spatial vibration.

We don’t know what quantitative separation principle ejected the mass of protocosms. Only this can be imagined. More internal protocosmic energy leads certainly to a multiple number of consecutive collapses and anticollapses, which will decrease by less energy. We assume:

> At the anticollapse of a protocosm, larger parts of the internal mass $M_{o(PK)}$ will be ejected first. The residue of the internal mass is forming that protocosm of each next rank, which becomes successively smaller and which has its anticollapse closer to its arising center. Depending on the program of the quantitative magnitudes of the subprotocosms of a receptacle protocosm, different relationships are possible.

Just escaping subprotocosms decay after their anticollapse of their receptacle protocosm following the same principle of an own anticollapse and of the equal ejection of first-rate subsubprotocosms ($SSPK_1$) on this side. Such a cascade-like decay in the origin of a new solar system must lead to a sequence of **gamma ray bursts** (GRB).

At the surface of a protocosm (which is not a skin), which is opening suddenly and has its anticollapse there, that process conceived of present physics does not run in a homogeneously hot matter mash, which would get thin and which would give free the photons below the plasma temperature of about 4000 Kelvin. Such a construction isn’t necessary here, because in the beginning there are free limit areas referred to the vacuum free of particles. There the "electron pairs" are “burning down" and driving the residual protons out of each other. This is certainly not comparable with the heat radiation from the photosphere of the Sun, which comes from the inner processes of nuclear fusion and of the annihilations. Photons really couple away from the Sun at 4150 Kelvin, because they are led from the inside to the outside while no temperature forming process is running. But a process of annihilations of protons, which is converting then into the electron-positron-annihilation gives the annihilation temperature directly while its starting phase, about $6 \times 10^9$ Kelvin, hard gamma radiation! Later, after the contraction of masses to the star, the thermal conduction develops similarly to the Sun! Therefore in the beginning, there must have temporarily appeared gamma bursts of all the substructures and their sub-surfaces, because this is not a homogeneous protocosm mash but a hierarchical system of extreme quantizing order:

> The surfaces of anticollapse hierarchies are sparkling.

However, the central protocosms are sowed so thick that they make an expanding gas ball, which is giving the phenomenon of the homogeneous and isotropic parts of the background radiation in the end. If we assume, the temperature would decrease from $6 \times 10^9$ K to about 4,000 K and it would only

be dependent on the volume change, then a hot gas ball making the Sun would expand from the radius of 3 km to about 343 km. Where does the real radius of 700,000 km come from? It comes from nothing else than the formed shell of the satellite systems and planets! The subprotocosm of the next rank has the environment of the subs of the past structure. The Sun appears like a satellite system in its own gas, which is filled rich with subsystems because of the high quantizing close to the core. All these phenomena condense the space to the inside so that they are forming a common system - the star. Every star may be filled with subsystems of life around a central core.

We call the process of unpacking of cosm seed an installation. Packing is reinstallation.

During the installation - the forming of matter - a quantitative and qualitative change process of matter is running, which is named and explained here to be the **transformation of matter**:

> Secondarily made protocosms contain successively less internal mass and install less heavy systems of stars consequently. In the meantime, heavier chemical elements were produced, later more complex chemical combinations, which are given to the transformed systems of the universal life.

The transition of the last protocosmic being into cosm-seed (or vice versa) has been calculated to about 3.96 Sun-masses $M_\odot$ by General Relativity Theory (from this value, the pure gravitational collapse to the “Black Hole" would be possible under neglect of each radiation influence!). (/Q 15/, p 215)

This calculation started from the pure action of the gravitational force with extreme cooling of the atom nucleus particles, but it admitted the possibility of the support of the collapse in principle (cf. /Q 15/, p 215: “increasing pressure or additional force").

Assuming an energetic support of the collapse, one can calculate with extremely less than four Sun-masses. Because here, we only have to observe under which realistic external radiation pressure a spherical symmetric mass collection is shot together or concentrated to that collapse. Such a kind of process is given with fast setting free of energy at the surface relatively to the inside diluting itself in dense matter - at the annihilation and the impact of radiations to a PK-magon pair state.

This means: radiation pressure working all around is able to explode off the shell and to implode the core together. At the supernovae this event will be completed. Seen reversed, the internal radiation pressure makes setting free of isolated matter during the anticollapse in the course of an adequate transition from the protocosm to cosm seed.

If this derivation of our theory should be right, then inside of the isolated states of protons and electrons also protocosms must be located. How much can the protocosm mass be calculated there, if there are essentially smaller and heavier elementary particles? Is this possible at all, when relativity theorists calculate four Sun masses? According to this eq.

$$r_{o\ critic} = 8\ \sqrt{[(2\ /3\kappa c^2\mu)\ /9]} \qquad \text{(/Q 15/, p 215, (23,19))} \qquad (4.2,1)$$

with $r_{o\ critic}$ (in cm) and $\kappa c^2 = 1.86 \times 10^{-27}$ cm/g, the density $\mu$ determines the critical value of the protocosm amplitude and so the amplitudical mass $M_o$ containing there acc. to (2.15,8). For atom nucleus density $\mu = 10^{15}$ g/cm$^3$, we find about 5 Sun-masses (for the smaller electron density $\mu = 10^6$ g/cm$^3$, there are already possible $1.7 \times 10^5$ Sun-masses)! (cf. /Q 15/, p 215)

But energetically increased proton pairs can diverge to heavier and denser particles to a minimum close to the graviton energy. If we only take the density of lambda-hyperons or higher with smaller particle amplitudes, we see that mass, which is able for a collapse becomes successively smaller than 4 Sun-masses!

Consequently, the limit of $\mu = 10^{15}$ g/cm$^3$ cannot determine the undermost limit. Pair formation has to be considered at the reinstallation of protocosms and with that the density, which exceeds the above called atom nucleus density in orders of magnitude. In this respect, this limit would be essentially deeper than about 4 Sun-masses, if a corresponding pair formation energy would appear. In principle, this is the case in the universe, because after giving the first radiation from the anticollapsing first-rate

protocosms, just this radiation has come back in the end of existence, and it changes the dying system by pair formation practically shooting down to the collapse into a new protocosm.

Inside of the protons and electrons are gravitons/subtrons (see section 4.5.). Because the proton is the smaller but externally heavier and internally lighter particle, we select it to the conclusion. We calculate with gravitons and subtrons with their rest masses of $1.8 \times 10^{-9}$ kg and $10^{-12}$ kg. Then here the average density of gravitons energetically supplied in mixed matter would equal $\mu \approx 10^{89}$ g/cm$^3$. Therefore, a protocosm inside of the isolated proton can be reinstalled according to above calculation already at a critical minimum mass from gravitons of 0.007 kg up to a radius of $5 \times 10^{-30}$ m made from pure gravitation force. They are allowed to be heavier via radiation support and lighter if more isolated mass has a collapse! If the inside mass of a proton is given of $2.8 \times 10^{11}$ kg and its amplitude of about $2 \times 10^{-16}$ m, then there can be existing more than $10^{13}$ of such proton-protocosms. Because they are closed in hierarchical substructure and they have to follow a deep order of magnitudes, here cannot be given a better statement about their shape (see section 4.7.2.), but only this conclusion:

> **It is possible to pack the inside mass of a proton into protocosms, which are existing inside of that proton!**

This value seems to be plausible, because there is essentially more isolated mass in the larger but lighter particles like in electrons and neutrinos. Then we can assume correctly that in universe there are protocosms of macrocosmic dimension, which have less than four Sun-masses. As seed of the universal life, they have to be small enough to find their life space inside of every proto-planet - of only a few micrometers.

Below the possible collapse mass making a protocosm, the intermediate state “first-rate cosm seed ($KS_1$)" is reached. That state decays then in portions into the determined cosm pairs; for example: lambda-hyperons into protons and pions or neutrons and pions; pions decay then in the lepton channel into electrons and stable neutrino types finally.

Physical concentrations of cosm seed in the measurement of diverse environment energies give the program for installation of bodies and their structure: the universal life. Universe itself is living.

Solving the particle problem as cosm seed problem and protocosm problem, it is possible to explain the steps of mass defect until the temporary union of cosms below a common gravitation horizon of unstable form. After this, a cosm seed would be the special existence of a cosm, which is coupling energies and protocosm/antiprotocosm-pairs into its isolation. While annihilation of these contrasts, the isolated wave energy will be transmitted to the outside, and there it forms pairs externally.

Below a protocosm horizon, the following energy is given according to (2.4,16), for example:

$$M_{o(PK)} = 8 \times 10^{30} \text{ kg} \qquad E_{o(PK)} = M_{o(PK)} \times c^2 = 7.2 \times 10^{47} \text{ J}.$$

According to (2.7,2), the following thesis is generally valid.

> The smaller the protocosm or the cosm seed is referred to its horizon, the less isolated resting energy $E_o$ is there. From this cohesion, less bonding energy results for the isolated elements.
>
> The protocosm and cosm formation strives to the smallest bonding energy. In principle, it strives to the stability by giving of all the couplings of instability. They decay.

Cosm seeds are made from stable particles via addition of energy. The identity keeps conserved. Higher energy leads to heavier cosm seeds. Their decay sets the energy free for pair formation from which new unstable pairs are coming until there are only stable particles. The more bonding energy is given, the heavier and smaller the cosm seeds are becoming. Cosm seed-pairs exist in their high energetic environment.

Protocosms can be formed in three ways:

1st By collapse, practically by condensation of cosm seeds supplied by radiation;

2nd By pair formation of protocosms.

3rd By concentrations of e. m. or g. m. fields.

The more cosm seed shall be pressed below the horizon, the more formation energy is necessary for this good. Protocosms will be internally heavier and larger, but externally lighter. For pair formation of externally heavier protocosms, more pair formation energy is necessary.

An arbitrary protocosm opens its horizon up to $r_k$. It seems to be correct that the deepest substructures of this protocosm start to annihilate before the upper subs are really able to escape. The complete radiation made by the inner structure in the centers hits on the upper subprotocosms, then these subs are really blown out by this **radiation hurricane** setting free secondary systems at the position of their anticollapse. Such a high “star forming rate" one observes in starburst-galaxies.

This would mean that in central area was an energy concentration while the collapse sphere itself would form the complete top layers of the annihilation fires. The first radiation coming from there is shifted gravitationally to the red at the collapse horizon $r_k$ with $z_g = 2$. It hits the shift beginning in this sphere. But radiation will be shifted below this sphere so that the shifts have to be added.

In the relationship to the necessary Friedman-density $\mu_F$, the protocosm density decreases:

$$\mu_{F(PK)} \leq \mu_F /1.125^3 \approx \mu_F /1.4238 . \qquad (4.2,2)$$

During this, the new contraction starts in the central part of the isolated mass M. For example, we set the radius on less than half of it: $r_{K1} < 0.5 r_{o(PK1)}$. And less than this eighth part of the complete internal mass, we think at the tenth part, will be made of radiation-supported contraction. Above of this radius, about $^9/_{10}$ of the protocosm mass will be ejected. The central part of it equals a homogeneous gas mass, which now is expanding and cooling. Its photons are red-shifted. They are forming a homogeneous and isotropic radiation.

In the course of the central compression, a density fluctuation $\mu_1$ appears in vacuum sphere area. The sensitive amount of the black-hole-density $\mu_{F(PK1)}$ will be fallen there at the ejecting area above $r_{o(PK1)}$:

$$\mu_{AK1} < \mu_{F(PK1)} . \qquad (4.2,3)$$

Instead of this, in the center between R = 0 and $r_{K1}$, the density $\mu_{K1}$ goes to a measurement, which is essentially higher than the originally given black-hole-density $\mu_{F(PK1)}$:

$$\mu_{K1} > \mu_{F(PK1)} . \qquad (4.2,4)$$

Suddenly, the “Black Hole" isn’t black like on this position before, but at a smaller radius down to its center! About the tenth part of the protocosm mass $M_{o(PK1)}$ now is shut down by radiation pressure. It forms a second-rate protocosm of the mass $M_{o(PK2)}$. This means that according to eq. (2.15,8a)m, the new protocosm radius $r_{o(PK2)}$ reaches just $z = {}^1/_{10}$ of the original $r_{o(PK1)}$. Then the start radius of less than 0.5 $r_{o(PK1)}$ contracts to $0.1 r_{o(PK1)}$. The complete change of density results from the relationship of the radii of 1 to 10 (corresponding to our example, but we can take each relationship of z dependent on internal energy of a protocosm):

$$\mu_{F(PK2)} = z^{-2} = 10^2 \, \mu_{F(PK1)} = 100 \, \mu_{F(PK1)} . \qquad (4.2,5)$$

Consequently, in the center a new protocosm is made of the next limb in the sequence of ranks. During this process, the horizon of the opened protocosm $r_{o(PK,n)}$ is falling rapidly down to the smaller new horizon $r_{o(PK,n+1)}$ of the next-rate protocosm.

This process is the key of understanding of the anticollapse (evaporation). After the fall of the protocosm radius down to about $^{1}/_{10}$, suddenly like one beat, the complete mass of $^{9}/_{10}$ $M_{o(PK)}$ that is located above this radius is free now just having annihilation processes! The result we can see on primary gamma-radiation and the following radiations in the shape of quasars of extreme energy. For gamma-radiation the following characteristics are valid:

> It only can appear for a short time. This is dependent on the working total mass.
> In the end the electrons/positrons annihilate. The annihilation radiation is essential.
> Relatively to the radiation, which is not spectral-shifted it is gravitationally red-shifted if there is enough central mass causing such a shift.
> It only appears for one time at the birth of galaxy clusters, of a star system or of a solar system or of a proto-planet with its satellite system etc.
> So this radiation has the character of parallel flashes of different time periods.
> Especially, the new formation of stars in our Galaxy must emit such gamma radiation flashes from its desk area, but also from its halo in relatively short periods.
> After the firs-rate event, at the bigger primary systems, the gamma fires take an essentially longer time because of more mass. Those red shift is the most intensive background radiation.

This ejected mass is not a homogeneous mash, but it is concentrated in the substructures of subprotocosms as following. Centrally a certain divergent homogeneity; upwards from the center, they are quantized more and more into bigger and larger concentration areas, which are doing this way themselves according to this principle of quantizing. The "frozen" image of the isolated movement is programmed down to the smallest rotation systems. Because all the isolated systems are opened from concentrations, between them an open "world" is emerged. Each annihilation fires of the surfaces are growing to the inside and giving free the small part of coino-mass in the form of hydrogen and helium during a short time. They shoot it from each other. This process can take up only seconds, if there are orders of magnitudes like of our Sun. But in the meantime, at the inside a central body is shot down, which gas shell is expanding. These bodies lay in the dark in the envelope of cool gas.

Well, the construction is also transferable on the primary processes of anticollapse of first-rate protocosms. Though, the radiation pressure in the vacuum sphere has to be shared after the extension of the shell, which we only can assess without fine structures. Where does a radiating mass of $^{7}/_{8}$ $M_o$ compensate the isolated and external action in its shell? At this place, the partition would be calculated between pressure and traction! Never only $^{7}/_{8}$ of that mass pressure to the outside! The following should be happen:

About 90% of the ejected mass will expand as one system, which central homogeneous part will form an extremely radiating shell. The mass comes out of the protocosmic gravitation area. Therefore, it radiates with gravitational red shift of less than 2, quickly decreasing. Different parts of the origins of the red shift are given by the density shift, this way the expansive red shift and also the Doppler shift.

About 10% of the mass will be moved to the inside similarly the collapse of a protocosm. There may be more than this amount. Because of missing contraction energy they are not connected to a new active protocosm but to a Divergent Sphere DS close to the state of a “Black Hole”. It could be a **pulsar**. So, this body exists close to the state of a protocosm. In this respect it curves the spacetime very strong in its proximity. The strong attraction force of the pulsar core attracts a part of the expanding gas shell (the pulsar cannot be seen this way, now it is a part of the star center or of the star system center, where it is winning energy attracting gas masses until it is able to have an anticollapse).

This new central star catches bodies of the shell time after time in divergence to a Black-White Hole (protostars or protoplanets, if it its smaller). This way, it gets a dense shell, which one thinks this would be the real star, but it is only a part calculated to the galaxy core or to a star core.

This process is comparable with the HRD (Herzsprung-Russell-diagram), which establishes dwarf stars in its main turn. /HRD: Q 1, S. 129/

4.3. Installation of Matter

The total area starting from the central point R = 0 (t = 0) or $P_1$ of the microcosms or of the macrocosm up to the amplitude $R_o$ ($t_o$) has to be taken into our account. Inside of the waytime interval, the protocosms are forming out a matter structure and from above they're collecting it. The ideal oscillation can start from each point having begun or finished. Therefore, the first begin of the world can be started in each arbitrary point of waytime. If we see only single phases of the world oscillation, we can relatively speak of a start or of an end. Now we start from half a period $\tau_{o(GK)}$ of the receptacle cosm.

For installation phase, every first-rate protocosm starts from an area around the point $P_1$ with about the same velocity. Equation (2.13.1,1) is valid. The ejecting mass of a protocosm M corresponds to its internal rest mass $M_{o(PK)}$. After its first anticollapse, where the total divergence mass is acting to the outside, about the tenth part of the internal mass has a collapse again according to our example. But after a series of secondary ejects, the total mass $M < M_{o(PK)}$ comes to the outside in divergent feature.

The mass of the determined protocosm $M_{o(PK)}$ is dependent on the internal quantizing (see sections 2.13.1. to 2.13.3.). From it, the upper limit is given that we only can assume. The low limit lays in the proximity of the masses of stable subparticles. These two stable particles relatively resting to each other make the two mass-determining lines:

1st The proton-graviton-line, 2nd The electron-subtron-line.

Their origin is given by the equations (4.5,1) and (4.5,2). This means that in a proton, the mass only can have the amounts between the graviton mass of about $1.9 \times 10^{-9}$ kg and the internal proton mass of about $2.8 \times 10^{11}$ kg - this is the graviton line. In the universe cosm, the internal mass $M_{o(PK)}$ of protocosms is allowed to follow the proton line in the interval between the proton mass and the universe mass:

$$1.67265 \times 10^{-27} \text{ kg} < M < \text{about } 7 \times 10^{52} \text{ kg};$$

for the electron line is valid:

$$9.1095 \times 10^{-31} \text{ kg} < M < \text{about } 7 \times 10^{52} \text{ kg}.$$

After installation, the lightest and first structure of real life may be the smallest atom – this is hydrogen. Therefore, the line finishes at about $1.67 \times 10^{-27}$ kg. During the high-energetic protocosm phase, hydrogen atoms cannot exist. We estimate here that the subprotocosmic substructures consist of unstable particles those mass is determined of the necessary special relativity and of the depth of the subhierarchy (cf. (4.5,1)). It's impossible to give the complete universe mass into one single protocosm. Meaningfully, the first-rate protocosms should install galaxies at least. Therefore, the possible maximum mass of $7 \times 10^{52}$ kg should be separated into protocosm masses. About $10^{50}$ kg for supergalaxy clusters, $10^{49}$ kg for galaxy clusters and $10^{45}$ down to $10^{36}$ kg for the galaxies like in the Virgo cluster and in the local group (Galaxy, Andromeda nebulum etc.) or dwarf galaxies could be possible here. Smaller ejecting masses are part of the subprotocosms and their substructures. The heaviest and most frequent protocosms are already dying while their anticollapse in the proximity of the universe center $P_1$. Central concentrations are making one giant dark cloud after radiating a "big" Small Bang.

A photon or a fallon that extending is running with vacuum wave velocity c has no time to stroll, because its way equals $K_o = 2\pi \times \frac{1}{2}R_o$ while its cosm pulsation. Consequently, it has **no waytime of idleness** $s_b$, $\tau_b$ acc. to (2.19,34) and (3.2.3,31). When the protocosms are located below the receptacle cosm amplitude, there they already have their waytime to be able to install, then there is valid:

Whenever they are unpacked and hardly red-shifted to the maximum and hardly radiated extremely high energies, the radiations are already exchanged. Those protocosms on their highest way on the amplitude are on their way again to catch the structures laying below them. Soon these protocosms are packed in their substructure (for the observer, they are disappeared or “completely died"). This is the picture of that life of such protocosms in the proximity of the amplitude.

Heavier and smaller protocosm are running below the amplitude $R_{o(GK)}$ on "disturbed" ways - disturbed by the shape of the idleness bow $s_b$. First, like all the other they are flying yet along the united curved installation orbit $s_i$ that is apparently leading to the amplitude $R_{o(GK)}$. But then they are opening before reaching the amplitude. This is caused by the bigger external mass $m_{o(PK2\text{-}u)}$ but with the same velocity $v_{i(2\text{-}u)} = v_{i(1)}$. The anticollapse starts the matter transformation process. This orbit thought to reach the amplitude breaks off suddenly. So the anticollapse bow $s_i = 2\pi R_i$ is missing a measurement for completion of its originally thought rotation radius $R_{rot}$.

The ejecting matter has a graduation of waytime limit of idleness opposite the center $P_1$ depending on the radial height $R_i < ½R_o$ that can be reached relatively .

The idleness waytime section is derived of the installation waytime $s_i$, $\tau_i$ (installation waytime from collapse to anticollapse) and of the idleness waytime $s_b$, $\tau_b$. The length of the idleness bow $s_b$ - the true world way in vacuum - equals the product of idleness time $\tau_b$ and idleness velocity $v_b$ ($v_b \to 0$; from the proximity to zero up to microcosmic $10^7$ m/s):

$$s_b = v_b \times \tau_b \quad . \tag{4.3,1}$$

Significantly, the idleness time $\tau_b$ and the light velocity $c_v$ are connected to the exchange way of radiation $K_\gamma$ (also valid for fallons). It makes the radiation cosm. While moving, it is the waytime-like equivalent of the idleness time $\tau_b$ and the idleness bow or arc $s_b$:

$$K_\gamma = K_b = c_v \times \tau_b \quad . \tag{4.3,2}$$

Because of eq. (2.10,18), with the waytime $\tau_{(K)} = ½\tau_o$ the maximum geodetic line $K_o = ½\lambda_{o(GK)}$ is valid as following:

$$K_o = c \times \tau_{(K)} \quad . \tag{4.3,3}$$

The maximum exchange way of radiations could have the value $K_\gamma \to K_o$, if the first objects would be opened immediately in the proximity of $P_1$ and if they wouldn’t have gone some ways in vacuum. This contradiction is not solvable diverging the exchange way of radiations to half the period time of the receptacle cosm $K_o$. Seen from universe center, a protocosm is running on an ascent bow $½s_i$ and then on an idealized descent bow $½s_i$. We get the cohesion with the complete installation bow $s_i$ and with the initial first-rate protocosm velocity $v_{i(1)}$ within half the protocosm period time $½\tau'_{o(PK)} = \tau_i$ also relativistically dilated to half the receptacle cosm period time $½\tau_{o(GK)}$ acc. to eq. (2.19,34):

$$s_i = v_{i(1)} \times \tau_i \quad , \qquad v_{i(1)} \to c \; . \tag{4.3,4}$$

A protocosm is only living while its half a period time $½\tau'_{o(PK)}$. Half of it has to be calculated for both, the way up and the way down $½s_i$. Half the way leads from the collapse to the center of gravity and from there to the anticollapse and then back again. The waytime-like equivalent $K_i$ of half of the protocosmic world way $s_i$ is described then by the following equation:

$$K_i = c \times \tau_i \quad , \qquad K_i > s_i \quad . \tag{4.3,5}$$

For the way down from the idleness bow, the same conditions are valid acc. to (4.3,4) or (4.3,5). From this cohesion, the relativistically dilated half a period time of a protocosm $½\tau'_{o(PK)}$ is following (living, dying and to be reborn) on one universe pulsation $\tau_{(K)}$: half a period time of that protocosm $½\tau_{o(PK)}$ must be dilated up to half the period time of the receptacle cosm $½\tau_o = \tau$. This means:

$$\tau'_{o(PK)} = \tau_{o(PK)} / W_{SRT} \longrightarrow \tau_{o(GK)} . \qquad (4.3,6)$$

At a determined velocity in the proximity of light velocity, the dilated half of the period time as a waytime of the first type $r_i'$, $t_i'$ in the shape of $½\tau'_{o(PK1)}$, $½\lambda'_{o(PK1)}$ of the concerning protocosms reaches half the period time or half the oscillation length $\tau_{(K)}$, $K_o$ of its receptacle cosm (world's waytime), e. g. of the universe. Relatively, the idleness waytime $s_i$, $\tau_i$ is decreasing next to zero acc. to eq. (3.2.3,31) and (3.2.3,32). The oscillation length $K_o = \lambda_U/2$ corresponds to one of the universe pulse $K_o$.

The unreal way of the first-rate protocosms $K_i$ additionally the exchange way of light $K_\gamma$ equals half the period time of universe $K_o$:

$$K_o = K_i + K_\gamma \quad , \qquad (4.3,7)$$

$$K_o = ½\lambda_o = K_i + K_b \qquad \tau_{(K)} = ½\tau_o = \tau_i + \tau_b . \qquad (4.3,7a)$$

But the sum of the idleness bow $s_b$ and the installation way $s_i$ is substantially falling under the oscillation measurement $K_o$:

$$K_o > s_i + s_b \quad . \qquad (4.3,8)$$

Just this is the cause, which gives the "time" to the material phenomena in cosm at all! Objects are pausing there on their “waiting positions" until collecting and packing again. All the pendula seem to stop their movement at determined elongations (and move extremely slowly) while the normal and largest pendulum would go on. And then, they seem to wait for coming along with the returning normal pendulum. In this respect, the oscillation of the universe - here seen as ordinary or normal pendulum - is quantized and set of partial steps of pendula of the first-rate protocosms. From this complete working, the dome oscillation of the cosm is made. But under this dome in the intrinsic waytime, further events of protocosmic changes are oscillating so that a harmonic concert of waytime oscillations will follow. This common vibrating is escorted by the exchange waves of light bubbles of the installed worlds.

These magnitudes show that protocosms of diverse radial heights have to be different with at turn of essential magnitudes:

> While increasing radial height (elongation) R from the center of gravity of the receptacle cosm R = 0 up to the amplitude $R_o$, the external protocosm mass $m_{o(PK)}$ is decreasing like also its momentum. This means that the protocosms in the proximity of $R_o$ are externally lighter than the protocosms in the proximity of R = 0 inside of their receptacle cosm. The isolated protocosm mass $M_{o(PK)}$ is increasing while this process. The length of the idleness geodetic line $s_b$ is decreasing. Just like this, the intrinsic time $\tau_b$ of idleness is also decreasing. The fine structure of subprotocosms is getting better during their homogeneity is increasing in their isolated inside.

Protocosm energies are relativistically shifted analogously to the equation (2.4,43) for the indicating observer:

$$E_{A(PK)} = E_{Ao(PK)} / W_{SRT}. \qquad (4.3,9)$$

But in shorter distances to the center of the receptacle cosm (close to R = 0), the installed protocosms show the same initial and final reflection of their installation. Between them, some intrinsic time is given in which the ejected electrogravitational and electric masses are able to form the well-known

structures like seen in universe (star systems and subsystems). The isolated observer will think of stars of superlative energies (this is right!) instead of initial and final phase projections. And he will only calculate their red shifted radiation into the Doppler-effect ... and he will be mistaken by his world philosophy like he does until today when he means, celestial bodies would escape with almost light velocity! But really, their pre-bodies - the protocosms - are only escaping.

The first-rate protocosms are fine-substructured. Their substructure getting finer is continuing inside their subprotocosms and deeper etc. This way, at the anticollapse of first-rate protocosms in the proximity of amplitude wide-branched systems with a compact gas center are arising - super galaxy clusters. Because of the especially fine structure, the largest and the most far first-rate protocosms (far from the center of receptacle cosm) should have installed a multiple number of smaller objects - **dwarf galaxies**, which are distributed over larger space areas with high density. Such protocosms, which are the largest types in the universe are almost miniature formats of universes. Their fine structure is particularly reaching for space but only of a short existence time. Inside of such a miniature universe that subsubprotocosms make fine-structured miniature universes. This seems to be the reason why astronomers observed a lot of blue dwarf galaxies, young and hot. Nevertheless, they were real “smallest-child-objects", they died quickly again in large space areas. In the proximity of amplitude, the protocosms only live for a short installation time in receptacle cosm. In their end, they are burned to subprotocosms again. Because the Galaxy itself lays in the interstice, one observes the dying of the classes of dwarf galaxies inside of that space area, which is laying above the Galaxy in the direction to the universe amplitude, when the universe is already on its way down to the elongation to zero. The process shows that the end is near! The elongation of our cosm is already contracting again.

Better solutions of galaxy structure, you’ll find in “TBA V” of 2021.

This reflected image of the universe leads to a consequence as followed. The structure of the complete universe must have the shape of a galaxy in the form of a twin. Its cells will have the shape of Hubble-bubbles in which the super clusters are the next element of the hierarchical structure followed by galaxy clusters etc. The double structure of this primary order should be provable as if it would be comparable with the content of an almond kernel, of two hemispheres. And a center is necessary.

But then one body would consist of ordinary matter and the other of antimatter. From this a simpler explanation would follow for the decay of neutrons and antineutrons. In our world, a neutron changes into proton, electron and electron antineutrino. Symmetry would then exist in the sense of twins by parallel change of one antineutron into an antiproton, positron and electron neutrino.

For each parity orbit of the receptacle cosm, there a standard protocosm exists. Because of that isolated structure, the phenomena of standard galaxies are following. The heavier the first-rate galaxies are programmed, the coarser their structures are quantized, the more compact they appear and the closer their structure elements of a small number are laying next together. Finally, there is a break point in which the ejected masses of protocosms are decreasing essentially. These protocosms are closer to each other. So they seem to make a central gas ball. The universe should have two giant central bodies close together with giant masses, covered by impenetrable clouds. We assume that the assumptions of “big-bang-theorists" can be particularly confirmed here referred to the “epoch of light".

The extreme density of the central phenomena of anticollapses gave the last contribution for an expansion of the gas cloud after annihilation of electrons and positrons. That cloud was getting so cold that it cannot be observed directly, because it is the first and biggest dark cloud. Its remaining radiation is the well-known background radiation. But this doesn’t mean that the universe would have arisen from the so-called "Big Bang"! Above the twin-like dark cloud as central body of universe, the more compact structures have developed themselves into more concentrated structures from first-rate protocosms. After this essential feature, every system must have such a central body that is covered of a gas cloud giving an intrinsic part to background radiation or to radiation at all. At smaller objects like galaxy cores or star cores, their gas shell can be passed by radiation. They are shining themselves. The biggest and largest objects like galaxy clusters and super galaxy clusters have a twin-like central body, which is shielded by the cold gas. In this respect, the assertion of "big-bang-theorists" is not able to verify that the gas would have the primary role of galaxy formation. Really, the gas and further structures of life are existing close together and side by side!

Astronomers found that fifty percent of all the systems should be double systems originally. Our asymmetry system MB-1 asks for the formation of two twin bodies placing side by side and of one third single body, from this process are given 50 % double stars consequently. Dependent on the programming of the distance of double star systems, they can exist side by side or they can completely be united. We think of a doubling of the planets Jupiter, Uranus, Venus, and Mercury. It is also possible for the Uranus satellite Miranda.

Installations make extensions of radii of objects far away from the original radii of protocosms. Their sub-objects are on their way to the outside with almost light velocity. Protocosms install their superimpositions from which one can hardly see today what structure element has come from which origin. The installed subcosms are touching into each other.

Each protocosm is ejecting an asymmetric twin body - the double funnel - but in expanded shape. This seems like growing of a tree that root would have the same medium as its crown: at a trunk two crowns of a tree would grow into both directions. For example, each crown would be like a fungus hat, and so it equals a funnel. Between both funnel margins, the funnel slot has its location. From there, the already existing internal annihilation energy comes out first, red-shifted dependent on the protocosm type. They force the upper first-rate subprotocosms immediately for a new collapse under radiation pressure and for an escaping flight during the remaining half a period.

Every local extension was accompanied by the existence of living beings, which were living inside of the "bang-gas" made for by-product from the beginning and which were eating that gas like a new born child would take its food. In this respect, there were never an increase of entropy from gas chaos by chance but only by specific and programmed preparation of gas in living and self-organized bodies born together with that gas (see section 4.10.3.). The real beings who are able to exchange the substances like gas born in the gas period - the living beings – remained unnoticed by present theorists who want to see these processes arising from food per chance to be an abiogenesis of life in the cesspool. But the inverse was proved by life!

As a protocosm of the horizon of $r_k$ is burning (evaporating) can be estimated by annihilation of electron-positron-pairs. We know that its matter is substructured, so also burning over substructures. Consequently, the completely ejected mass will not evaporate homogeneously, but each structure element of that hierarchy will burn and sparkle itself. Together, chains of flashes will be turning and burning side by side parallelly and intensively.

One electron is burning radially making one wavequantum of $¼\tau_o$ length and $2 \times 10^{-21}$ s period. The surface of that protocosm ejects the first subprotocosms with the ability of annihilation, then the second layer follows etc. Let us check an ideal calculation! For **one single second** of a radiation sequence of wavequanta (one flash consisting of a turn of sub-flashes), a radius of $5 \times 10^{20}$ electron-positron-radii would have to burn allover. With the electron radius of about $3.86 \times 10^{-13}$ m, this would equal the length of the burning radius of $1.93 \times 10^{8}$ m or 193,000 km. Calculated on a spherical volume with eq. (3.2.3,15) of $3 \times 10^{25}$ $m^3$ in relationship to the lepton volume of $2.4 \times 10^{-37}$ $m^3$, we find the quotient: $1.25 \times 10^{62}$. There are $1 \times 10^{32}$ kg lepton mass and antimass for burning down. Before the fire of leptons, protons had to be annihilated. Their energy was transformed down to the lepton annihilation temperature. So inside the homogeneously simplified protocosm, the pair mass of baryons (1836 lepton masses: $2 \times 10^{35}$ kg) exists parallelly to the lepton pair mass. If one takes the assumption after which about $6 \times 10^{-9}$ parts of coino-matter would have survived that annihilation, then about $10^{27}$ kg remain for the complete system. Now one cannot calculate with a fire of complete matter uniformed and homogeneously as if there would have been a “Big Bang". In opposite to such an opinion of uniform processes, parallel fires are running inside of all the subs. The intensity is increasing at expense of the fire time. If this protocosm would eject only 1000 subs and subsubs then we already had enough coinomass of $10^{30}$ kg for one flash of one second - that's about the mass of the Sun! Each parallel fires a little shifted in time would activate a series of really short but superimposed annihilation flashes.

This test shows that such a protocosm type ($r_k \approx 3$ km), which is able to produce our Sun system or similar solar systems, can initiate a second shower of gamma rays in the course of anticollapse series of the hierarchy of the subs but just when matter and antimatter are able to get free without strong red shift of spectrum. Comparable processes can be find in the galactic area, but not at the margin of the

observed cosm - like suspected - because there the breadth of all sub-annihilations is essentially higher around orders of magnitude. Even the galactic processes will be small shifted to red and reflect a spectrum of gamma radiation, which is below the characteristic electron annihilation. The frequency shift must be caused by gravitational red shift during the opening of an arbitrary protocosm type of $z = 2$ ($f' = f_o/3$) and less with increasing opening radius. Consequently, the birth radiation intensity of stars in the Galaxy should have an interval between **170 keV** and 511 keV, maximum at about **300 keV**.

Each fire of subprotocosms in suborders accelerates the thinned coino-hydrogen inclusively some helium to form spherical spaces of gas in which centers the last rests of the fires remain in the sub-structure. The denser they are, the longer they live and they give energy. In smaller systems, cooling out and compression appear faster. The isolated structures are moving themselves by program. They represent a kind of specific life, which consumes the offered gases and which synthesizes heavier chemical elements from them. These processes are running in the center of the Sun. Only the dying of this form of life transforms it down to a cooler feature with new tasks of metabolism. This means: the central body is covered by gas, which covers a part of the satellites of it. The structures already represent the life itself from the beginning. For larger systems, the nebulum is not enough to cover those protocosms, which were ejected far away from the horizon. They will be separated bodies of the complete rotation system (galaxy, solar system, planetary system, satellite system etc.).

The phenomenon of a dense nebulum was unknown for astronomy. In the year 1994, the first object was discovered, which shows an expanding dark nebulum ("Saxon Newspaper", February 19th /20th, 1994, p. 33: Brightness Giant in Milky Way). Our solution explains this phenomenon to be a central body including its subsystems by following facts:
- The object has the distance of 6500 light years in the constellation Swan, Cygnus X.
- It is a hot expanding gas bubble.
- It covers the star, which is inside of it with extreme darkening.

After the appearance of SN 1987 A at Sanduleak-69.202, a secondary symptom was observed. One object glowed for a short time. Soon it was covered by dust. Because interactions between energies of SN 1987 A and already existing stars and dust clouds cannot be excluded, no further attention was given to this operation. But we have the opinion that there a new system was born from the next-rate protocosm, which is covered now. Actually, I expect a second object on an exactly location contrary to the first position behind this SN.

With the assumption such dark clouds would follow the principle to be a “nest of the newborn star", we have got a systematics, which is conform to the hope of present astronomers that a lot of the universe mass would be covered with factors between 2 and 3. We showed that the mass problem of the universe according to equation (2.10,23) is not only dependent on the visible masses but essentially of the packing of a part of the mass in protocosms dependent on period time state. But the conception of “Big Bang theory" follows the naive hope that the complete gas would have changed contracting into the objects of universe. Therefore, the complete mass would be visible. This thought is wrong. Additionally, there are more reasons to deny dark mass and energy (read “TBA V”).

A single first-rate protocosm installs a supergalaxy cluster. All the subprotocosms, which are coming out from it are forming galaxy clusters. Inside of them, substructured protocosms make single galaxies like our Galaxy. This suborder is running down to the movement of elementary particles keeping rotation systematics. The observations have shown that cosmic masses seem to rotate around nothing. Is this a mystery or are there just “Black Holes"? What real order has this observed structure of universal objects?

> Protocosm represent the origin of movement, which was given in the hour of birth. But now, however, every lane of them is missing because they were installing the rotation systems and they was negated during this operation. In the turn of their change, in principle they left an extremely heavy central body covered in nebulum. In that center the star core is covered, which is similar to a Black Hole, but which vibrates into the state of white hole temporarily in the course of matter injection. That star core cannot be seen because of the shielding of its radiation by its strong shell. It is a Divergent Sphere, still it is not a “Black Hole”.

Even we don't know the nucleus of our Sun, although we see the Sun as compact object looking at its surface, which isn't really the surface but a nebulum above the surface of the core. Additionally to these special effects, the essential curvatures of light falsify the observations. Stars can be seen there where they are not working; but there where they are working, we observe invisible gravitation - centers of gravitation.

On base of these new knowledge, we define a star:

> The star consists of a central body that came from the upper main levels of a protocosmic anticollapse covered with different gas masses dependent on the type of protocosms. In the gas shell, there are the fine structures of its subprotocosmic bodies - the life in this medium. The brightness of the gas shell is dependent on its mass, its density, and its energetic activity of its subprotocosmic bodies close to it. The star center has a center of a Divergent Sphere DS in which protocosms of higher ranks are formed.

Therefore, a star is not a gas ball but a building of bodies essentially finer structured than the complete planet system and the satellite system around this star. Now we had to adjust temperature limit values when we could speak about a core of a cluster, a galaxy, a star or of a protoplanet etc. After all, the living beings of a planet are producing more energy than the planet is absorbing. Progressively the relationships are changing. Living beings don't exist anymore inside the gas shell of the protoplanet but also inside of that liquid and solid media. Jupiter is an example of inside life. If the gas shell falls below the equilibrium of radiation emission and radiation absorption into the direction of a second operation, then this can be a planet without life or such a satellite without other factors. Life has just gone. This means: there is no single planet, which wouldn't have lived before reflecting the state of death today.

In the first-rate subprotocosms of universe, there are already substructures. With all the by-products (galaxies in environment) the mass should be enough for definition of Galaxy subprotocosms with more than $4 \times 10^{41}$ kg ejected mass and less than $10^{-57}$ kg external mass. So the masses of Galaxy and of Andromeda nebulum of $4 \times 10^{41}$ kg and $7 \times 10^{41}$ kg could come from the first-rate subprotocosms. Each after the fine structure of the first-rate protocosm, there will be a spread width of the possible subprotocosms. They will form then spiral galaxies beginning with giant and running down to dwarf-like shape.

Each open protocosm emits radiation, which pursues those protocosms and the own subprotocosms, which aren't opened yet moving above their geodetic line. First-rate protocosms are faster. They are moved approximately and divergently to vacuum light velocity, and they are hardly obtained from the light in the remaining time. Sub-rate protocosms can be happened by the trailing light, though. Their velocities and their dilations are increased above the original conditions. Now we give a few possible calculations of simple character to find some quantities.

The highest number of anticollapsing main levels n we mark with y:

$$y = n_{max} . \qquad (4.3,10)$$

If $n_{max}$ equals 40 main levels, then 40 anticollapsing main levels are following for stable particles. Additionally, the equations (2.13.1,2) and (2.13.1,3) are valid. The number of protocosms for each main level n has to be calculated with (2.13.2,6); it is $N_{(PKn)} = 4n^2$. Each secondary level has an intrinsic quantitative mass type M. Therefore the mass for each secondary level **l** must be calculated after calculating that step on the main level n. The number of protocosms N of **l** is then:

$$N_{(\mathbf{l}max)} = 4n^2 - 4(n - 1)^2 = 4 (2n - 1).$$

$$N_{(\mathbf{l})} = 4 + 8\,\mathbf{l} = 4 (2\mathbf{l} + 1) ; \qquad (4.3,11)$$

for example: $n = 1, \mathbf{l} = 0 \rightarrow N_{(\mathbf{0})} = \mathbf{4}$;
$n = 2, \mathbf{l} = 0 \rightarrow N_{(\mathbf{0})} = \mathbf{4}, \mathbf{l} = 1 \rightarrow N_{(\mathbf{1})} = \mathbf{12}$;
$n = 3, \mathbf{l} = 0 \rightarrow N_{(\mathbf{0})} = \mathbf{4}, \mathbf{l} = 1 \rightarrow N_{(\mathbf{1})} = \mathbf{12}, \mathbf{l} = 2 \rightarrow N_{(\mathbf{2})} = \mathbf{20}$; etc. Deleted.

The results of the model calculation of the universe, of the solar system, of proton and of neutron are shown below here. They show that the systems are following a low of formation reflecting similar structures. But each cosmic body can be programmed independently with the above called magnitudes. One can notice a main column, practically two main branches (arms), which is meant to be a kind of spinal column at differentiated life finally, then there are the head and the tail. Main column has four secondary arms, differentiated finally into two arms and two legs. A single hyperprotocosm of the subprotocosm in n = 1, which is driven out of the funnel slot into the direction of the main column, is opening as head of the system. Subsystems being there give quantizing of two cerebral parts for example and their dual distributions of the sides of glands, o tooth, of ears, of nose openings and an internal central body again - the tongue. Just like this, one can see the quantizing of the last subprotocosms of the four secondary arms: hands and foots. If both body of a double funnel are separating themselves then they go on existing as two living beings particularly. Without this separation they seem to be twin-like living beings made close together like plants - half a being having a crown, the other half a being having the root. Each star is forming the biosphere of mother and father and of further hierarchies of mothers and fathers. All the life is making a system being totally dependent on the existence of each other living element.

A protocosm evaporates while an anticollapse, and it negates its nature and stops. Then it rotates very slowly around itself and around its reference area of rotation. Subprotocosms coming from the isolated inside of this protocosm and their subs are also braking their velocity as soon as their ejected mass converts to the outside caused by the exceed of the radius $r_k$. Each sub-sub-...protocosm is burning then during its own anticollapse and negating the intrinsic and origin protocosmic velocity. The annihilation fire makes system elements running with high velocity relationships against each other accelerating the primary hydrogen-helium mixture. Inside of the radiation pressure, those structures will be also accelerated escaping and coming from the subprotocosms. All the substructures are installing their giant mass ejecting to the outside this way up to determined waytime coordinates. Everything, which was separated will be thinned. But the originally given concentrations of hydrogen and helium gases are kept in the pre-bodies of life. The complete structures made for rest in gas of expansion are beginning to fall now in the course of external gravitation effect. Because of the push trends transmitted by the original angular momentum of the protocosmic orbit it changes into the programmed rotation. Immediately after the anticollapse processes the high interaction energies cause new collapse processes and new formation of secondary protocosms. Such a kind of cosmic children can escape far away (in galaxies) and also stay in the proximity of its cosmic parents (in global star clusters, stars etc.) dependent on the incoming energy.

High energetic unstable particles are heaviest sub-rate subprotocosms forming an ejecting and expanding gas cloud in the center of each anticollapse, substructures existing there from the beginning. Up to the amplitude of all ejecting matter (at the largest radius of ejected substructure), this cloud will become successively thinner, because protocosms are becoming lighter and more concentrated and because they are installing relatively independent structures similar to the center. This means: in the center, there are less structures of considerable density and number. Centers seem to be homogeneous. Just this is the observed image of all the galaxies as well as of all solar systems! Think at the comparability of satellite systems with the inner planetary system of our Sun system, please!
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## 4.4. Curvature, Cosmogonic Red Shift and Distances in Cosms

For curvature of radiation way externally of the horizon $r_o$ the following approximation equation of General Relativity Theory is used:

$$\Delta\alpha = 2 \times r_o / r \; . \qquad \text{(/Q 15/, p 106)} \qquad (4.4,1)$$

Using equation (2.8,7) the assumption is caused that below the horizon $\frac{1}{2}r_o$ the mass $M_o$ is not acting to the outside at all. Einstein's equation seems to be an idealizing for stable cosm solutions when changing mass $M_o$ is only working above of the horizon $2R_o$! Referring magnitude is in principle that radius $r_o$. A light ray should be curved with about **1,75"** at the sun, theoretically.

First measurements gave in the year: 1.98" ±0.18". Later measurements followed with: 1.61" ±0.45", 1.78" ±0.17", 2.24" ±0.10", 2.73" ±0.31", 2.01" ±0.27" and 2.17" ±0.34", those average is: 2.07" ±0.26". (/Q 12/, p 118)

But the relative amounts for radio wave curvature of quasars are essentially stronger after our literature source: 1.04" ±0.15", 0.99" ±0.12", 1.14" ±0.30", 1.07" ±0.17", 0.97" ±0.06"; those average: 1.042" ±0.16". (/Q 13/, p 118)

Light rays of a source in cosm will be distributed fundamentally. That system has the character of a **gravitational diverging lens (concave lens)**. Therefore, each space curvatures are enlarging the objects optically with light and mass geodetic lines appearing closer or equal far away without knowing where they are really referred to another object.

> In receptacle cosm, each objects are enlarged optically by gravitation lenses.

Gravitation lenses are already proved for single states. Natural curvature of cosm cannot be proved from the intrinsic point of view. To have a reference point in vacuum is impossible. Enlarging is a function of mass density in cosm.

The Cosmogonic Red Shift in Cosms and Protocosms

During the process of installation of sub-worlds from protocosms after their anticollapse, the density change hasn't only influence on the radiation geodetic lines but also on the temperature. In the course of elongation starting from $R_1 > 0$, the installation process begins with the highest density $\mu_1$ of cosm. According to eq. (4.1,9), it decreases down to its minimum $\mu_o$ dependent on mass installation according to eq. (4.1,7) and of the volume change as the result of elongation acc. to eq. (3.2.3,57) generally until the amplitude $R_o$ is reached.

> Density reduction of cosm is the cause of red shift of photons appearing from the start of cosmic vibration section at the elongation $R_1$ following the phase running $\phi$ up to the amplitude $R_o$.

This operation corresponds to an evacuation. The pressure is decreasing while increasing cosm volume and smaller increasing mass M. **No galaxy escapes!** Present theory with the so-called cosmological red shift by Doppler-effect has no meaning anymore.

The installing protocosms are stopping and giving free their pre-galaxies totally resting. But their radiation is running now into the receptacle on its way $K_\gamma$ while the density is decreasing on this way along the elongation up to the amplitude doing further mass installations. During this operation, the radiated spectrum will be shifted to the red. Some originally red shifted spectrum will be shifted to the blue in the course of downward elongation. For an observer resting on a galaxy, it appears later when the destruction comes with the heat of the returning radiation.

> On the way of photon extension and in the course of elongation up to the amplitude, the density is changing to a minimum. If the process is turning, the density increases to a maximum. Blue shift is following.

This event is similar to such an "expansion" of universe. One assumed, along the density reduction, pressure reduction with volume increase and mass increase would be running. But these processes cannot be hardly described with state equation of gases of thermodynamics according to Boyle-Mariotte and Gay-Lussac as follows:

$$p_1 V_1 / T_1 = p_2 V_2 / T_2 \quad . \qquad \text{(/Q 5/, p 166, (W15))} \qquad (4.4,3)$$

Unknown magnitudes tempt to estimated values. The installed gas pressure $p_1$ of the hydrogen-helium gases ejected from protocosms is decreasing to $p_2$ along the general density reduction together with a certain expansion of the gas cloud. While this operation, the volume $V_1$ increases up to values of $V_2$. Here the temperature decrease is coupled with the installation temperature $T_1$ to values of $T_2$ under

the condition that the volume increases less than the pressure decreases and when the gas mass keeps constant. Mass constancy is illusory. Such a constancy only can be assumed in that cosm area meant to be an idealizing where anticollapse processes have essentially finished and where the elongation of universe has no influence but alone the local expansion of gas clouds. Therefore, we try below to derive the temperature change from density change.

But there is not a single "Big Bang" in the meaning of "Quarks Theory" for origin of background radiation, but there is a structure of special local events those are coupled at quantizing of gravitation just orientated at annihilation. It is possible to compare it to a globe artichoke observing from the inside to the outside. The system can be seen: the **central quantizing** of each cosm like each protocosm consists of most of substructures having the smallest ejecting mass of each structure element (each subprotocosm). At each first radiation burst, almost homogeneous and isotropic events can be reflected (like in blossom center very fine stamina do so). The higher the elongation is going, the less differentiated is the quantizing (larger petals at margin). This way, local operations are installed. Above the homogeneity cloud, a structure far away from homogeneity and isotropy is formed. Its installation is also accompanied of events making local background radiations. Their temperature is higher than the temperature of relic radiation of the center of receptacle cosm and that coming back radiation from the amplitude (all over homogeneous), because their amplitudes are smaller than universe amplitude. Using (2.9,21b) from the small radius the higher amplitudical density $\mu_0$ of protocosms referred to universe and other protocosms is following, being larger and internally heavier. But they are determined of concentrations while openings of protocosms. Then this is no general and homogenous density. Only in the proximity of $R_1$ up to the first bigger protocosms while elongation R, it is still homogeneous enough. In this respect, the density reduction in the smaller cosms is lower than in the larger cosms. Respectively, central dark clouds are formed into the centers.

> So the largest substructures of anticollapsing protocosms overlap the warmer background radiation of its receptacle cosm with a warmer temperature. In 1992 COBE was measuring the inhomogeneities of up to $3 \times 10^{-5}$ Kelvin in short-wave area of one millimeter (cf. section 4.3.). (/Q 4/, p 182, illustration)

This one millimeter of wave length corresponds to 14.3 Kelvin. The homogeneity is broken here. We take notice that we see the processes of the first radiation of the center of universe being homogeneous and isotropic relic radiation of intensity maximum at 2.7 Kelvin as well as the processes of the first radiations from protocosmic centers being warmer relic radiations of homogeneous character making inhomogeneity at 14.3 Kelvin. If this is right, then the warmer birth structures of the centers of those protocosms laying between them had to be seen. Certainly, the number of warmer relic radiation sources increases exponentially referred to the last protocosms. Alone from this fact, one can conclude that the warm flank of background radiation must have a homogenization up to 15 K. The intensity will decrease because it is impossible to construct an equivalence between the more central dark cloud of universe and the more central dark clouds of protocosms having less mass than universe inside. Finally the dwarfish galaxies hardly have dark clouds: galaxy cores, suns, planets, satellites. Therefore, one cannot think of a linear function of temperatures to that mass causing the radiation. The quantity of protocosms reaching to the second maximum of background radiation at 14.3 Kelvin is comparable completely to a part of that radius or that mass of universe (for example: 2.7/14.3 = 0.19; 19% of universe radius or mass).

After their anticollapse protocosms come to standstill. Only after it, the general attraction begins working leading to relatively small velocities of falling. Adjacent galaxies like Milky Way and Andromeda nebulum tell us about the real galaxy movement. They do not escape. Both galaxies come together with an approaching velocity of about $-1.8 \times 10^5$ m/s (see section 4.1.). We see the blue shift of the spectrum. This is the only proof of the general approach of all the installed galaxies. This can be only significant, if one can prove that all the other galaxies and their clusters have approaching movements. The expression of the apparent escape is only the reduction of the density of cosm in the course of elongation. All the protocosmic light excluding the never opened upper protocosms of n = 1 had to pass the areas of density reduction. While this operation it was shifted to the red.

Our hypothesis is supported by the projection of the opened center of the starting universe at the observed hemisphere:

Looking at the hardly broken homogeneity of background radiation of universe, we see back to the tiny opening state of protocosms in the center of universe - a concave projection at the hemisphere $\Sigma_U$ of the observed sky! This is why the horizon $r_o$ is above us.

Why is this reflection homogeneous? Our quantizing calculation gives a fine structure of protocosms in the center of each cosm: very much innumerable and very small but heavy protocosms are packed extremely dense. Their inside mass is small. So in the center of a cosm during the anticollapses (evaporation) of all these protocosms, the radiation results and also a giant central gas cloud is arising. Just another difference to the "Big Bang" theory is following relevantly: the well-known galaxies do not arise in this gas cloud but very much concentration bodies of smallest magnitudes do this! Our Galaxy isn't there. The central building keeps being a dark cloud, which surface has given the questioned background radiation into the universe matter having just elongation upward.

Each cosm is quantized! Above that cloud successively bigger protocosms had their anticollapse. New areas of concentration were installed becoming more similar to the receptacle cosm, because they took more magnitude. Finally, in next to last quantizing, the biggest but smallest protocosms could have an anticollapse in the proximity of the amplitude of their receptacle cosm. This looks like a tree was grown from its seed. It would have branches with multiple branching. In the course of this process, the universe won volumes. Only there, where matter was ejected, one can speak of a gas volume!

Largest dark mass does not only work in universe center meant to be general point of attraction. The fact that light signals of existing objects can be lost in packing of protocosms partially explains the invisibility of that mass necessary for proving of non-stationary universe. Because external protocosm masses $m_{(PK)}$ don't make a considerable light diversion, the existence of protocosms cannot be proved optically.

For each elongation, an intrinsic time of installed objects was given via intrinsic dilation. For each object born there, the new world-start was just there at installation. Along the reinstallation, the end of the world is coming for each object going down on elongation. The background radiation then isn't a relic of the "total explosion of universe" as assumed. But it is a living list – an information of the beings born before us, information of those beings born after us. It's a dense collection of birth signals. Different radiations show to their origins:

I. The background radiation of the central dark cloud and of the other protocosms
2.7 K = 5.3 mm; interval: 1 mm to 210 mm (14.3 K to 0.07 K);
millimeter-wave radiators (appear approximately full-coverage),

II. The radiation of those objects, which was already installed
infrared-wave radiators ($10^{-5}$ m),
laying above them, ultraviolet-wave radiators ($10^{-7}$ m),
X radiators ($10^{-10}$ m),
Gamma-radiators below the annihilation radiation ($10^{-11}$ m)

III. That gamma radiation coming free while the installation from sub-rate protocosms in the proximity of our Galaxy.

One should think about all protocosms are lifting their content up to an opening area with approximately light velocity while they are running along a curved track line in proximity to a circle arc in vacuum. This process of packed transport of isolated energy has to follow the external laws because the universal vacuum is the same for all the hierarchical spaces. In this state of tension (of relativistic distortion), the protocosm will be evaporating by its anticollapse, and it will install its own world. During this event, the velocity is rapidly decreasing from a tiny external mass to a giant inside mass opened respecting the momentum transfer by (2.7,1) or (2.10,23) in vacuum. Only the angular momentum of the subprotocosmic systems, which is packed inside of it, will be ejected to the outside (see section 3.2.4.).

The "space time" isn't simply exploded but it has been piled up in the shape of matter systems, which have been set free relatively resting and reflecting their appearing with the red shift dependent on the

density. Consequently, this is not the picture of “Big Bang" of a parallel philosophy of all the birth events! But this is the picture of the individual birth and the individual death to intrinsic times of the stellar worlds!

It seems as larger protocosms would be quite similar to the universe in such a measurement that the ejected background radiation is laying over the background radiation of the universe. Taking evaluation of COBE-satellite photos of background radiation, we count about 120 up to 150 of such spot concentrations of different temperatures.

Colder and large areas are covered of warmer and more differentiated areas. Even warmer radiations are giving homogeneity again. The smaller protocosm, which is internally lighter by (2.15,8), radiates an intrinsic and warmer background radiation in the interval of 1 mm, about 14.3 Kelvin down to $3 \times 10^{-5}$ Kelvin.

We guess the ejected mass M of a protocosm having the eight hundredth part of the universe mass, about $8 \times 10^{49}$ kg. This way, the model calculation can be adapted best to heaviest protocosmic inside masses of about $9 \times 10^{49}$ kg (see section 4.3.). All the expansive openings at later openings of protocosm centers can reflect just their intrinsic red shift on reason of their intrinsic density reduction.

By this measurement, protocosms are packing and transporting the outside, they are packing the blue shift, because just at this phase all the local things are falling into these protocosms! At the time of their installation, they are coming into a higher orbit to the complete n = 1. They seem falling from $n = \infty$ to n = 1. In this respect, they are emitting a quantized spectrum. At first their mass $M_{o(PK)}$ changes to $m_{o(PK)}$. That rest mass gets the momentum and wins with velocity of v to zero up to c. During this and according to the dilation equation (2.13.1,8), the rest mass $m_{o(PK)}$ will decrease to the movement masse $m_{B(PK)}$ and increase on the relativistic mass $m_{A(PK)}$. The difference of both masses according to equation (2.4,1c) $\Delta m_{(n)}$ is converted into the radiation energy $\Delta E_{(n)}$. Therefore, we must calculate with the highest forming rates of protocosms of the undermost rankings of the universe. Pictorially, these are the last branching of matter transformation as the finest branching of a tree.

At the reversion of their ways, in the central area of universe the decay of protocosms is beginning. Their level is falling down to lower n to n = 1. They are absorbing radiation quanta. Their anticollapse appears effectively visible by the sign of red shift. Resulting, one only can observe a red shift, which is caused by density in every universe pulse. The blue shift of the other observers never speaks about the end is near of the own world, because one cannot notice it! Only the own hour of the near end can be seen at the falling down of the intrinsic horizon when then the last light quantum will be hitting and be locked.

The observed red shift consists of components of its causes, there are

- the cosmogonic red shift in density reduction of matter with primary character at the protocosms: $z_P$,
- the gravitational red shift $z_g$ with secondary character,
- the Doppler red shifts as blue shifts $z_D$ caused by various relative velocities $\pm v_D$.

The total red shift z can be calculated with (1.1,4) into an apparent velocity $v_z$, if all the causes would be Doppler effects:

$$v_z = c \times [(z^2+2z) /(z^2+2z+2)] . \qquad \text{(/Q 12/, p 69)} \qquad (4.4,4)$$

The observer could have more precision setting together the velocity $v_z$ from the equivalence velocities $v_g$, $v_D$ and $v_P$ of the causes of their red shifts ($v_D$ and $v_P$ also make blue shifts). If the relationship of the causes could be made, he would get help with this addition theorem (1.1,4):

I: $$v_H = v_R + v_g /(1 + v_R \times v_g /c^2) \ , \qquad (4.4,5)$$

II: $$v_R = v_P + v_D /(1 + v_P \times v_D /c^2) \ , \qquad \text{II in I.} \qquad (4.4,6)$$

Distances

For Hubble number $H_T$, this equation is valid:

$$H_T = 1 / \tau_b^* = c / K^*_\gamma \, . \qquad (4.4,7)$$

Under these conditions, the Hubble number is referred to the idleness time $\tau_b$ (cf. 4.3,1) of the observed objects: 14 billion years, today one discusses down to 8 billion years. Don't forget: each object has its own idleness time independent on the total time of universe-oscillation!

All the starts running after the first-rate anticollapse in universe center and also in the centers of the biggest protocosms are laying themselves together with the extreme total red shift. They give us the impression of a simultaneous event, which is a wrong impression starting from red shift to find the beginning of the universe in waytime-like distance! Simultaneity of installation of complete cosm is an optical illusion! But there the projection of a surface section of installation is given to us (concave lens) in which a large part of past installations is emitting its red shift of the same value. This way, from point sources a spherical shell is arising, which inside is sending the background radiation. It appears almost homogeneous and isotropic. By this fact, relativity theory is confirmed in finite universe without replacement declining any simultaneity of installation processes in relationship to light, which does not cause the installation itself.

Currently, I mean in addition: If the gravitational red shift is a sign of evaporations of extremely many tiny protocosms, these amounts can be located in arbitrary distances, even relatively close to us. Such a fact would implicate that mistaken idea of inflation of universe, if you take into your account the Doppler shift as you do it with Hubble number. Mistakes don't end this way. I already suspected that in 1998! Let us go on:

We see the first-rate hottest and high-energy sputa of matter in the center of universe in a most blurry image meant to be the intensity maximum of background radiation. Continually, gamma ray bursts twitch at the firmament of annihilations! Such processes were running in the most homogenized matter center of universe. It was cooled at the surface in such a strong way that its content cannot be seen anymore. In this regard, the view of quantizing suddenly breaks. You cannot see the quantizing of objects in that hole between z = 6 and $z = 10^9$. The theory of "Big Bang" means to switch there the so-called "inflation" and the "symmetry break". This is mistaken, because it is a crutch of "Big Bang" without sense. Only the so-called "$7^{th}$ act - the epoch of light -" is realistic. This is the annihilation program after the very first anticollapse processes. But soon after this the "$8^{th}$ act" of big-bang-theory cannot be right, because galaxies didn't find together made from dust but they were born by the structures of more protocosms than those first in the center.

After annihilation of interacting matter at the surface of a protocosm electron-photons are emitted at about $5.9 \times 10^9$ K. This is made for all gas masses, no matter if they are deeper or more far at the surface. Overall the characteristic annihilation radiation comes free from the physically concentrated small subs. Only in the center of the protocosm, the process leads to form a gas ball appearing like an "explosion" in the "epoch of light". Next to the relativistic shift of the first protocosmic light for frequency shift under ignoring of the own spectrum shift at the receiver position, a local gravitational red shift is valid with 2 (80 % of $c_v$). It falls very fast. At the double horizon it amounts only just $z_g = 0.414$. In this area annihilation is still running. Only above of $1.125 \times r_o$ this radiation can appear. Below that radius, the system is made for collapse with change of mass to inside mass.

Star formations from protocosms in the proximity of our Galaxy and its halo give small red shifts of gamma ray bursts, so that there really measured gamma radiation energy can be watched. Though, all the primary fires may send only in small time periods (because they are arising primarily by anticollapses), then they had to pause. Following, during the forming of a new series of subprotocosms, they had to transmit again. Exactly seen, this event cannot happen at one and the same transmitter. This fact is confirmed by observations of gamma radiation research.

Finally, here are some words to explain the distances. Currently, one tries to qualify the red shift effect to be a stationary distance measurement in honor to Hubble. How shall this work? Does it work by thinking at "Big Bang" and at escaping galaxies?

Just as the first protocosms were installed above both universal central bodies, the elongation state of universe was measured with an essentially larger density. Emitted radiation had to become red shifted by reduction of density without any escape of galaxies by Doppler shift! But each large space area gives an analogous picture in which a first-rate protocosm was collapsing. Therefore, one cannot generally order the distance to the red shift. If one had a grid, which would make visible only this red shift arising along the density reduction of universe, one had a measurement of a feature of Hubble number. But this way, every anticollapse of each protocosm has got its own density reduction and so it transmits a radiation feature of overlapping. Clear order is impossible!

If we would stay with universal central radiation without local actions, then the density μ and the elongation R, where the object has its position, have the relationship of:

$$R \times \mu = R_o \times \mu_o \qquad R_1 \times \mu_1 = R_2 \times \mu_2 \qquad R_1 / R_2 = \mu_2 / \mu_1. \qquad (4.4,8)$$

If the density would cause the red shift linearly, then the linear Hubble term between red shift and the distance would be possible. But the temperature $T_2$ in relationship to the initial temperature $T_1$ are probably dependent on our equation (3.2.3,29):

$\mu_{1(\gamma)} / \mu_{2(\gamma)} = T_1^4 / T_2^4$ , from which we conclude for the incoherent system:

$$T_2 = T_1 \, (\mu_2 / \mu_1)^{1/4} . \qquad (4.4,9)$$

If one thinks now on base of an observation and of the Hubble term, the temperatures would be in relationship of 1:4 at red shift of z=5, then the radial distances to the universe center cannot have the relationship of 1:4 but with the forth root then with 1:1.414. This construction shows at least that the universe must be essentially denser than present observation made it be possible. Regarding the Virgo cluster, one seems wanting to correct the Hubble number with 1.6 in the year 1998, which would mean about $^2/_3$ of the opinion of distances in universe.

Amplitude of universe amounts about 5.6 billion light years. Along the curvatures of light we mean there would be larger distances. If the temperature of electron photons of the central gas cloud would have fallen from 4000 Kelvin down to 2.7 Kelvin causing the red shift of 1482, then this would give only the following distance relation of elongation:

$$\Delta R = 5.6 \times 10^9 \text{ ly} \times (2.7 / 4000)^{1/4} = 0.161 \times 5.6 \times 10^9 \text{ ly} = \mathbf{9 \times 10^8 \text{ ly}}.$$

**The "Big Bang" got stuck!** That center of the primary gas cloud had a radius of about one billion light years. Up to the amplitude about 4.6 billion light years would remain. In this radial intermediate space of 4.6 billion light years all the bigger quantized star systems are existing storing above the central dark cloud. Measured red shifts of up to z = 9 would give distance relations of 1:1.682 = 0.5946, then in the proximity of the above calculated number of $^2/_3$. The objects could be closer the center with more than $^1/_3$ than one could follow from optics. Relative distances between the stars are more complicated, so we don't want to try to explain them here. Only this should have been clear, now:

During the expansion of the central gas cloud along 1 billion light years the photons were decoupled observing today as grós of background radiation. They were just running along the installing space, which density was decreasing successively. During this process, they got their **cosmogonic red shift** dependent on installation time like all the other objects above the central gas cloud, too. After the phase of transmission of photons from the center, which mass would have more than $10^{50}$ kg, the gas was cooling. It started to contract. Because of the high density of the complete center, these events would have been covered in darkness soon: an impenetrable gas layer closes the view into the real existing center of universe. Just like this center, the big centers of galaxy clusters and also of the galaxies themselves are visible and comparable. Even a star locks its real core behind a cloud of gas, which is smaller and which has more heat because of inside radiation.

## 4.5. Universe as Ideal Transmissions

We assume ideal relationships of translation of all the real and stable cosms inside the generally valid vacuum of universe. Under the condition, the stationary vacuum would contain a limited spatial oscillation of matter, we have a mean to make conclusions to unknown cosms. Finally, all the starts and ends must be forming a sequence and must reflect a closed system. Constructing this system, the **revolutions** (**frequencies**) of real cosms have to be set into relationship. A second kind of ideal transmissions is possible with the **relationship of radii** (**amplitudes**). When the vacuum spheres dive into each other, then calculation of $\alpha_2$ would result. This would mean that both cosms would already reflect the inner contact of amplitudes. From this reason, we assume having to set radii into the relationship where internal relations after $\alpha_2$ would appear. If this would not be correct, neutrinos would have half the mass we calculated here.

In mechanics one sets diameter or revolutions into a sectional relation, e. g. for the perimeter of which a dimension of a measurement unit is given for comparison. Precise cosm system can be seen as ideal mechanism. The measurement unit of the waytime, the meter-second, was elected by mankind. Therefore, we must refer the spacetime-like magnitude of the finite universe according to that cosm amplitude $R_U$ and that frequency $f_U$ on this arbitrary **measurement unit** itself. Then the smallest and the largest amounts of those transmissions in the gearing reflect a stable relationship. There are:

$g^{\pm}$ - graviton, antigraviton;
$p^{\pm}$ - proton, antiproton;
$e^{\pm}$ - electron, positron;
$s^{\pm}$ - subtron, antisubtron (prediction of x-particle of quantum theory unknown stable cosm today;
$\nu_e$ - electron neutrino, electron antineutrino; p-neutrino deleted
U - universe.

Unless of these six cosms and their anticosms building up the complete hierarchy of universe, no other stable cosm types are existing! The relationships in ideal transmissions make the resting-energetic memory of the structures of stable electrogravitational particles. Calculating the mass of known particles with the mass of unknown particles, the equations of the calculation process are now as follow:

a) Relativity of Movement (Special Relativity) - Frequency of Oscillation Time

$$f_{(U)} = f_{(p)} \times 1\ \text{Hz} / f_{(g)} \quad \text{and} \quad f_{(U)} = f_{(e)} \times 1\ \text{Hz} / f_{(\text{unknown})} \,. \tag{4.5,1}$$

From this cohesion, the unknown frequency is following:

$$f_{(s)} = f_{(e)} \times 1\ \text{Hz} / f_{(U)} \,. \tag{4.5,2}$$

Frequencies one can set into relationships. But in 1998, the mistake was to set relationship of amplitude in the case of b). I discovered later, every way is a curved line here in universe. So it is a part of the oscillation length λ and so it isn't radial with R. In this respect, we have to correct this error here.

In the relationship of oscillation length, we find the cohesion as followed:

"b) Relativity of Oscillation Length (Common Relativity)

$\pi$R is a circle's bow for half a wave ½$\lambda_o$. That's one times the way on the circumference of the oscillation. Consequently, one meter of our measurement on Earth in no straight line but a curved line. In the ideal case of total curvature of our cosmos, one meter Meter is now to calculate as follows:

$$1\ m = \pi R_N \text{ (N as Nature) resp. } R_N = 1\ m/\pi \qquad (4.5,3)$$

We set it now into relationship of all the bow ways:

$$\pi\ R_x = \pi\ R_g \times \pi\ R_U\ /1\ m/\pi\ ,$$
$$R_x = \pi^2\ R_g \times R_U\ /1\ m = 9.99037177 \cdot 10^{-8}\ m \qquad (4.5,4)$$

For x, now we get the amounts of the electron neutrino with **1.97 eV/c²**. More data you will find below. As I thought in the past, the factor 1/1836,15 would lead to another particle, I was mistaken.

The electrograviton $q_g$ of the graviton g, we just calculated by (2.5,2). Consequently, the graviton has the mass of $m_g = m_q$. Because of (2.6,1), (2.4,12) and up to (2.4,24), we get the following magnitudes of both primary charges:

Electrograviton q and Graviton g or their Antiparticles

| | |
|---|---|
| $E_{gq} = 1.6710247 \times 10^{8}$ J , | $m_{gq} = 1.0429633 \times 10^{27}$ eV /c² |
| $m_{gq} = 1.8592657 \times 10^{-9}$ kg , | $f_{gq} = 2.5218538 \times 10^{41}$ Hz |
| $\tau_{gq} = 3.9653370 \times 10^{-42}$ s , | $\lambda_{gq} = 1.1887781 \times 10^{-33}$ m |
| $R_{gq} = 1.8919991 \times 10^{-34}$ m , | $M_{gq} = 2.5478634 \times 10^{-7}$ kg |
| $t_{gq} = 6.3110298 \times 10^{-43}$ s , | $e_o = 1.6021894 \times 10^{-19}$ C |
| $T_{gq} = 1.2100106 \times 10^{31}$ K , | $\bar{\mu}_{½} = 9.0877317 \times 10^{-45}$ Am² . |

They are the expression of the electrogravitation. But their real equal force can be found only in the isolated sphere of the primary cosms, primary "wheels" are turning there. In this respect, their isolated limit is determined by their isolated mass $M_{gq}$ or their isolated energy $E_{i(gq)} = 2.289905 \times 10^{10}$ J. These magnitudes cannot be solved into single subcosms, but into moved central points. This way, the isolated movement magnitudes remain there at the inside causing and determining the movement of matter from there by non-material action. After our definition of matter, the **anything moved** is there. Just like this fact, our explanation of the magnitudes of macrocosm leads to the outside, where the anything moved is given.

By the experimentally well-known relative resting masses $m_o$ of the proton $m_p$ and of the electron $m_e$, the survey of stable cosms can be completed additionally the unstable nucleon named neutron being stable in stable nuclei. They don't hit vacuum rest masses objectively, because we don't know our own velocity in vacuum exactly.
(remark: no sources were known by the author, which wouldn't have contradicted themselves quantitatively; therefore, he balanced all the saved constants and then he calculated the other from them.)

Neutron n

| | | |
|---|---|---|
| $E_n = 1.5053699 \times 10^{-10}$ J , | $m_n = 9.395705 \times 10^{8}$ eV /c² | |
| $m_n = 1.67495 \times 10^{-27}$ kg , | $f_n = 2.2718533 \times 10^{23}$ Hz | |
| $\tau_n = 4.4016927 \times 10^{-24}$ s , | $\lambda_n = 1.3195943 \times 10^{-15}$ m | |
| $R_n = 2.1001995 \times 10^{-16}$ m , | $M_n = 2.8282367 \times 10^{11}$ kg | |
| $\bar{\mu}_{½} = 5.0438843 \times 10^{-27}$ Am² . | neutron mass in kg | (/Q 11/, p 18) |

Proton

$m_p = 1.6726487 \times 10^{-27}$ kg
$m_p = 9.382796 \times 10^{8}$ eV /c²
$E_p = 1.5033017 \times 10^{-10}$ J
$f_p = 2.2687319 \times 10^{23}$ Hz
$\tau_p = 4.4077487 \times 10^{-24}$ s

$\lambda_p = 1.3214098 \times 10^{-15}$ m
$R_p = 2.1030891 \times 10^{-16}$ m
$M_p = 2.8321279 \times 10^{11}$ kg
$T_p = 1.0885602 \times 10^{13}$ K
$\bar{\mu}_{½} = 5.0508240 \times 10^{-27}$ Am²

Proton's resting mass in MeV /c² (/Q 14/, p 36)

Electron

$m_e = 9.10953 \times 10^{-31}$ kg
$m_e = 5.1100308 \times 10^{5}$ eV /c²
$E_e = 8.1872373 \times 10^{-14}$ J
$f_e = 1.2355901 \times 10^{20}$ Hz
$\tau_e = 8.0932991 \times 10^{-21}$ s

$\lambda_e = 2.4263100 \times 10^{-12}$ m
$R_e = 3.8615924 \times 10^{-13}$ m
$M_e = 5.2002189 \times 10^{14}$ kg
$T_e = 5.9284846 \times 10^{9}$ K
$\bar{\mu}_{½} = 9.2740833 \times 10^{-24}$ Am²

Electron's rest mass in kg (/Q 12/, p 18)

Universe

$m_U = 6.6326156 \times 10^{-69}$ kg hyp. to
$\lambda_U = 3.3324024 \times 10^{26}$ m
$R_U = 5.3036831 \times 10^{25}$ m
$M_U = 7.1422126 \times 10^{52}$ kg hyp. to
$f_U = 8.9962863 \times 10^{-19}$ Hz
$\tau_U = 1.1115698 \times 10^{18}$ s

$\bar{m}_U = - 6.6326156 \times 10^{-69}$ kg
$R_U = 5.6061172 \times 10^{9}$ ly
$E_U = 5.9610976 \times 10^{-52}$ J
$\bar{M}_U = - 7.1422126 \times 10^{52}$ kg
$K_o = 17,612,136,668$ y

Subtron

$m_s = 1.0125878 \times 10^{-12}$ kg
$m_s = 5.6801558 \times 10^{23}$ eV /c²
$E_s = 9.1006856 \times 10^{4}$ J
$f_s = 1.3734446 \times 10^{38}$ Hz
$\tau_s = 7.2809636 \times 10^{-39}$ s

$\lambda_s = 2.1827779 \times 10^{-30}$ m
$R_s = 3.4739990 \times 10^{-31}$ m
$M_s = 4.6782658 \times 10^{-4}$ kg
$T_s = 6.5899244 \times 10^{27}$ K
$\bar{\mu}_{½} = 1.6686462 \times 10^{-41}$ Am²

Electron neutrino now correct with newer constants

$m_{νe} = 3{,}5199405 \cdot 10^{-36}$ kg
$m_{νe} = 1{,}9672894$ eV /c²
$E_{νe} = 3{,}1635647 \cdot 10^{-19}$ J
$f_{νe} = 4{,}7743447 \cdot 10^{14}$ Hz
$\tau_{νe} = 2{,}0945284 \cdot 10^{-15}$ s

$\lambda_{νe} = 6{,}2792375 \cdot 10^{-7}$ m
$R_{νe} = 9{,}99037177 \cdot 10^{-8}$ m
$M_{νe} = 1{,}3458054 \cdot 10^{20}$ kg
$T_{νe} = 22.908$ K
It has no e. m. field, no magneton! Deleted.

In good approximation to $R_n$, Hofstadter found a hard core at nucleons (potential peak) of $2 \times 10^{-16}$ m radius. It would be surrounded by electric charge clouds (cf. sections 2.13.1. and 4.8.).
(/Q 7a/, p 208 and /Q 12/, p 236; illustration 5.2.2-2)

Following observation or experimental results agree well with these theoretic values of stable cosms:

1. The nucleon radius of $R_p$ and $R_n$ calculated by us to $2.1 \times 10^{-16}$ m is in the proximity of the breadth of the charge potential of Hofstadter's measurements. Our theory demands for integer charges of protocosms of a proton: + - + and of a neutron: - +. They are shown here being charge clouds observed by Hofstadter. Nothing else than the hypothesis of charge density relationship indicates necessity of third charge constructed by Gell-Mann's "Quarks Theory". The charge density must not equal inevitably the elementary charge made by third.

2. The electron amplitude $R_e$ agrees with the model of "QED" starting from a building named "vacuum polarization field" in its extending of about $10^{-13}$ m. We see this "field" meant to be the protocosm quantizing inside of the real electron mass block (see section 4.8.). (/Q 14/, p 56)

3. Our prediction of a subtron to be a real subparticle of the resting energy of $E_s = 0.57 \times 10^{15}$ GeV is close the prediction of GUT (this is a wavequantum theory) referred to a so-called X-boson (this is a wavequantum for pair formation of subtron-pairs s/~~s~~) with the wave energy of $10^{15}$ GeV. (/Q 14/, p 91)

4. We share the expectation of an easy cosm of only about 20 eV rest energy with the experimental results and the evaluation of the SN 1987 A having conclusion of an electron neutrino rest energy of about 10 eV (experimental evaluations listed 2 eV today). (/Q 14/, p 36) Now 1,97 eV.

5. Deleted

6. Here the calculations are giving the universe pulse ($K_o$) of 17.6 billion years, the radial extension of universe maximum of 5.6 billion light years (1 ly = $9.4605284 \times 10^{15}$ m) and the maximum of isolated mass up to about $10^{53}$ kg. In the most general shape, they agree with the estimation of a cosm age of about 8 up to 14 billion years and its visible mass of about $10^{52}$ kg.

First, we even showed in section 2.8. that density must be higher caused by curvatures. In this regard, objects are closer and universe is younger. Estimated Hubble number of about 40 to 50 is much too small. Second, there are very much small stars covered in the dark gas shell. Some light is intercepted by protocosms. Third, we showed in section 2.12. that we are not eternally in amplitude situation, so that we only can see or observe some part of that amplitudical mass. The other part is already packed away by protocosmic formations.

## 4.6. Nuclear Force as Binding of Oscillation Spheres of Cosms

Corresponding to the statement of Max Born, today one asserts that “particles" would have a “position probability". We showed clearly in section 2.11: wavequanta are dependent on interaction probability! Real particles are geometrically limited cosms. As soon as the end of a cosm is reached, the probability seen today as "infinite" finds its end there. The curved field of any spacetime has its end there. Nuclear force remaining unexplained until today is our proof. Why does the nuclear force - the so-called strong force - end abruptly when protons could rotate around neutrons on orbits and vice versa? Why don’t you find there such a "position probability" of protons diverging to infinite? Problems are better solved by interaction probability of wavequanta. Particles are far of that calculation.

Nuclear force starts with overlapping of vacuum spheres $\Sigma_x$-$\Sigma_y$. It ends at the partial congruence of the oscillation spheres $\Sigma_{ox}$-$\Sigma_{oy}$ of two nucleons at least! This means that the internal relativistic distance $R_{rot}$ of cosmic masses m and M is acting decisively. Then it even determines the velocity of the common rotation $v_{rot}$. From the outside, someone only notices the distances of vacuum spheres measured with amplitude numbers. Between $r_o$ and $R_o$, the **vacuum sphere** of the cosm is given. It represents the upper part of the cosm radius $r_o$.

1. If two cosms are separated by vacuum and if their distance r, measured from central point to central point, is larger than $4R_o$, then only their external masses $m_o$ are acting to each other by their accelerations $a = G_v \times m/r^2$ (additionally the electric charges and momenta are forming faces). Meeting their momenta $p_{(n)}$, they have importance (cf. eq. (3.2.4,1)).

The separations only can be conceivable as related to gravitational center even if the internal mass is structured and so it has intrinsic centers of gravitation. Mass properties are congruent in each cosm. This means: the gravitational center $S_M$ of the internal mass $M_o$ becomes congruent to the gravitational center $S_m$ of its intrinsic external mass $m_o$. Another mass $m_x$ only takes part at the internal mass $M_y$ if it has come below that oscillation sphere $\Sigma_{oy}$ with its gravitational center $S_{mx}$. Then we speak of the coupling constant $\alpha_3$. If it has even underrun the vacuum sphere $\Sigma$, then the external and the internal mass are acting onto each other. Coupling constant $\alpha_2$ is valid now. If the gravitational centers remain externally of both vacuum spheres, then only the actions of the external masses are valid using coupling constant $\alpha_1$.

The observer Jo living in his cosm $x^+$ must be localized in the gravitational center $S_{Mx}$ or $S_{mx}$. That equally heavy and equally large cosm $y^-$ comes close to him. As long as its central point $S_{my}$ has not reached a point below the sphere $\Sigma_x$, the external relationship with the coupling constant $\alpha_1$ is valid. Jo observes the external relationships. He can measure the masses $m_x$ and $m_y$ by the accelerations of $a_x$ and $a_y$:

$$\alpha_1 = a_x / a_y = G_v \times m_x \times r_y^2 / G_v \times m_y \times r_x^2$$

$$\alpha_1 = m_x / m_y \,. \qquad (4.6,1)$$

In this case, the size of $\alpha_1$ is 1 as follows $\alpha_1 = 1$, because the distances of gravitational centers are equivalent. Special relativity of both external masses in agreement of moving referred to vacuum is the same. It doesn’t change anything at proportionality of $\alpha_1$. Momenta are transmitted acc. to eq. (3.2.4,1). If one of both masses is able to be localize by the observer, e. g. the mass $m_y$ getting a relative resting location, the second mass $m_x$ must be meant to be a relativistic mass $m_{Ax}$ shifted by orbit velocity. The constant $\alpha_1$ corresponds to the relativity factor $f_{SRT}$.

2. Now the mass center runs down below the oscillation sphere $\Sigma_{ox}$. Jo is the owner of the internal mass now. He observes the other external mass $m_y$ referred to the mass $M_x$ rotating in the sky although it is certainly rotating. This means that the isolated mass $M_x$ works at the external mass $m_y$. The distance r is smaller than $2R_o$ and larger than $1R_o \Rightarrow$ **closing of vacuum sphere** of each

the other external central point of mass has happened: $1R_o \leq r \leq 2R_o$. Now the term can be written as follows:

$$\alpha_2 = m_y / M_x << 1 \quad . \qquad (4.6,2)$$

For the other observer in cosm $y^-$, his relationship would be reversed:

$$\alpha_2 = m_x / M_y << 1 \quad . \qquad (4.6,3)$$

If two cosms meet together, $\alpha_2$ is valid, too. The momentum is transmitted at the masses magnetically. From time to time, radiation energy is enough for more movement energy of protocosms acc. to eq. (2.4,14) but even of their pair forming according to eq. (2.4,52).

3. Now the mass gets below the radius $R_o$. The distance r is shortened down to $r < 1R_o$, and the isolated masses $M_x$ and $M_y$ are acting onto each other directly. We write for them:

$$\alpha_3 = M_x / M_y = 1 \quad . \qquad (4.6,4)$$

In this case $\alpha_3 = 1$ . Also here, the isolated relativity of movement doesn't change anything at the proportionality of $\alpha_3$.

This isolated state represents - taken for itself - a state similar to an external state again.

Because under the gravitation radius $r_o$ of the one cosm, the other cosm is disappeared. This other cosm means now to be external relatively to the other internal subcosms of the one cosm: internal masses are interacting now thinking they are external to each other. But their rotations remain locked below their horizons. For such a rotation movement, which we cannot notice externally, we created the name **phenomenal rotation.**

At cosms of unequal gravitation, the same three relations are valid that relative impression of falling into each other will be determined by the metrical magnitudes of the cosm. This way, one thinks to be allowed assuming the electron would fall into the atom nucleus, for example into the proton of hydrogen. But this process is relatively reversed by the fall of the electron to the proton. In the next step close the proton, this electron is 1836 times larger than the proton so that this proton falls into the electron. Surely, this event is dependent on the elongation states of both. However, now the masses of both particle-protocosms meet each other and form protocosm pairs within an exclusively isolated balance, perhaps there are already made gravitons and subtrons. Now the equation (3.2.4,2) is only valid for the relationships of isolated momentum transmissions. The momentum exchange between isolated masses cannot be noticed at the outside of the reacting systems when it is running between the isolated masses of two particles meeting temporarily below a common vacuum sphere. Then, after their separation and after their change of the isolated mass parts of each particle, the external balances must be made by the equation (2.7,1).

If now with our theory the gravitational coupling can be explained just like the electric coupling, then the coupling constant $\alpha_2$, which makes couple the **oscillation sphere** ($\Sigma_{ox}$-$\Sigma_{oy}$), must work by these bonding processes, maybe there are primary cosm bonding or secondarily wavequantum bonding. $\alpha_2$ is a quantum specific constant.

1. External gravitational and electric masses are coupling with $\alpha_1 = 1$.

2. Oscillations spheres are coupling with $\alpha_2 << 1$.

3. Isolated gravitational and electric masses are coupling with $\alpha_3 = 1$.
   A relationship to the outside (referred on $m_o$) does not still exist anymore.
   The new inside now is relatively an outside.

For the coupling of electric primary cosms, so of the elementary charges graviton $m_g$ and electrograviton $m_q$ being $e_o$-equivalents, the equation (4.6,2) is valid in the form:

$$\alpha_{gq} = m_{gq} / M_{gq} \qquad (4.6,5)$$

$$\alpha_{gq} = d / M_{gq}^2 \quad \text{with } \alpha_{gq} = 1 / 137.0360002 = 7.29735251 \times 10^{-3} \; ; \qquad (4.6,6)$$

$$\alpha_{gq} = E_{gq} / E_{o(gq)} \; . \qquad (4.6,7)$$

This is the coupling constant of a feature of $\alpha_2$, discovered of “Quantum Mechanics" and marked with Sommerfeld's fine structure constant:

$$\alpha_{gq} = e_o^2 / (2 \times \varepsilon_o \times h \times c) \qquad (4.6,8)$$

with the electric field constant $\varepsilon_o$

$$\varepsilon_o = 8.85419 \times 10^{-12} \; C^2 / Nm^2 \; . \quad \text{(cf. /Q 11/, S. 221)}$$

This constant, which is also now an **electrogravitational field constant**, is calculated here by the equations (4.6,6), (4.6,8) and (2.5,9) from the masses of gravitons and electrogravitons, for cosms:

$$\varepsilon_o = M_{gq} \times m_{gq} / (2 \times k_q^2 \times h \times c) \; . \qquad (4.6,9)$$

The coupling constants force the compliance of wavequantum levels, here the level n = 1 at first. Unless the primary coupling constant $\alpha_{gq}$, coupling constants between all stable particles are given:

$\alpha_{gq}$ between gravitons on the one hand and antigravitons on the other hand, between electrogravitons and electroantigravitons,

$\alpha_{gs}$ between gravitons and subtrons on the one hand like between their antis on the other hand,

$\alpha_{ss}$ between subtrons on the one hand like between their antis on the other hand,

$\alpha_{pp}$ between protons on the one hand like between their antis on the other hand,

$\alpha_{pe}$ between protons and electrons on the one hand and between their antis on the other hand and reversed (between nucleus protons and shell electrons first the primary coupling constant on wavequanta is valid, because this coupling is determined being the electrition of both particles less being the sphere overlapping),
This sequence can be continued to all cosm combinations of protons, electrons and electron neutrinos inclusively neutrons, muon and tauon neutrinos, and of unstable particles, but not between protocosms, subprotocosms etc.

Overview of some amounts of coupling constants
(in the equation at the right side, the exchangeable state of observer position of Jo is shown):

| | | |
|---|---|---|
| $\alpha_{gq} = m_{gq} / M_{gq}$ | $= 7.2973525 \times 10^{-3}$ | **e. m. effect** |
| $\alpha_{gs} = m_{gq} / M_s$ | $= 3.9743389 \times 10^{-6} = m_s / M_{gq}$ | |
| $\alpha_{ss} = m_s / M_s$ | $= 2.1645344 \times 10^{-9}$ | |
| $\alpha_{gp} = m_{gq} / M_p$ | $= 6.5647422 \times 10^{-21} = m_p / M_{gq}$ | |
| $\alpha_{sp} = m_s / M_p$ | $= 3.5753390 \times 10^{-24} = m_p / M_s$ | |
| $\alpha_{ge} = m_{gq} / M_e$ | $= 3.5753390 \times 10^{-24} = m_e / M_{gq}$ | |
| $\alpha_{se} = m_s / M_e$ | $= 1.9472280 \times 10^{-27} = m_e / M_s$ | |

$\alpha_{pp} = m_p / M_p = 5.9056814 \times 10^{-39}$ **nuclear force**

$\alpha_{pe} = m_p / M_e = 3.2163966 \times 10^{-42} = m_e / M_p$

$\alpha_{nn1} = m_{ne} / M_{ne} = 6.4852745 \times 10^{-55}$

$\alpha_{nn2} = m_{np} / M_{ne} = 3.5320684 \times 10^{-58} = m_{ne} / M_{np}$

$\alpha_{nn3} = m_{np} / M_{np} = 1.9236598 \times 10^{-61}$ and much more.

Let us examine how much the force of coupling is determined by $\alpha_2$. Because of the analogy to eq. (3.2.3,46), it is valid:

$$F_2 = G_v \times M_o \times m_o / (k_r^2 \times R_o^2) \quad ; \tag{4.6,10}$$

$k_r$ = distance factor for $R_o$ ; $1 < k_r \leq 2$ .

With the eq. (3.2.3,51) and (2.15,7) we can change into:

$$F_2 = G_v \times K_{Pl}^2 \times \alpha_2 / k_r^2 \quad ; \tag{4.6,11}$$

$$\alpha_2 = F_2 \times k_r^2 / F_o \quad . \tag{4.6,12}$$

The constant $\alpha_2$ represents an isolated force relationship to the maximum force constant $F_o$ in relations to the distance factor of the gravitational centers $k_r$! $\alpha = \alpha_{gq}$, it is an electrogravitational constant. With such an exchange the gravitational force $F_1$ can be represented at the external field; but the isolated force $F_3$ can also be represented like this:

$$F_1 = G_v \times m_o \times m_o / (k_r^2 \times R_o^2) \quad ; \quad k_r > 2 ,$$

$$F_3 = G_v \times M_o \times M_o / (k_r^2 \times R_o^2) \quad ; \quad k_r \leq 1 ,$$

from which the following relations are coming:

$$F_1 = \alpha_2^2 \times F_o / k_r^2 \quad ; \tag{4.6,13}$$

$$F_2 = \alpha_2 \times F_o / k_r^2 \quad ; \tag{4.6,14}$$

$$F_3 = 1 \times F_o / k_r^2 \quad . \tag{4.6,15}$$

These three forces $F_{1;2;3}$ can be set into external and isolated relations; a constant $k_r$ is assumed.

$$F_2 / F_1 = F_3 / F_2 = 1 / \alpha_2 \quad , \tag{4.6,16}$$

$$F_3 / F_1 = 1 / \alpha_2^2 \, . \tag{4.6,17}$$

If we set the calculated nucleon magnitudes of an initial solution of nuclear force problem (strong force), then we get a feature of $\alpha_2$, e. g. referred to a chain-link of that atomic nucleus in the shape of a quasi-deuteron being in that state in which the neutron hasn't yet given free isolated energy for bonding:

$$\alpha_N = m_p / M_n = 5.92197 \times 10^{-39} , \tag{4.6,18}$$

$$F_N = \alpha_N \times F_o / k_r^2 \quad . \tag{4.6,19}$$

The coupling constant of nuclear force now corresponds approximately to the proton-neutron-coupling constant $\alpha_N$.

Because of (4.6,13), (4.6,16) and (4.6,18), the **nuclear force $F_N$** as a vacuum sphere force $F_2$ has the relationship to the externally acting **gravitational force $F_{grav}$** of these nucleons $F_1$ as follows:

$$F_N : F_{grav} = F_2 : F_1 = 1 / \alpha_N$$

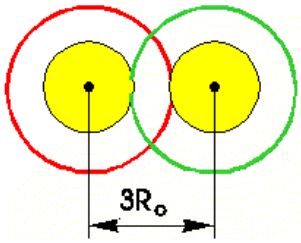
$$\mathbf{F_N : F_{grav} > 1.689 \times 10^{38} : 1} \quad . \qquad (4.6,20)$$

This amount agrees with the experimentally confirmed range of values (cf. /Q. 14/, p 21, illustration 5). No other theory could derive this amount from itself in this form.

Each coupling constant $\alpha$ has to be the expression of the mass relations or the force relations.

Other particles couple under each other with bigger forces, like their coupling constants say! Entry force equals the exit force! When no event happens during coupling, then the coupling falls out of each other after wandering through the larger cosm in complete energy balance. But we can hardly think of such an event, if both internal mass parts have already touched each other. Obviously, then each intrinsic mass has got a win of internal mass, and it radiates an external surplus to the outside. From this moment, the common building is missing that energy, which was emitted before coming apart of each other. Now they have to bond. A proton will be stopped in the electron with a force that is 1836 times bigger than the nuclear force between nucleons. Nevertheless they could come apart if at the inside their protocosms wouldn't make a reaction, which we call "weak force" historically, although it is not weaker than the "strong force", but it is more rare (cf. newer book TBAIII).

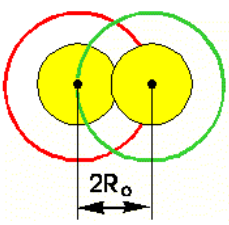
Illustration 4.6;1: Outermost Reach of the Inner-Cosmic Forces Between Two Nucleons $\alpha_2$




Here the cosms are still in external relationship, although protocosms already come below the horizon $r_o=2R_o$, here $2R_N$, and inner forces are essentially increasing. This is the beginning of the "strong force". The gravitational centers of the top protocosms $m_{PK}$ are coming into the gravitational field of each of the internal mass $M_N$ and meeting there already the upper protocosm mass $m_{PK}$, which is close to the total cosm mass $m_N$. This way, this force is also combined of a multiple number of vectors and sub-vectors.

The gravity center of the external mass $m_N$ can fall down to the horizon $2R_N$. As long as it continues, it is relatively at the outside. Then its top protocosms have already reached the distance of $1R_N$, where "strong force" has become its maximum. If now the above called gravity center would fall completely down below the horizon, the internal forces would work by $\alpha_3$. These forces would force each other particle into the system of the intrinsic elongation. In the nucleon, the main force $F_3$ determines all the relationships now. The electric force is subordinated.

Illustration 4.6;2: Area of Effective Reach of the Inner-Cosmic Forces Between Two Nucleons $\alpha_2$




Then, nuclear force is decreasing while exceeding of the distance of both gravitational centers of

$1R_N = 2.1 \times 10^{-16}$ m up to $3R_N = 6.3 \times 10^{-16}$ m

(cf. illustration 4.6;2), because it goes over into the electric attraction of the elementary charges $\pm e_o$ below the amplitudes $R_p$ and $R_n$ at the flank of the horizon.

Experimentally, the nuclear force radius of a nucleon was discovered at the amount of about 1.1 Fermi (1 Fermi = $1 \times 10^{-15}$ m), because there are distances of forces (cf. section 4.9.). Repulsion presses the charges into the outermost position. While the centers of the internal masses appear in the distance of the maximum of $2R_p$, the positive charges rotate around half the proton amplitude $½R_p$. The actions are added. We found, there are five proton amplitudes $R_p$ for d. This is the apparent "nucleon interaction radius" as currently observed and assumed by science (one Fermi):

$d = 5R_p = 1.05 \times 10^{-15}$ m.

## 4.7. Unity of Forces

### 4.7.1. Relativity Below the Vacuum Sphere

At the outside of the electrogravitational cosm horizon $r_o$, those isolated electric charges $N \times e_o$ and the electromagnetic momenta $N \times \bar{\mu}_{½}$ of the finite number of protocosms are acting continuously, which haven't got a compensation at the inside of this spacetime. At the ideal oscillator named microcosm, these actions are **locked or closed by force**. They are reflected to the outside absolutely non-relativistically. Only a scattering, which energy is working to the isolated inside, can reflect the internal relativity to the outside! At the isolated inside, relativistic charges or/and masses are working. This is the reason why one thought of an electron charge diverging to infinity and why one derived a theory of "vacuum polarizing" from this ($1 \times 10^{-13}$ m). While those protocosms are moved relativistically in cosm and while this special relativity is working referred to the isolated system, externally of the locked system named cosm, the projective reflection only appears - the soul of the isolated relations!

At oscillation sphere coupling of electrogravitational cosms, below the horizon $r_o$, the relativistic magnitudes of the elementary charges $\pm e_o$, the gravitational charges $\pm m_o$, the gravitomagnetic and electromagnetic fields $\pm e_w$ and $\pm m_w$ are working. Therefore the compensated amounts can be noticed after underrunning that metric. Consequently, the relativistic electric charges $\pm e_A$ acc. to eq. (2.12,14) and their wavequantum energies $E_w$ of protocosms of proton or of electron have a multiple number of their rest charge. "QED" like also "QCD" were building up their knowledge of "vacuum", which does not meet the real vacuum at all. In reality, in the two quadrupole systems, the charge clouds of protocosms are laying face by face. They are moving to each other, exceed the maximum point of their movement at the height of the maximum elongation and dive up then at the other side. The reversed polarizing of the charge clouds is kept for half a turn. In transition close to the elongation of zero, the protocosms change their side again. This way that compensated system seems to be like the "virtuality" of "photons" with the assumption of "QED". But our theory only finds this consequence of reality below the vacuum sphere:

> The electron protocosms $PK_e^{\pm}$ are simply charged electrically (see section 2.13.). Locally they are compensated up to the rest of one single negative charge $-e_o$ of the electron $e^-$ (or $+e_o$ of the positron $\bar{e}^+$). This phenomenon lays inside of the electron cosm ($r < 2R_e$), and it ends at the electron radius $R_o$ of $R_e = 3.86 \times 10^{-13}$ m.

We cannot confirm the thinking of "QED", which finally finds the elementary charge $-e_o$ from divergences. That working of "QED", we see as an empiric terminology coming into the proximity of reality with approximation calculus, comparable to the believe of Christopher Columbus (1451-1506), he would have reached India as he landed on the American ground. Now it is the year 2021. Experiments with muons have shown that their g-2 magnetic momentum is not predicted precisely by "QED".

At the inside of an electron, all its protocosms are forming the mass block (see section 2.13.). In the case of symmetry, each cosm sentence is compensating the gravitomagnetic and electrostatic magnitudes. In principle, a certain surplus of an e. m. momentum remains standing there, ever after which place in cosm sentence keeps **unoccupied** by one or more protocosms causing asymmetries. This magnitude makes the theoretic magneton including the "gyromagnetic momentum" finally measured and calculated with approximation calculus by "QED". The result at electron is the negative charge $-e_o$ and the photon potency $e_w$ - the e. m. momentum of the electron $\bar{\mu}_e$ (cf. eq. (4.8,5)). If the mass block is disturbed by defect positions or anticollapse processes of protocosms, then larger differences remain like in proton and neutron. The isolated inside of the cosm looks like a "charge cloud" of contrary signs and like a "photon" cloud of contrary magnetic signs. This "cloud" is strictly spatially quantized, but it is finite. From this state one can conclude on interacting of electromagnets from which finally the gyromagnetic momentum of electron was arising from calculations of "QED" (see section 4.8.), because the external actions only exist above of $3.86 \times 10^{-13}$ m at external charges!

If one would measure charge distribution exactly at the amplitudical state of a cosm, then one would get the picture of that "charge cloud" called by "QED". Because of the oscillation of the cosm there is not a continuous state of amplitude but a sine function of about 0.707 of the amplitude $R_e$. But also

here the density of protocosms is shifted to the central point of the cosm of R = 0 caused by idleness time. In measurements of magnetizing actions of protocosms, an area is becoming very probable, which lays inside of the maximum perimeter of 0.7 $R_e$. This would be the extending of “vacuum polarizing" of “QED": “about $10^{-13}$ m". (/Q 14/, p 56)

“QED" asserts “vacuum polarizing" supplied by results of scattering experiments with electrons. One noticed that the charge would increase essentially below that "polarizing" area, which we give protocosms in this locations. This effect of so-called “naked charge" is only the result of relativity at the inside acc. to our theory. Although “QED" now made a theory from its measurements, which do not reflect reality correctly, the calculation was correct apparently. QED-scientists do not know the fact of cosmic property of electron! But now, the correction may be a little procedure. **So there neither the assumptions of "QED" of “vacuum" nor “polarizing of vacuum", nor “virtuality" of “particles" are existing in reality. All these self-willed termini disappear in relativistic theory of the real cosm-like particles of our theory.**

"QED" explains the environment of our first thinkable negative protocosm charge in the center of the electron cosm using the concept of virtual photons" like also “virtual electrons/positrons". One thinks of them being a “charge cloud of virtual photons", which would shield the real charge of the electron, which would diverge to infinite. But here one had to take into account the actions of the electrically charged protocosms and their electrogravitational magnets. The real vacuum polarizing and their consequence - the vacuum magnetizing - are so small dimensioned that every case was impossible to find them by chance until now.

Real vacuum cosms are **magnetized** transferring energy in principle. According to our theory, photons cannot be electrically charged (see section 2.14.).

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## 4.8. Magnetic Momenta

Calculation of the ideal electro-magneton of BOHR as $\bar{\mu}_{½(n)}$, $\bar{\mu}_{½(p)}$ and $\bar{\mu}_{½(e)}$ corresponds to the equation (2.12,6):

$$\bar{\mu}_{½(GK)} = e_o \times c \times R_w = e_o \times c \times ½R_{o(GK)} \; . \qquad (4.8,1)$$

Niels BOHR (1885-1962) referred those magnetons onto the rest mass of the particles. But we found in section 2.13.1 that the mass $m_o$ is the expression of the oscillation function along $½R_o$. From both opinions would result that the point mass and the point charge would rotate on the same curved line of that radius$½R_o$. Deleted. But the real oscillation processes cannot reflect the reality completely. Especially high deviations from theoretical magneton of BOHR are given at proton momentum, which is about three times larger than one magneton. Neutron momentum reaches almost two times larger than theoretical prediction:

| Proton | Neutron | Electron |
|---|---|---|
| $2.7 \times \bar{\mu}_{½(p)}$ | $-1.9 \times \bar{\mu}_{½(n)}$ | $-1 \times \bar{\mu}_{½(e)}$ . |

The electron has a theoretic electromagnetic momentum according to eq. (2.9,28) and (4.8,1) of

$\bar{\mu}_{½(e)} = 9.274015408 \times 10^{-24}$ Am² or J/T, BOHR's magneton of electron of newer sizes.

Amounts of measurements were as followed (1998 still valid):

| | | |
|---|---|---|
| $\bar{\mu}_e = (-1.001159652410 \pm 2 \cdot 10^{-10}) \cdot \bar{\mu}_{½(e)}$ | (Anomaly) | (/Q 6/, p. 139) |
| $\bar{\mu}_e = -9.2847647043 \cdot 10^{-24}$ J/T | real from Wikipedia, 2021 | |
| $g_s = -2.00231930436256$ | Wikipedia | |
| $½g_s = -1.001159652$ | | |
| $\bar{\mu}_\mu = (-1.001165924 \pm 9 \cdot 10^{-9}) \cdot \bar{\mu}_{½(\mu)}$ . | (Anomaly) | (/Q 6/, p. 145) |

These are so-called gyromagnetic momenta. Deleted. With a theory of rotating particles charged at their surface, for the neutral neutron no simple connection can be found explaining its internal electromagnetic momentum. (/Q 12/, p 236) Deleted. In the same sense, a dot-like electron cannot rotate around itself. Such a thought must remain nonsense.

Deleted. In the illustrations 4.8;2 and 4.8;3, one can recognize clearly the constituents of charges from which one tried to conclude on the apparent existence of “quarks": the negative charge in proton is taken into the pliers by two positive charges. From this, a partial shielding results, which especially meets the negative charge.

In neutron both contrary running negative charges are shielding both positive charges running together, which are acting like a hard positive core (as if there were $+^2/_3$). Our distribution principle is more coupled with the ascertainment of charge distribution of HOFSTADTER. The scheme was renewed in 2020. In neutron, we now find the antineutrino-body $\bar{\nu}_e$-R and the top-protocosm of the electron $PK_e^-$.

On that location where the charges are rotating, there is the common center of charges. It is interesting that the internal mass center is not the external mass center. The internal gravity center is located in the middle of the cosm. The external mass gravity center is on the location of the charge effect center. This is caused by the reflection of the internal oscillation from the drawing of the rotation of the protocosms, which disturb the internal symmetry of all those protocosms.

Here, Q represents the charge density of positive (+) and negative charge (-) as well as X represents the measurement of one distance of $X \times 10^{-16}$ m. /see Q 7a, p 209, illustration 251/

The first positive maximum is at $2 \times 10^{-16}$ m, where we have examined the amplitude of protons and neutrons. With that assumption of “quarks", the charge addition has to be understood like this:
udd, $^2/_3$ $-^1/_3$ $-^1/_3$ $e_o$. But we are not dependent on "quarks", because of the above shown cohesions.

Illustration 4.8;2: Parity Orbits and Charges, idealized, Scheme from the year 2020

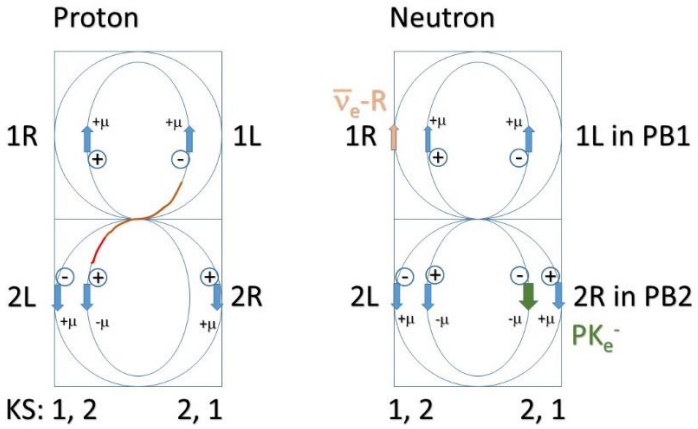
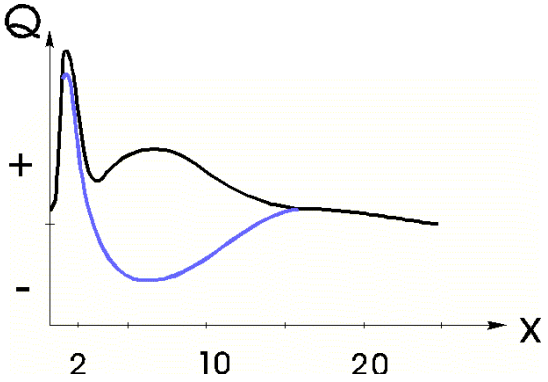



Illustration 4.8;3: Charge distribution of proton (black) and neutron (blue, rest black)

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In the electron, one single top-protocosm determines the charge as well as the mass and the elementary magnetic field of that microcosm. Imagine, starting from the center, the contrary charged PK distributed in the space rotate according to the laws of quantization of Niels Bohr. We have drawn here a small section. Naturally, on the other side of the space, many further PK are moved around the internal mass gravity point (red) so that their internal charges and magnets are compensated. Together with the above pictured PK-examples, they make the internal massblock. It cannot act to the outside. The massblock is totally compensated. Only the differences act to the outside simulating an oscillation by their movement.

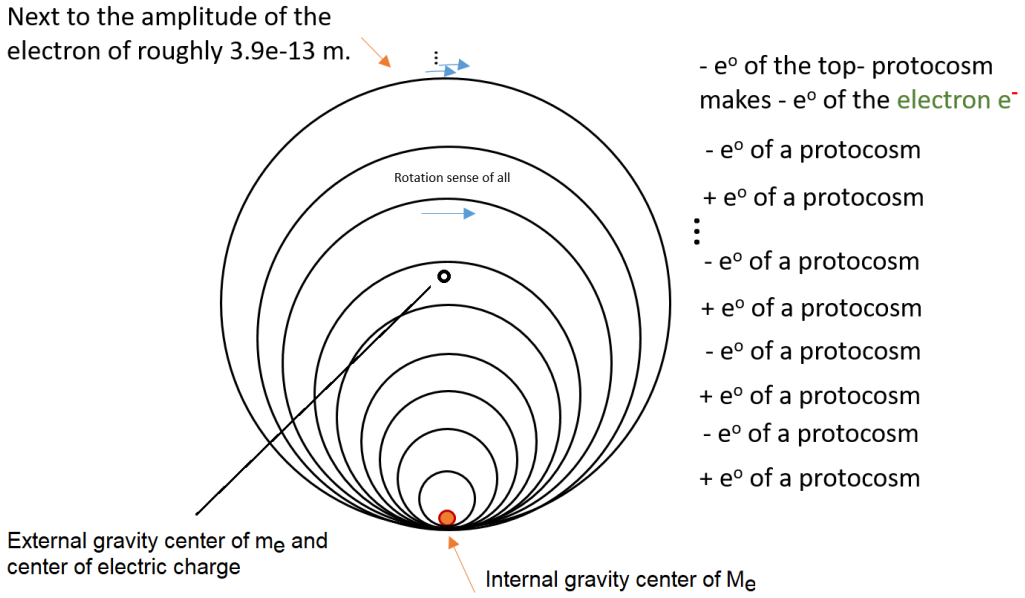
Actually, the difference to all the other contents of the massblock makes the external mass of the electron, its external mass gravity center (black circle) and its externally really measurable magneton, which is slightly larger than the theoretic one related on the mass. How is this possible?

Protocosms as every other cosm have a spatial extension. They consist of sub-PK etc. From this cohesion, a chain results made of shifts of electrically elementary charges to the outside so that it rotates really on a larger track than the mass of that protocosm, which determines the electron. This deviation first is greater with the top-SPK in the top-PK of the electron. But in the top-SPK another top-SSPK is located hierarchically, too. So it continues to a limited magnitude to the smallest but heaviest particles of matter. Actually, we find a system of steps that causes all the deviations but not only spatially, also dependent on the speed of the PK and their following time of idleness. All factors together lead to this gyromagnetic deviation as it is expressed newly by the equation according to Wikipedia as follows:

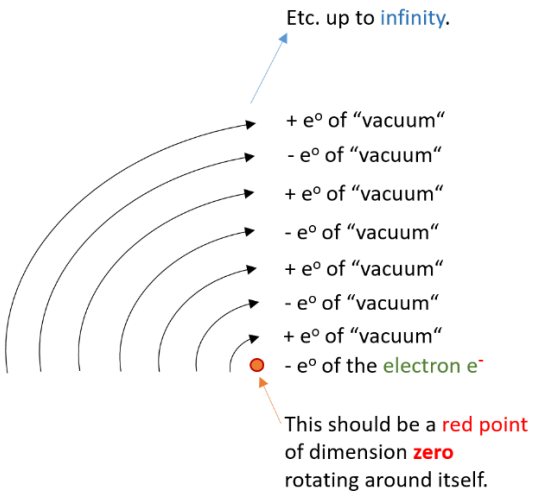
$$\vec{\mu}_s = -g_s e_o \vec{s} / 2m_e$$

This is an equation that should include the so-called spin of ±½. From this process, the factor is doubled. However, the spin does not mean an intrinsic rotation of the electron but its relation to the oscillation as we repeated our opinion. So, a dot cannot rotate around itself.

Image 4.8;4: Rotation of the effective Charge of the Electron




Did the QED something wrong? No, she couldn't know any better. Unified solution of gravitation and all other fields was missing and still missing today. But we have presented such a proposed solution comprehensively and also referred to it as "Ideal Oscillator Theory" or "Unified Field Theory Solution". QED had to search for any solution that had a relationship just to the electric features of the electron. She went from zero to infinity in order to adapt a perturbation calculation to reality. It appeared that the vacuum was polarized.




In reality, the infinity of polarization stopped at approximately $10^{-13}$ meters. While that's not infinity, that reading didn't impress QED. This amount, however, shows clearly to the polarization of protocosms in the massblock of the electron where the amplitude of the internal mass is on $3.8 \cdot 10^{-13}$ m. Naturally, the complete internal space cannot be polarized, but just the near space that is shifted by the rotating negative charge. This fact that QED with its solution really cannot be a gauge field theory currently was proved by measurements of the magneton of the muon. It is slightly larger than the QED predicted.

We have set up a separate theory of the electron on this subject in a further book.

## 4.9. Atomic Nuclei

Currently, one thought nuclides would be ellipsoidal buildings similarly to the sphere by a pouring of nucleons, where they all would stick together playing a “pion ball game“. Certain models favored a general rotation around the common gravity center by which quantizing possibilities would be opened similarly to the electron shell. But nothing of this can keep right thinking at visible opinions, since we had constructed the coupling of particles by their oscillation spheres. Almost in fantastic manner, before us an atom nucleus is opening, which equals more a plant growing into the space with four limbs than it equals a spherical body. In the worst case, the nucleus resembles a fat cigar.

These elementary nuclides are forming themselves “exothermically“ in nucleus fusion. Above the mass of iron nuclide, the atom nuclei only can be weld together with high energy supply in “endothermic reactions“. The shocking atom nuclei find their places at the ends of the chains of the beginning of a tetrahedron. Those plants grown here look like analoga of chemical combinations, for example like methane, but now with a maximum of neutrons. We speak of compound nuclei. The junction point of the four tetrahedron chains will be sensitive to traction because of the proton repulsions. Interneutrons seem soothing.

At first we want to explain the mass defect. For the model of the structure of nuclides we give conditions, which are following from the theoretical sentences of our solutions. In the connection we try to derive the energy levels of nucleons from ideal opinions and then we tell the correction necessities leading to the proximity of reality. Then trials are following for structures of different isotopes (you rather have a look at my new book TBA IV)..

### a) Mass Defect

According to the law of energy conservation, only valid for relatively outsides, at the electrogravitational binding of cosms over their vacuum and their oscillation spheres, a **mass defect** $-\Delta m_{(n)}$ is appearing. It is derived from Einstein's relations (2.4,16): $-\Delta E_{(n)} = -\Delta m_{(n)} \times c^2$. The rest energy $E_{Ao}$ of the nucleon as also of its rest mass $m_o$ acc. to eq. (2.4,1e) are decreasing with the radiated binding energy amount $-\Delta E_{(n)} = |E_T|$ to $E_{Ao} - \Delta E_{(n)} = (m_{Ao} - \Delta m_{(n)})c^2 = E_A$ .

Corresponding to the generally established principles of thermodynamics, the system of an atomic nucleus strives to the minimum of intrinsic rest energy. So at first, a maximum of emitted binding energy $-\Delta E_{(n)}$ or at changed mass defect $-\Delta m_{(n)}$ to the uncombined nucleons is envisaged. At the same process, the atomic nucleus has to follow the principle of entropy increase $+\Delta S_{(n)}$. How shall one understand this? Below we made rules in which the relations of proton to neutrons in coupling to an alpha particle are essential. So the relative maximum of entropy dominates at 1p : 1n (a primitive system without better structure). The distribution of both nucleons in about the same relations seem to be “chaotic“. Relations up to 2p : 3n are tolerated (the structures are more complex). As soon as the order win seems to start by building up of neutron or proton disturbing the above called relations by some neutron or proton surplus, the entropy of the system is relatively decreasing. Similar like in chemistry, we can speak here of the striving of exergonic reactions when atomic nucleus structures are formed. With iron and nickel both processes return. The rest energy of nuclides is increasing again. Additionally neutron structures are formed, which make an order win of heavy nuclei. In this respect their synthesis only can be forced with an endergonic process.

It's unknown from which parts binding energy consists. Therefore, it was always referred to the nucleon. But every nucleon gives parts of its energy to next nucleons only in the area of its real bindings (“binding arms“).

Because a nucleon generates the electromagnetic and also the gravitomagnetic vector, each nucleon binding causes a rotational movement of the rotation areas. Nucleons make a precession movement in the location of their magnetic fields. Finally from this, the concrete binding energy depends on which must be added to a certain gravity level of 1, 2 or 3. Because of the binding angles $\delta_T$ and of the torsional angles $\omega_T$ caused by magnetic directions, the emitted energy can be adjusted very differently.

This means that quantizing of magnets does not correspond to 1:1 of quantizing of gravitation, but it represents a very fine structure.

Following $\alpha_2$, the proton dives its external mass center $m_p$ into the neutron. While this event, each total inside of that cosm rotates at its perimeter referred to the external cosm, so that externally no rotation is visible, otherwise it is readable at the change of the complete magnetic momentum referred the pure sum of the single magnetic momenta of the unbound particles. Moving the proton at the sky of the neutron cosm now relatively to the rotating internal mass of the neutron $M_n$ according to (2.4,26), it gets its g. m. wavequantum energy $E_{w(p)} = m_p \times v_{rot} \times c$; $n = 1$; only for inner-cosmic relations. It corresponds to a gravitational pair formation-potency of a pion pair (280 MeV) following the calculation below under inclusion of the second nucleon. The relations are the same from the point of view of proton. An observer would see the neutron running around the “proton sky". Each energies acting at the inside of this relationship keep at the inside. Because of $\alpha_2$, external actions of that binding must be seen, too. While every nucleon is relatively in move to the inside mass of the other nucleon with its external mass being in this, it has to emit an energy amount necessary from movement calculated after the equation (2.11,21) to be a relativistic energy difference $\Delta E_{(n)}$ as at electrons, too.

We speak of the **phenomenal rotation** (cf. sections 2.4. and 4.6.). No external observer can stop the internal movement relations. This way, the adjusted internal binding relations remain with their binding energy of nucleons and internal rotations, otherwise an energy change would have happened by coupling of further nucleons or their separation, when rotation relations are changed or finished. During this process, the precession movements of elementary magnets will be changed and the binding angles $\delta_T$ will be shortened (binding energy increase) or enlarged, too. Magnetic fields coming from the outside do not change this state. They act on the nucleus and its electromagnetically caused spin completely.

In original work deleted to page 565.

My mistake was to believe in the average amounts of physics. `20 empty pages.`

A replacement for this is offered by “The Book Arcus IV” from 2020.

## 4.10. Structured Installation of Stars

### 4.10.1. Fundamental Principles

To this theme different theories were constructed, all of them assert to agree with General Relativity Theory, even GUT (Grand Unified Theories). But they cause on opinions of wave-quantum theories without each exact description of real particles. So they see all the particle energies to be at the outside (here in universe coordinate system), including all the particles, which are able to construct in transformation into their “particle concept" corresponding the possible energy balance. Excepted of this disadvantage, GUT come next to the scenario of forming coino matter from a super-hot pre-state referred to those wavequanta GUT are describing. But they aren’t correct. Their mistake is made by the assumption of a convergent origin or initial energy. But we have found **that the divergent state is not at the outside - here in universe - but inside of the protocosms and their suborders!**

GUT describe a process, which explains the main steps of wave energies by pair formation and pair annihilation. But we assume, on these steps, the “particle unification levels" **don’t lay**, just simply the levels of given stable cosms those mustn't be arisen but they are simply given!

Those cosms are destabilized by isolated radiation energy and partially by pair formation of protocosms. In this manifestation, unstable particles become heavier. Their environment, which has made them will have a higher step of energy if energy gets free again. So the unstable particles are divergently similar to the other particles, which were going an own way of energy increase. But they do not become equal to the other particles of the same energy!

Radiant energy is well calculated in temperature equivalents corresponding to Alexander Boltzmann:

$$T = \Delta E_{(n)} / k_B \qquad \text{(cf. eq. (3.2.1,5))} . \qquad (4.10,1)$$

Without knowledge of given universal protocosms, GUT start from homogeneously and symmetrically distributed primeval particles of an infinite quantity. At a radiation energy maximum of about more than $10^{31}$ K, these particles should begin to expand - called “Big Bang" or “cosmological singularity" (both concepts are wrong!). After expansion, so one believes that the temperature would decrease. Then the particle levels would purely accidentally freeze out by reduction of radiation energy. This would mean however that parts of particles would find together making the resulting particle accidentally. While this hypothetical process, they would eject energy and then they would decay accidentally "evolutionary" into well-known stable particles. This opinion is wrong, especially the view at pair formation from a mash of unknown elementary matter ("quarks"), one thinks finding it in wavequantum vacuum instead of the already given stationary vacuum as medium of the philosophical and physical matter (mass and energy)!

The only what is right at this conception is the pair formation temperature! Otherwise, **nothing** remains of “Big Bang Theory“. Just the first seconds in universe are pure fantasy, which only can be led to absurdity by the relativistically caused impossibility of simultaneity.

We explain it like follows. The destabilized particles that originally were programmed to be stable can be filled divergently with energy by forming protocosm pairs and storing them at the inside. While this process, their shells are never destroyed determined by Schwarzschild-radius $r_o$. Never they are dissolving themselves into a mash uniting their insides. Each particle type also keeps its **identity** in the state of instability for return to stability (elementarity of particles is given by stability!). Certainly, such unstable particles will go through themselves or they are forced to do this. But according to our laws, the cosm seeds forced together must leave this combination again ejecting the same energy that came in before!

At the threshold of pair formation temperatures $2E_{Ao} = \Delta E_{(n)}$, a so-called pair formation and pair annihilation equilibrium rules (equilibria are theories, never praxis, because they are following sensitivities!). At $2E_A > \Delta E_{(n)}$ more pairs are annihilated than formed. This way, the process begins of determined change of pairs into pair vacuum (stationary), into magons/antimagons as well as into e. m. radiation energy. But GUT think of some “quarks annihilation", what is wrong, because “quarks" are the part of a wavequantum model at the surface of our coordinate system. Only at the inside of our

real particles, real **protocosm pairs** are destroyed or formed because they are there. Their momenta can equally come to the outside and to the inside, but never their complete structure!

If one forms an new proton pair, protocosms are restored, but only at the isolated inside of those proton pairs! When an annihilation battle of stable cosms is running, it remains the determined surplus of cosm quantities at one type of matter (coino or anti). They are the result of given quantitative asymmetry of distribution reflected by quotient of photon number and baryon number of about $10^8$ : 1 up to $10^{10}$ : 1. (/Q 14/, p 109) This relationship is only valid in the area of universe but not inside of baryons and leptons.

Our theory gives a different premise of the cause of the quantitative difference of cosms to the annihilation after ejecting from protocosms:

> The difference between the finite quantity of gravitons g and of the finite quantity of antigravitons $\bar{g}$ additionally their coupled electric charges, the electrogravitons q and the electroantigravitons $\bar{q}$, is given from the beginning of the universe with total process of changes and transformations. In parallelly to this, just that quantitative asymmetric relation also applies to the subtrons s and antisubtrons $\bar{s}$ and their electric charges. In this respect, from this quantity, a surplus of coino (ordinary) matter particles is given from the first beginning stably constructed.

Universe has a volume of $V_U = 6.25 \times 10^{77}$ m$^3$. It is filled of vacuum cosms of graviton pairs, so about $10^{178}$ vacuum gravitons. We change the calculation on proton and electron pairs. Then the stationary vacuum would have about $10^{123}$ of such vacuum spheres. Realizing the internal mass of universe of $M_U = 7 \times 10^{52}$ kg, about $10^{79}$ spheres of remaining protons are necessary after annihilation. Relations of photons to baryons then would amount $10^{44}$ : 1 measured at stationary vacuum if all the annihilated masse had to produce the total vacuum accidentally by annihilations along the elongation.

The relationship of “photons to baryons" is really next to $10^9$ : 1! From this the conclusion has to follow:

> An **eternal vacuum body** of universe exists becoming the smaller part of foamed vacuum arisen from annihilations.

So the protocosms produce their own vacuum spaces into the already exiting vacuum body - called vacuoles. The changes of vacuum quantity by protocosmic anticollapses has an inestimably small magnitude measured with relations of $10^{44}$ : $10^9$ equal $10^{35}$ : 1.

Gravitons g, antigravitons $\bar{g}$, electrogravitons q and their antis $\bar{q}$ additionally the radiation cosm pairs, called graviton magon pairs, make the energetically highest step of matter. They have the following partners: subtrons s, antisubtrons $\bar{s}$, their free gift in the shape of the electrogravitons q and their antis $\bar{q}$ as well as their charge pairs: subtron magon pairs. Their concentration was determined internally of protocosms building up the second hierarchical plane of stable particles by their density and their number. Then the first family of stable cosms is:

**First hierarchical plane of matter**

1. Heavy type:

Graviton cosm $g^+$, antigraviton cosm $\bar{g}^-$ (gravitation),
Graviton magon pairs (gravitomagnetism, electromagnetism),
Electrograviton q (positive elementary charge $+e_o$),
Electroantigraviton $\bar{q}$ (negative elementary charge $-e_o$; electrition),

2. Light type:

Subtron cosm $s^-$, antisubtron cosm $\bar{s}^+$,
Subtron magon pairs
Electrograviton q (positive elementary charge $+e_o$),
Electroantigraviton $\bar{q}$ (negative elementary charge $-e_o$).

The isolated inside of protons, antiprotons, electrons, positrons, electron neutrinos, electron antineutrinos, was made by them. This means that a multiple structure was installed at the inside of three particle features called above “first hierarchical plane".

If we begin with electrogravitons and their antis, which make the elementary electric rest charge, the assumption was correct that gravitons must have a determined charge causing their programmed pair formation:

$$E_{g\text{-pair}} + g/\bar{g}\text{-vacuum} + q/\bar{q}\text{-vacuum} + g\text{-magon pair} + g^{+}_{elgrav} \rightarrow (g^{+} + \bar{g}^{-} + g^{+})_{elgrav}\,.$$

For the same asymmetry binding in atoms like given between protons and electrons, here we must have primitive subatoms $g^{+}/s^{-}$ (a hydrogen analogon) with subtrons, which structure key is programmed in electrogravitational subtrons and electric subtron magon pairs:

$$E_{s\text{-pair}} + g/\bar{g}\text{-vacuum} + q/\bar{g}\text{-vacuum} + s\text{-magon pair} + s^{-}_{elgrav} \rightarrow (s^{-} + \bar{s}^{+} + s^{-})_{elgrav}\,.$$

The neutral parts of subprotocosms will be made from orders of subtrons and of gravitons. Only the programming of protocosms allows a simple electric surplus. A positive protocosm $PK^{+}$ has too much of a graviton $g^{+}$. The $PK^{-}$ is made from the surplus of one subtron $s^{-}$. The charged antiprotocosms are programmed in reversed manner. Radiation cosms are not told because of their compensation.

**Second hierarchical plane of matter**

1st Heavy type:
Proton cosm $p^{+}$, antiproton cosm $\bar{p}^{-}$,
Proton magon $q_p$, proton antimagon $\bar{q}_p$ (partial charges),

2nd Light type a:
Electron cosm $e^{-}$, antielectron cosm $\bar{e}^{+}$ (positron),
Electron magon $\bar{q}_e$, positron magon $q_e$ (partial charges),

3rd Heavy type: Points a and b must be internally descendent with each other!
Electron neutrino cosm $\nu_e$, electron antineutrino cosm $\bar{\nu}_e$,
Electron neutrino magon $q_{\nu e}$, electron neutrino antimagon $\bar{q}_{\nu e}$ (partial charges),

Deleted.

Finally, the second hierarchical plane including the first hierarchical plane make each structures of the internal universe.

Because the universe itself represents a stable particle, we can observe it as the **third hierarchical plane**. The complete thing is resting in the eternal vacuum, in which the hierarchy is already programmed. So we can count the hierarchical planes in reversed sequence, because in the deep of the first particles in gravitons and subtrons, there is no matter as also at the outside of the universe. In this respect, the outside of the universe and the "outside" at the inside of the gravitons/antigravitons and of the subtrons/antisubtrons are the same. For us, made from such a matter as this, the outsides are nothing, so they aren’t matter but **formers of matter. They are the Anything Moved**.

If the pair formation-temperature will be going below of $10^{31}$ K or $10^{28}$ K, those gravitons/antigravitons and subtrons/antisubtrons annihilate only given internally of their receptacle cosms of the second hierarchical plane made in a temporary packing of protocosms. The results of annihilations are vacuum-foam and the own magon pairs - the electric elementary charges (graviton magons /-antimagons) and subtron magons /-antimagons (really the first secondary charges of electrition).

Gravitons and subtrons consequently are never come really free, which means that they don’t appear in quantitatively asymmetric form externally their second hierarchical plane! These first particles are

installing real structures at the inside of protons and electrons and their neutrinos, certainly not fine quantized but already in analogy to the galaxy structures of our universe.

The number of protocosms, which build-up the particles of the second hierarchical plane is programmed to three types. Those protocosms of electron neutrinos $PK_{ve}$ and of electrons $PK_e$ are the same:

1. $PK_e$ or $PK_{ve}$ 3. $PK_p$ and their antis.

This means: the first two particle types called gravitons and subtrons are made to be modules of the stable particles electron neutrinos, electrons, protons acting by their protocosms.

The proton-antiproton-annihilation begins below the temperature of $T < 2.177 \times 10^{13}$ K. Those photons work with their energy at electron-positron-pair formation until the temperature has reached the level below. This is given from electron-positron-annihilation at $T < 1.1857 \times 10^{10}$ K for 1 : 1 magons and antimagons of the photon energy of each $5.928 \times 10^9$ K. Deleted.

So the consistence of universe is resulting:

- **g and s are ideal products.** They consist of apparently “nothing", from the anything moved.
- e and also p consist of s and g.
- $\nu_e$ consist of s and g.
- The universe consists of $\nu_e$, e, p (n) and at their inside of s and g!
- Externally of the universe, there is the ideal substance, therefore “nothing" or the fundamental substance for the anything moved.

The vacua of gravitons and antis including the vacua of subtrons and antis make the stationary gravity-vacuum of universe: gravitation = negative gravitation (condition of Einstein for stationary cosm). There are each a graviton magon and a graviton antimagon as well as a subtron magon and a subtron antimagon for each gravitational vacuum cosm consisting of a graviton trunk and an antigraviton trunk and of such combinations from subtrons. Under these conditions, we aren’t allowed to forget the radiation cosms. **But they remain closed or locked in the stable particles of each of the hierarchical plane.** The universal protocosms $PK_U$ are combined of radiation energy, of the cosm types of the second hierarchical plane and their antis in quantitative difference. Following they are running their installation only over the above called isolated temperature stages but only until those temperatures laying above $2 \times 10^{13}$ K but still far below of $10^{28}$ K. Because the higher temperatures for pair formation of gravitons and subtrons only exist internally the particles of the second hierarchic plane got unstable by energy supply from environment. Even if you reach more than $10^{28}$ K in experiment, these particles do not dissolve themselves, but they can form subtron pairs and graviton pairs in protocosmic states very soon annihilating and reflecting the states at the inside of the particles. In these experiments, you will see that there is no break of the pair symmetry by chance.

### 4.10.2. Death and Rebirth of Stars and Star Systems

Today one expects the exploded star would only be the expression of the death. By chance or accidentally nebulous products found together making the “fire" of new stars.

> Contrarily, we found that the complete system is caused by a programmed process of life transformations, by a chain of sub-orders as they are similar to the limited Fibonacci sequence.

Currently, astronomers think that "Black Holes" would be in the centers of the star systems like Virgo and Andromeda. Here the question results: Why are "Black Holes" just in the cores of extremely hot areas, when the teaching opinion predicts the “Black Hole" as a result of a cold collapse? Isn’t it suspicious? Astronomers wonder why completely young stars are existing next to the oldest stars. Finally, they explained this fact with a slower contraction of remaining “big bang nebula". But, should

our children just live next to us, because the matter of primeval human beings had a slower evolution? This one question shows the contradictions of all present theories of universe and of life evolution.

According to our opinion of a radiation supplied collapse into a protocosm, the following fact is clear. The structures of systems came from anticollapses, from evaporations. As shown, the highest density remains in the centers. This is the force supporting the influx of masses. Driven by gravitation and supplied by radiation, in the center of the galaxy core, a protocosm-twin is built-up inside of the Divergent Sphere, DS, by collapse or better by condensation. In this moment, that mass turns around from the external to the internal state. Acc. to eq. (2.7,1b), it is immediately disappeared because changed into a very small mass of vibrating surface. The protocosm can be moved by a very small momentum coming from the center (the stronger the momentum, the more the protocosm can fly at all). Then it evaporates next to the center or far away in the slice or halo population producing new systems in the proximity of the core or e. g. a small system of very young new stars or only one single star with its planet system.

This production of secondary PK in the divergent centers is dependent on the support of radiation, in the end on the kinetic energy, which will drive the sPK out of another after its formation. Consequently, along the decrease of the radii of the universal objects, the area of the sPK is becoming more and more tiny. At spiral galaxies, you can still see it. Already at global star clusters, the tiny spirals are hidden inside the centers of these heaps. Inside the stars, they are completely disappeared, but they are there.

**This is the fountain of youth of matter - the death and the rebirth!**

Certainly, the problem of so-called “worm hole" seems to be able to be explained. This physical building of fantasy should help to overcome the inexplicable phenomena. Disappearing of matter and its return is bound at the change of isolated mass into external mass and vice versa. Neither "Black Holes" nor "white holes" nor "worm holes" are really existing as their strange phenomena, but only one uniform process in the shape of those tree features is reality:

- Collapse or condensation of energy and mass to protocosm (becoming black - the death) by the process of internal pair formation of particle from some part of energy.
- Using matter transport by that protocosm with almost light velocity
  while the new order is rebuilt (being worm or better being seed - the prepared rebirth).
- Anticollapse or evaporation of that protocosm (becoming white - the rebirth with potency for life and death) during the process of annihilation of the surplus of the particle pairs.

During the galaxy core is missing matter by periodically continuous protocosm production, the process seems to be a fall without an end, externally observed, as if there were concentrated extreme "black-hole-masses" in that core: a barrel without ground. But the environment has to react on this. Its central body loses gravity. So the objects escape from it during its movement of inertia (centrifugal force). This leads to inexplicable rotation relations in spiral and/ or bar galaxies.

Birth and rebirth are reality. There is no need for a belief, if there wouldn’t be still the other belief in the “stationary Black Hole" and in the accident, which has the purpose that one don’t need to accept a world externally the universe in which the programmer of the universe may be living really. But the mathematically and logically based belief will be more science than the belief in assumptions.

### 4.10.3. Transformation of Universe Matter

#### 4.10.3.1. First Objects

Externally the protocosms carry their electrogravitational wave energy $E_w$ (acc. to (2.12,8)) or their rest energy $E_{Ao}$. We distinguish the orbit spin of the protocosm in universe - differently expressed: its wavequantum spin (WQ-spin) and its primary spin, which is a primary effect standing vertically on the WQ-spin. The monopolar force coupling of gravitational primary spin decides over the kind of gravitation of a protocosm acc. to (2.12,6): negative **or** positive. If in universe were two bodies of matter, face

to face, one positively gravitating and the other from antimatter, we would find two spaces. Because of their repulsion, they would remain separated.

> Just internally of the unstable particles, both kinds of gravitation are realized programmatically at the protocosm pairs.

When the protocosm anticollapses, the electromagnetic and gravitomagnetic force coupling as quality of that protocosm is disappeared with rapid speediness. The movement are freezing. Because of the larger mass M, immediately the laws of gravitation are acting now in a new way. Subprotocosms stop their movement next to zero and take the smaller movement momentum remained of being protocosm into their gigantic mass now (cf. (3.4.2,3)). All the ejecting subprotocosms will get a minimal angular momentum for initial value negligible small. The primary momentum vertically standing on the wave momentum initially means the minimal angular momentum of the rotation direction of that complete mini-world existing in the protocosm. If it is ejected, then it carries - even only tiny dimensions at all - a pre-rotation pointing the way according to the principle of sensitivity. The complete system will be synchronized to the given space curvature.

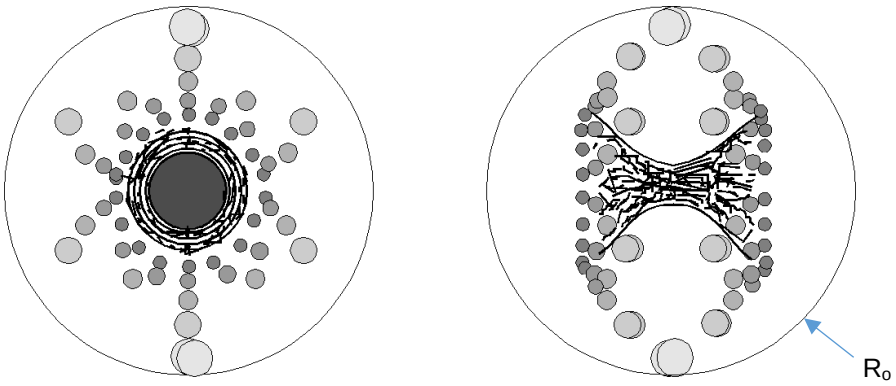
Therefore the rectified rotation direction of partial systems is adjusted normally in the opened system of the next low hierarchical plane - that plane of the first-rate subprotocosms of the opening protocosm. Then the further hierarchical subplanes below as second-rate protocosms, their subprotocosms and so on follow the same principle for themselves.

However, if PK will evaporate earlier, their deviation is less dependent on external influences. This is certainly why we find satellites that have reverse rotation.

Each system coming from the first rate of the anticollapse has a characteristic shape following the quantizing. Two funnel areas curved to the outside like fungus hats are formed with almost circular bases, which most tight openings are in the center and there they are coupled at each other with the highest density of the system. Because there is no geometrical name for this body, we make it with a comparison: this thing is similar to two chanterelles coupled at each other by their handles. This is a **double funnel** with an **upper** and an **lower hat**. Everybody is described by the gravity centers of the subprotocosms living there.

Illustration 4.10.3;1: Double Funnel in the Area of a Stable Cosm

a) Top View b) Side View




In universe, the left area of the side view can be ordinary matter, the right area may be antimatter. Inside a stable particle, the external circle marks the amplitude $R_o$. In the area of the waist of the building, the upper and the lower hat are meeting themselves. But they let open a slot in equatorial width. Its width is dependent on the number of main levels. If there are few, so a rather large cyclic cave gapes. With hundreds of main levels, the parity orbit can be divided into a few degrees, which let the **funnel slot** opened. All around, it isn't open. Exactly on each two contrary laying sides, the subprotocosms of the first main level n = 1 ... are built-in; the first three (or only one), the second four, the third four etc. They are those bodies with the most large distance from the gravity center of the double funnel. Now we imagine the amplitude would be the one of a protocosm. Such an instable

particle will be overcome by the top-PK still locked. They arise out of its receptacle extremely accelerated with minimal curvature of their tracks escaping into the higher space.

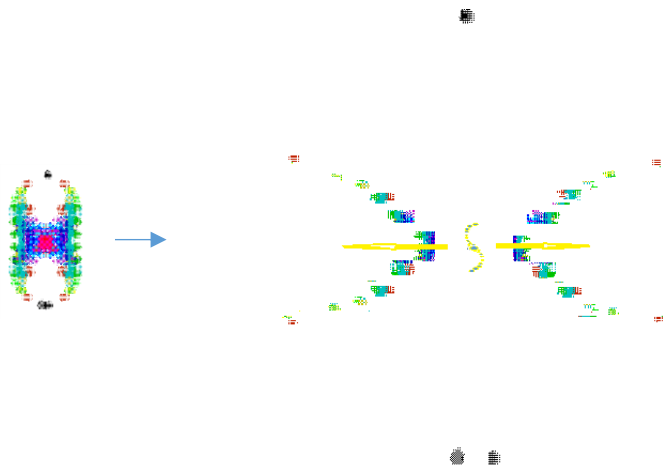
At a multiple number of main levels, the secondary levels already grow into the funnel slot. In the complete area of the funnel slot, there is no further subprotocosm, so that the total energy of central annihilation shall pass the slot all around. While this operation, the radiation hits the upper subprotocosms, which are thread up like on a spinal column in the areas of the quantum number m = 0 of eq. (2.13.2,2). These subprotocosms absorb the energy at both ends of the column while they are accelerated. Contrarily, inside the centers of the funnels, there is the own “Small Bang” of the particle, its propellant charge by extreme radiation. They shift everything in front of them and come straight on best in both funnels to the right and left, you can see it in the side view b. This way, there two jets of radiating matter are ejected observed as shapes of hourglasses .

> Because this prestructure is already given before the protocosm is opened completely, the upper subprotocosms get an energy supply via radiation, which makes dilation stronger or which makes them remaining locked and which accelerates them with the necessary momentum in orders of magnitudes. However, they already have an amount of energy escaping with more or less speed.

The whole primarily opened body takes the shape of a **well-flat rotation ellipsoid**, which shows the funnels at both sides of the rotation axis and the funnel slot in the rotation area. From this center of funnel slot, the radiation energy of the annihilation including hydrogen-helium gas is coming out, followed by energy of protocosm production in the contraction process, too. But while the annihilation energy still shoots out the funnel slot like from a disk-like radiator, it meets the subprotocosms of the space quantizing m = 0 and accelerates them under absorption from its layer (see section 4.2.). This looks like a turtle would venture out head and tail under their shield. Deleted.

Those jets come from the centers of both hats but not from the funnel slots, because there was almost nothing annihilated! The extreme quantity of annihilated matter/ antimatter lies directly on both centers of the hats. This was not clear enough in the illustration 4.10.3;2.

The accelerating process of subprotocosms equals a throw into the plane forcing the ejected subprotocosmic bodies to take a parabolic orbit. In this respect, it will be changed into an elliptic orbit approximating a circle. During the first-rate openings, the subs distribute their central and subordinated bodies including their gas clouds this way that one gets more a drop-like body than a spherical space of the initial state of installation of the systems. This might be right for early installation stages of galaxies. Consequently, the halo arises at first. Hoping, this is better to realize at these illustrations. First, there is the inside of a stable cosm or also of a protocosm in the beginning of its internal elongation. The second illustration shows that protocosm flying apart while in its center there is a small spiral arising from the Divergent Sphere producing secondary protocosms:



Certainly, you can realize that subprotocosms, which are just flying away, generate a shape of hourglass. From the inside to the outside, those SPK are opening (evaporating). You see, the hourglass grows from inside to the outside. In the center, there is the hottest appearance because of the Small

Bang. Divergent Sphere is developing there from that secondary PK come shooting out. As well as it is possible caused by environment, they form spirals.

Inner subprotocosm have a larger inclination for later adjustment of an ecliptic (which one had to refer to Neptune in our solar system, but one had not to do it on Earth). So the disk will be thicker in direction to the center until it finishes in a well-flat ellipsoid.

The most upper sub-PK will lay next to the plane of arising disk (ecliptic). But the last will be set into the plane above and below of it. The inclinations of the orbit to the ecliptic increase along the shortness of that way accelerated by radiations. For example, we see this cohesion at the planetary system: Mercury 7°, Venus 3.4°, Uranus 0.8°, Neptune 1.8°. So the intrinsic inclination of subs to their rotation plane behaviors like this. The partial system of asymmetry MB-1 agrees with that fact, which already adjusts the angles of about 26°, for example: Earth 23.45° - Mars 25.19°; Saturn 26.73° - Neptune 28.8° (see below). (/Q 3/, p 259)

Even a tree corresponds to the principle of double funnel: crown and root are similar to each other in their growing and branching structure. Between both, the limit of medium is given - a plane like ecliptic or a disk like the funnel slot. Those children or layer of the trees are in the proximity of the mother tree laying in the plane as if they were a disk population of Galaxy.

Still it was not understandable why a spiral galaxy follows such a complicated rotation law as seen with the example of Andromeda nebulum:

| Body: | Distance: | Rotation velocity: | |
|---|---|---|---|
| Galaxy core | | 100 km/s | |
| connecting area | | < 100 km/s | |
| connecting area | 600 pc | 100 km/s | |
| connecting area | | < 100 km/s | |
| connecting area | 13 kpc | 300 km/s | |
| connecting area | | falling | (/Q 1/, p 15) |

Every secondary protocosm ejected primarily into the arising structure of spiral arms gives an intrinsic velocity to the ring area around the galactic center. The highest velocity is almost given by ejecting of the lightest and most fare subprotocosm with the highest radiation energy. It depends on inertia (TBA V, centrifugal force)as the center loses mass with each ejection of sPK. This way, the speed of 300 km/s is explainable by a centrifugal force successively becoming effective. The top-PK collapses and follows itself the process of death and rebirth. So this special one fills up its environment with intrinsic systems by subordinated protocosm production. These subsystems only can rotate more slowly.

Every material geodetic line is curved. Therefore, every vertical throw has a sensitivity of geodetic line direction, 1 : 1 for curvatures to the left or to the right. Differently expressed with other words: the vertical throw does not exist! Even the smallest pre-tension decides about the direction of geodetic curvature. The environment field of the curved electrogravitational space where the subprotocosms stopped while making force of curvature by asymmetric state. This way, from the beginning common rotation directions of the bodies are given around their central body. The early stages of bodies of the central body are following this tight spot of space curvature, too, but on smaller field extension and with lower rotation momentum. On small distances, however, reversals may be real.

With almost a little fantasy, it's possible to imagine the origins of planets from the double funnels. This also is a principle for satellite systems, for stars or galaxies. Complete filling of universe is made by structure of two absolute giant galaxies laying contrarily with the shape of double funnel. They are quantized into super clusters, clusters, galaxies etc.

When you wait long enough, the contours are blurred in the course of gravity contraction and also in series of new collapses and following anticollapses. The central system is ellipsoidally filled of matter and approximates to a sphere. All the matter is falling down to the super-heavy center, to the Divergent Sphere. Heavier systems need more time to make a clear distance between core and ring. If the contraction to the central body is finally gone enough, the double funnel mostly cannot be observed.

Let us look at the sun, its remnant is provable that in its rotation plane no sunspots can be watched on both sides of 8°. Surely, there the proto-planets came from the first subprotocosms! Above it, one finds the rest of hat margins - the sunspots up to 35° of both sides. The hat funnels are filled with secondary gas matter; there are no more sunspots.

From that time, the central mass of installed galaxy was able to form protocosms of the next rates by contractions to the DS, the transformation event was really starting. In the area of young galaxy the secondary systems were installed by following collapses.

At the first evaporation of SPK, there were larger, later there were smaller bodies along the decreasing total-energy: dwarf galaxies like Magellan's clouds, globular star clusters, star associations, single stars as solar systems, systems within the stars, systems within the systems - the complete program of life transformation.

From the gravity center of the double funnel, the production center of new protocosms is created. This thing we simply call a Divergent Sphere, DS. Mass and energy diverge to a hypothetic-ideal “Black Hole”, however, never they reach this state. Like a machine-gun with sweeping shoot automate, the solar systems are born. Those processes of extremely strong radiation in connection with extremely high star forming rates are observed in quasars like also in Seyfert's galaxies. Brown dwarf especially searched form can only exist inside of such a system with a quantizing of its mass of about 0.07 up to 0.09 sun masses. We assume that a system, which mass is less than this may have formed the Oort's cloud. (/Q 1/ p 48)

Such a universe arising from rebirth need no further explanation, if it has the bubble structure like seen in Hubble bubbles. It comes automatically from quantizing. The mathematician Leonardo Fibonacci found that we call such a quantization as Niels Bohr’s atomic shell already in the year 1202!

4.10.3.2. Solar Systems

We choose the installation of our own Sun and planetary system, for example, of an excerpt of the transformation process.

That time the sun protocosm had the mass $m_{o(PK)} = 2.38 \times 10^{-46}$ kg
and acc. to (2.10,23), it had the internal mass of: $M_{o(PK)} \approx 1.99 \times 10^{30}$ kg .

This corresponds, calculated into earth-masses $m_E = 5.9742 \times 10^{24}$ kg: $M_{o(PK)} = 333\,107\ m_E$ .
The mass of the present sun amounts about $333\,099\ m_E$.
Proto-mass could also eject the difference of about $107\ m_E$
in the feature of hydrogen/helium coming from
protosatellite systems etc. From the outside it took about $99\ m_E$
of dust masses of supernova. First, hydrogen and helium bodies appeared to be protosatellite systems.

Present mass of planets, satellites and small planets amounts about 445 earth masses. Additionally, we estimate Oort's cloud including Kuiper's ring would have about 10 earth-masses. They are particles of supernova dust coming from that SN that was the birth of our solar system. So about 107 earth-masses remain ejected from the inside of the Sun’s protocosm. Partially, the ejected subprotocosm mass was firstly active forming the protoplanets actually

$$\Sigma m_{Protoplanets} \approx 107\ m_E \text{ (from 97 \& 10).}$$

So the central proto-body got the remaining mass M of the rest of subprotocosms of about

$$m_M = 333\,000\ m_E .$$

About 99 earth masses of interstellar dust fell into the protosun, how it took the above called mass of 333 099 $m_E$. SN-dust was collected by gas-pregnant protosatellite systems, so that the total mass reaches 445 earth masses finally for installed inner planets and outer satellite systems. During the collection of SN dust, the hydrogen was drifting away from the protosatellite systems. Deleted.

Overview 4.10.3.2,1: Masses of the Proto-Planets

Mercury isn't a planet anymore as well as Pluto with Charon. Too less mass and too much inclination.

| | | | |
|---|---|---|---|
| Venus 12.5 $m_E$ | Earth 11.5 $m_E$ | Mars 13.7 $m_E$ | |
| Jupiter 14.3 $m_E$ | Saturn 13.7 $m_E$ | Uranus 14.3 $m_E$ | Neptune 17 $m_E$. |

Sum of the proto-mass is 97 $m_E$. Inner proto-mass is 38 $m_E$. More than 36 $m_E$ were given out to the outer protos. SN-dust filled the void. Remaining inner mass was 1.92 $m_E$.

Jupiter, Saturn, Uranus and Neptune have 59 $m_E$. In addition, there were more than 36 $m_E$ from the inner protoplanets, but a gigantic amount of mass from the Sun of hydrogen and and traces of helium. The outer planets currently have 444.7 $m_E$. Neptune remained almost unchanged. In level 1s, it got more proto-mass than the others.

Interstellar dust coming in, not only distributed fine, but also in shape of chunks expanding the mass with heavier chemical elements and compounds produced by supernova exploding before in a distance of about 300 - 400 billion km creating the above called sun-protocosm. “Planetesimals" have never been there! The oldest meteorite may be 5.1 billion years old, and the oldest rock of Earth may be about 3.8 billion years old. So the Earth’s rock only can have formed afterwards. The formation of heavier and radioactive elements can only be seen in cohesion with supernova. Their age is calculated on 4.6 billion years. Therefore, the meteorite material comes from that time when earlier stages of protocosmic rates existed. Possibly, it is directly a stone from a planet of that solar system that was destroyed by the SN before. (/Q 1/, p 94)

Oort's cloud as well as Kuiper-belt arose from the rest of the supernova that has made our solar system by that protocosm for our protosystem and for the products of decay of the old star and its destroyed planets. Such a kind of giant collisions left their traces of chaos.

In the sun core, there seems to beat the heart of energy change: the pulsating initiator and retention of nuclear fusion. Its extreme density doesn’t only produce antimatter, which lights the nuclear fusion next to its surface but which also forms new protocosms in the Divergent Sphere. Those protocosms may be measured with some ten millimeters radius. Then they would include up to $^1/_{100}$ of Earth’s mass. These protocosms are exported into the shell of the Sun and make small spiral structures there. There, they anticollapse (evaporate) relatively early because of their relatively larger gravitation. "Energy bundles" are produced for change of hydrogen into helium. They look like galaxies or mostly even like "turtles". These systems are really an intrinsic feature of life in the Sun’s shell. Some momenta produced there, reach upwards to the sun surface where they are observed as protuberance.

The core of the Sun has a charge difference from its e. m. quantizing producing the corresponding electromagnetic momentum. Sub-rate protocosms are charged only with integer electric charges. Along the opening, gravitomagnetic orders are valid as long the mass is larger than the substructure of their electric charge. So the synchronized rotation direction of all the structures is following. Now the electric charges start to work for differentiation while the difference of rotation of all the charges leads to a definite and strong e. m. vector. When the highlight of polarizing is exceeded, the charges are moving to each other compensating and changing the position spatially by changing of polarizing difference. These properties seem to be the magnetic qualities of sunspots.

The additive electromagnet of all the internal electromagnetic actions is obviously shifted in a period of 11 years (electromagnetic pole inversion). Sunspot's quantizing order proof synchronizations. They also inverse in this rhythm although they turn around themselves faster. Always two subprotocosms would make a quadrupole of charge contradictions. They are to find on the contrary surface sectors

of the Sun. The structure of a single subprotocosm appears now as a swivel that is similar to a vibrating rod magnet - a sunspot as a remnant of a subprotocosm.

Explanation of electromagnetic quantizing internally the sun-protocosm is able to transfer at such subprotocosms, which descendants exist in the sun as well as externally by escape. For example, it has influence to the Earth's magnetic field and its inversion in larger time periods. Inertia continues to have an effect of the life oscillation died out in the meantime. It works in fluid Earth core. Phases of inversion slow down themselves.

Protoplanets formed proto-satellites and again proto-subsatellites from their own subprotocosms etc. down to the physical bodies rotating and having the task to install determined bodies up to organic life on later planets. Like at protosun happened, the most central layers of anticollapsed protocosmic hierarchies could be changed into the central body that isn't a compact body, actually, it consists of innumerable bodies of that hierarchy living in a body of gas. Therefore, each protoplanet had its central body, its gas shell and its own satellite system like the protosun had its planetary system. This is the principle of quantized order of rotation systems! The relations of orbit radii of both systems are "comparable", nevertheless the temporarily gone interactions, so D. Möhlmann is writing. Though - we mean to reply - there is no homogeneity because of the possibilities of programming. (cf. /Q 8/, p 7)

Rather a life system as on Earth is one complete system of one complete body. Human beings are only a small part of Earth's life. Every living being is a piece of our possibility to be allowed to live. We can watch along the Fibonacci sequence from above at galaxy clusters down to the number 1. There, we arrive stable elementary particles. All the above structured matter is made from them. Organic cells are very small life structures that can be compared to cosms.

Möhlmann means that comparable qualities would arise by chance or from accident, and planets would be built from single rocks, he is calling "planetesimals". Our theory shows the laws of gravity quantizing why the comparability of radii has its right to exist from a program: the universe is based on its own genetics. There will be wave-quantized rings around every celestial body. These predictions of Möhlmann were already confirmed. Though, we reject his planetesimal theory and its origin via pure accident.

In the proximity of protosun, protosatellite systems stood in such a dense position in the area of equal margins of the double funnel that they collided after their hot phase and because of missing isolated quantizing forces of protocosm. So they fell into the direction of the common gravity center falling all together and forming a central gas body up to the height of 700 000 km.

The satellites of the inner systems were emitted far away. They could almost not be held by their inner planets. This way, they took elliptical orbits strongly extended in large half-axis. Sometimes they simply crashed and took **apparently** unordered orbits (they follow causality). A result of this event is the ejection of a part of smaller protobodies - of the smallest planets or of planetoids - from their original orbits with mostly ecliptical but also elliptical and non-ecliptical orbits.

In the courses of opening of the sun-protocosm and its push by radiation, in double funnel a superordinated gas body of hydrogen and helium was formed, in which the subprotocosms and their hierarchies were opened. They represented the organ-like compressions in thin gas. At the margin of the gas sphere, the density was essentially smaller.

There, the gas ball emitted its annihilation energy heat after the first gamma ray bursts. In this respect, the "primeval Sun" consisted of a hot double funnel in which open waist there were big external protobodies and the protoplanets of Neptune to Mercury. The radiation of annihilation in the disk of the protosun equator ejected the subprotocosm or their later protosatellite systems out of that state. Here the around rays with mass of protoplanetary birth chain are radiating. From there we take 90°. There both jets emit into the gas shell. Partially they are able to overcome the shell. This is certainly the only indication, present astronomers see of so-called "star arising" within a nebulum.

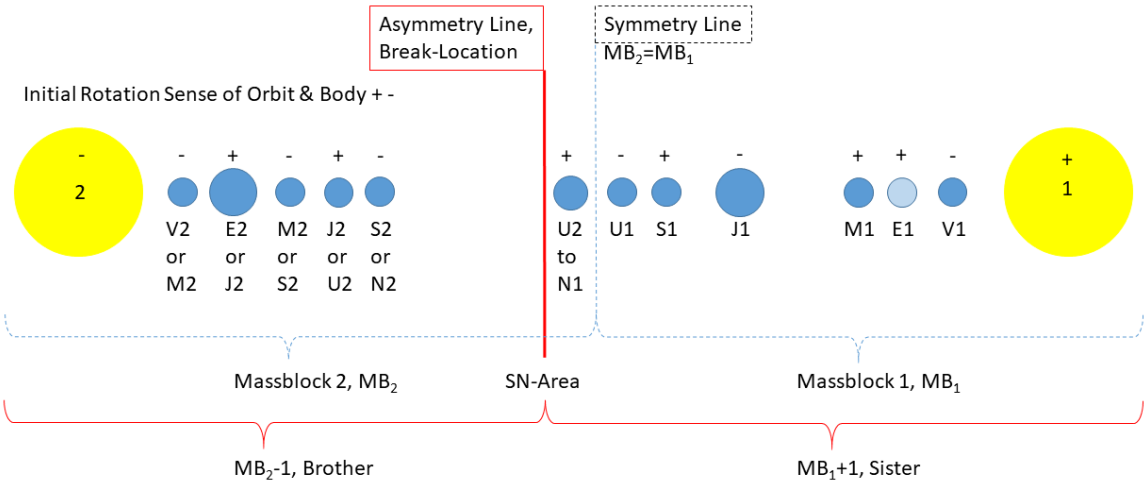
Compression of the central body of protosun system and its parts in the double funnel and the active come to metabolism of hydrogen gas by subprotocosms seems to be as protosun would "fire" its T-

Tauri stage how astronomers call this unexplained state today. However, we think, the Divergent Sphere caused an extreme explosion.

We have to repeat the expressions of section 4.2 after which each deeper step of the subs cuts further asymmetries MB+1 for each position of the e. m. asymmetries showing into the same emission direction like the upper two asymmetry systems MB+1.

That has far-reaching implications. If a pair of any PK is formed, it only can arise asymmetrically to MB+1 and MB-1. We assume that our solar system consists of MB+1. Then the symmetry would be broken as follows. Our solar system is marked with index 1 and our brother with index 2.

Overview 4.10.3.2,2: Brother and Sister after PK-Formation




Why our Jupiter does not rotate reversed has to be discovered after collision events.

Star systems aren‘t twin systems. Only a sister is able to give birth to a civilization. The brother remains without people, he never gets pregnant. Twins of these systems are first on the other side of the galaxy core and again on the other side of the galaxy cluster.

We might not even be able to see our sun-brother, if between us would lay the remnants of the past SN that made us both. That could be at least a pulsar, a white dwarf and certainly a larger cloud of interstellar gas. Should we see it, however, then a planet of the Jupiter class, Jupiter 2 (J2), would rotate in a retrograde orbit closer to the star than our Earth. The more centrally located protoplanet, Mars 2, would have been swallowed by it. External protoplanets (analogously, we call them Neptune 2, Uranus 2, Saturn 2) would exist but also marked by stronger interactions.

Asymmetry is always valid. This is the reason why there are brothers and sisters in galaxy clusters, galaxies, stars, planets, satellites, sub-satellites, sub-quantizations to the finest detail.

A sister hasn’t just to eject more mass but much more kinetic energy that PK can fly faster and much further away. The result is as follows. Sisters are more stretched in their distances of their objects. Planets e. g. are far apart. The force of T-Tauri-events is stronger. More matter will be ejected during the hurricane of radiation, but also more secondary PK that are ejected into the environment. Consequently, there is an analogon to Jupiter further out in the sister-system, in the brother-system such a Jupiter is close to its central star. In sister-systems, galaxies are loosely stretched in spiral arms, in brother-systems closer to each other.

After this T-Tauri explosion, missing gas masses of inner protosatellite systems dammed themselves mostly on proto-Jupiter. A part of inner protosatellites came into the orbit of the present asteroid ring: they have to be seen as blown-away protosatellites, which were seeds for SN dust collection. The

analogous scenario is running at protosatellite systems. There protosubsatellites are separated from the certain inner satellite orbits. There are significantly less gas masses than at protosatellites caused by gravitation.

Consequently, ring systems were generated. Saturn has the most prominent of them. It's essential that the rings include an inner system of satellites and that they are accompanied by shepherd moons. Therefore, they are also an inner system as the asteroid ring. Externally of it, we have to find one satellite at all, which reflects the analogon on a gas maximum. Below, we will compare the quanta.

The interstellar dust of “mother" supernova reached her “descendants" who were waiting for “concentrated feed stuff" like new born babies already physical. Sun system in proto state was like the young boys drinking mother's milk of hydrogen and helium. Now they are ready for eating a really mash of gas and dust of the heavier chemical elements. In their life, these elements are changing into complicated compounds. We call this process **Sedimentation of Death**.

Consequently, there wasn’t come the complete heavier matter from supernova but only a certain part of it that cannot be measured but hardly more than 1,000 Earth-masses. Overeating leads to garbage and quick death. The impact of heavier matter made the first sedimentation of death in the centers of protoplanets. New life forms of universe were living on them, life forms being adjusted to follow the gravitation into the denser medium partially and to remain in the thinner medium with the other part. This behavior, one can see at every plant and at animals living in water but taking atmospheric air or living in both media. However, the exception rules cannot live without the other medium: no bird without earth or water, no human being without solid bottom under his feet.

The most important thing is the event of meeting of the SN-dust-front with the extremely hot hydrogen and helium balls, which make the living and virgin protosun-system systematically and hierarchically ordered as if they would be unfertilized eggs in the ovary.

The composition of the chemical elements of supernova has to be taken into account. Corresponding to the present opinions, only wrong in one feature, the dying red hyper-giant consist of the following layers:

1. Helium and **nitrogen** in largest amount;
2. **Oxygen**, carbon and neon;
3. Silicon, sulfur, chlorine, argon, potassium and calcium;
4. Titan, vanadium, chrome, manganese, iron, cobalt and nickel. (/Q 1/, p 347)

The most heavy chemical elements up to the transuranic elements will be synthesized during the phase of supernova itself. The unfertilized protosystem of the proto-sun has its movement. Suddenly the SN-front of **gas** and dust meets the surfaces of high-temperature hydrogen-helium balls with different velocities, where it is reactively absorbed or “cut out". Consequently, such a determined process is running that can be seen as a meeting of “sperm" and “egg cells" or as a “two-package adhesive":

Hydrogen + nitrogen, hydrogen + oxygen, hydrogen + carbon, hydrogen + sulfur, oxygen + nitrogen, oxygen + silicon, oxygen + sulfur, oxygen + chlorine, oxygen + potassium and calcium:

$3H_2 + N_2 \rightarrow 2NH_3$; $2H_2 + O_2 \rightarrow 2H_2O$; $2H_2 + C \rightarrow CH_4$; $H_2 + S \rightarrow H_2S$; $O_2 + N_2 \rightarrow 2NO$;
$O_2 + 2N_2 \rightarrow 2N_2O$; $2O_2 + N_2 \rightarrow 2NO_2$; $3O_2 + 2N_2 \rightarrow 2N_2O_3$; $5O_2 + 2N_2 \rightarrow 2N_2O_5$;
$O_2 + Si \rightarrow SiO_2$; $O_2 + S \rightarrow SO_2$; $3O_2 + 2S \rightarrow 2SO_3$; $7O_2 + 2Cl_2 \rightarrow 2Cl_2O_7$;
$2O_2 + Cl_2 \rightarrow 2ClO_2$; $O_2 + 2Cl_2 \rightarrow 2Cl_2O$; $O_2 + 4K \rightarrow 2K_2O$; $O_2 + 2Ca \rightarrow 2CaO$; etc.

Unless of the enrichment of the elements themselves in the beginning, we get the chemical compounds **ammonia**, **water**, methane and higher hydrocarbons, hydrogen sulfides, hydrogen chlorides, nitric oxides, quartz, sulfuric oxides, chlorine oxides, potassium oxides and calcium oxides. Immediately, there are possible acid-base-reactions and reduction-oxidation-reactions. Nothing pretends the synthesis of the complete repertoires of well-known chemical compounds including the organic compounds upwards to the amino acids. Though, without the present mistake of opinions, the complete event did not happen within a homogenous sludge of the so-called “accretion disk“, but within the

concentrations of high-organized life existing from the beginning of universe. The proof for this is the gigantic offer of water and carbon in comets.

Additionally, it is essential that the dust front has met the protoplanetary system in a determined moment of rotation. Obviously, planets and satellites rotating along the layers of SN had enough time to siphon a special layer of dust front more than other areas. This way, they could even get a certain surplus of elements.

Those protoplanets, which were rotating contrary to the direction of dust front, only had little time periods for collecting elements. Additionally, from the beginning, bigger protoplanets consist of much more hydrogen and less heavier elements than smaller planets. Proto-Jupiter was pregnant with collected hydrogen gas from the T-Tauri-explosion. It cannot have collected bigger quantities from dust front like also the protosun. We find a few ammonia and hardly any water. But some of its satellites could rotate analogously the inner protoplanets. So they were able to collect more parts from the dust front. This explains better the differences of distribution of chemical elements on planets and on satellites and on subsatellites than the disk theory leading to more homogeneity. Admittedly, protoplanets and their protosatellites, which are in their immediate proximity, get identical substantial compositions; escape of volatile substances were dependent on gravitation.

Relations are similar to all small planets and asteroids and comets. At first they were packed with water and the other chemical compounds above called in determined reaction series. Then, their proximity to the Sun decided about it, if its gases had to be vaporized after that process only solid substances remained, or if they were frozen into bodies of ice, and they finished their existence this way.

Multiple interactions like pushes in asteroid ring also led to reduction of liquid and steam parts. Only far outside on satellites of the outer planets, which have little heat development, or on various subbodies that now also live as comets, are the vapors frozen.

The interstellar dust enriched the menu of chemical elements and compounds. Protosun could just get a smaller part (of arsenic hydrogen, for example) how astronomers found in the meantime. Just using this observation, planetesimal theory is intolerable. A primeval disk of a homogeneous mixture would have represented homogeneous distribution of elements and compounds. Actually, according to our opinion, the collecting protobodies consisting of hydrogen-helium gas were bombed by substances externally coming from supernova shell for each rotation direction and position.

Proto-earth obviously was moved along the front of gas and dust in which it enriched itself as also its proto-moon with masses in slow speed. For proto-Venus we must assume that it reached the dust front rotating along, but in an area that was richer with more sulfur instead of oxygen. This can be happened while Venus had turned around from a tangential walk along the nitrogen and oxygen front into the coming element fronts. We find analoga at the satellite systems. The protosatellite Jupiter called Io got a sulfur maximum, while protosatellite Europe collected much more water similarly to the Earth. Ganymede looks like it. But protoplanet Uranus was certainly moved in the proximity of a carbon layer, so its ring layers got it. Because protoplanet Uranus was the smallest protoplanet of Jupiter classification, an already higher part of ammonia and water could be mixed into the primeval composition of hydrogen and helium.

Let's go again to that time before the dust front was coming in. Expansions of protosun ejected gas masses enriching the protosatellite systems. This way, protos were “eating to be replete" in the descent from Jupiter to the Saturn being protoplanets of Jupiter classification. Obviously one found planets of Jupiter classification at some of the stars in our proximity. Actually, pulsars would have planets, too. If the laws of gravitation quantizing derived by us would be correct, such observations had to be enough for a signal of the existence of earth-like planets! Each star must have a planetary and a satellite system, no matter how far one can observe today with the given technology confirming such an observation with accuracy!

Protoplanet Jupiter was enriched by especially much mass by those satellites, which were ejected away from their orbits (but already running the Jupiter group Greeks and Trojans). It seems to be clear that a bigger satellite was attracted and “eaten” by the gravitation of the proto-Jupiter. Evidentially, today Jupiter is decorated by the "Big Red Spot" similarly to the “frozen sunspot" in monopolar shape.

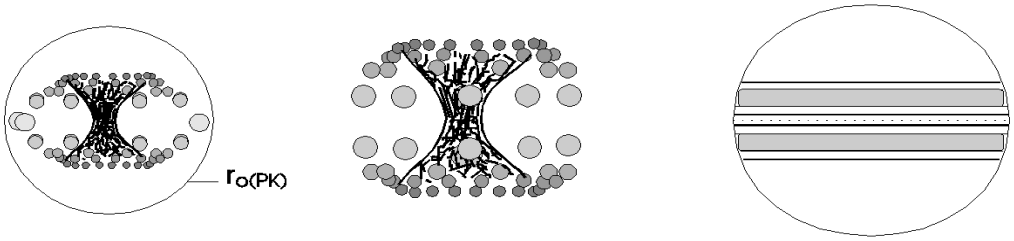
Watching the maximal extension of 40,000 x 15,000 km, it has certainly the magnitude of a protoplanetary diameter! (/Q 1/, p 166)

Origin of sunspots is coming from the last protoplanets remaining in the gas layers of the Sun! Just like this, we see the irregular spot phenomena on the outer planets and on the Sun to be the remaining swirls of those protosatellites, which were falling back or which weren't ejected at all. Possibly, it was the special crash with an arbitrary celestial body (the Big Dark Spot of 12,000 x 8,000 km on Neptune, white spots on Saturn). (/Q 1/, pp 236 and 296)

Only Uranus has no spots. Regular spots in stream behavior reflect life forms given from quantizing.

Illustration 4.10.3.2,3: The Origin of Spots

a) Protocosm b) Protosun c) Sun




According to the following collapse, T-Tauri outbursts can appear as phenomena of secondary protocosm production. Still inside of the sphere of the proto-sun, the anticollapsing products were annihilating. High energies and even relatively large reaches were given. Big quantities of gas were ejected by the Sun. Then they were collected by the outer protoplanets. This way, inner protoplanetary shells lost a big quantity. Therefore, the mass descent is going up to Saturn. Other stars can have generated first gas maxima of their protoplanets far or next to the star dependent on their energies. Protosun condensed its gas area. Then it only vibrated in low amplitudes. For comparison, ordered after average distance from the Sun, we give an estimation tendency in earth-masses:

Overview 4.10.3.2,4: Changes after Evaporation, Collapse and Supernova

| Planet: | Before the 1st sun collapse: | After 1st collapse: | After SN-dust: |
|---|---|---|---|
| Mercury | is probably no planet. | | 0.055 |
| Venus | 12.5 - 12.48 | 0.02 + 0.795 | 0.815 Dust |
| Earth | 11.5 - 11.46 | 0.04 + 0.96 | **1.000** Dust maximum |
| Mars | 13.7 - 13.65 | 0.05 + 0.057 | 0.107 |
| Asteroid ring (belt) | | | 0.0005 |
| Jupiter | 14.3 +292.1 | 306.4 +11.5 | **317.894** Gas maximum |
| Saturn | 13.7 + 72.7 | 86.4 + 8.784 | 95.184 Dust |
| Uranus | 14.3 + 0.1 | 14.4 + 0.137 | 14.537 |
| Neptune | 17.0 | 17.0 + 0.132 | 17.132 |
| Pluto | no planet. | | 0.00022 |

(/Q 1/, p 259)

The inner protoplanets lost mass, the outer planets added the gas mass of inner protos and of protosun. This way, the initial state of the real protoplanetary mass will be veiled. But where does the second action dust maximum come from with mass concentration in the area of proto-Earth and of proto-Venus? This may not be the result of taking elementary gas masses of hydrogen and helium, but rather this seems to be a maximum of interstellar dust remaining from supernova before. Those masses came in at the same time after the first T-Tauri-outburst. Obviously, a second T-Tauri-outburst - a second sun collapse - still will have carried the gas masses just up to the proto-Earth. A second gas maximum is given possible to bind the SN-dust quantity to itself and to its single moon. The moon only took up the dust as one thinks it should be older, because its material comes from SN (proto-

moon came from inner satellite systems next to the Sun and was caught by proto-Earth). But the Earth stored the original solid substances of SN more into its center in process of sedimentation. Their living beings changed them in metabolism process and stored them at the surface of the planet.

Pluto may be a secondary body, which wasn't installed along and together with protoplanets. Its orbit inclination to ecliptic is unusually high with 17.15°. Even its orbit's eccentricity seems to be extremely. If we order planet pairs, we can see better the systems of the past in earth-masses:

Overview 4.10.3.2,5: Order of Protoplanets

| Proto order Asymmetry ( ) | | Present Mass: $m_0$ (round) | Early Mass $M_{(sPK)}$ |
|---|---|---|---|
| (-) | Venus | 0.8 | 12.5 |
| (+) | Earth | 1.0 | 11.5 |
| (+) | Mars | 0.11 | 13.7 |
| (-) | Jupiter | 317.9 | 14.3 |
| (+) | Saturn | 95.2 | 13.7 |
| (-) | Uranus | 14.5 | 14.3 |
| (+) | Neptune | 17.1 | 17.0 |

Angular momentum at big gas masses of 11.5 to 17 earth-masses was about the same weak magnitude. The contraction and sedimentation in the strongly condensed centers increased rotation speed at their equator. Different processes show at different adjustments of rotation. Deleted. Neptune made the top, because it was the upper subprotocosm of the second quadrupole level of the sun-protocosm.

Proto-Mercury couldn't have a contraction of primeval gas. So it was missing its angular momentum amplified by SN dust falling in. At Venus we can see how strong the dust was still able to decrease the rotation period. In opposite, the proto-earth could compress more primeval gas like the proto-Mars, too. No single planet represents such a small rotation period as Mercury and Venus, if we look into the outside of our solar system. We think that Neptune should show the rotation period of the past, changed by possible contraction from the past protoplanets. Jupiter and Saturn could condense the most of the gas. This is shown at their high rotation velocity by contraction.

Deleted.

Earth, Mars, Saturn and Neptune are descendants by inclination of their orbits equator to the plane of the track of 23.45° to 28.8°. What is the reason for this behavior? We have an exotic explanation that actually is a natural result from our models. Electrons in an electro-magnet-field have a precession movement. It adjusts the angle to the rotation plane of the field. The faster the electric charge of the electron rotates, the smaller is the angle of the inclination to the movement's plane. Consequently, the rotation-speed we have to take in our account to understand the inclination amount of an electron.

Our model predicts the gravitomagnetic field. Each massive body rotating around the Sun generates a gravitomagnet, G. M., that center is in the Sun. Sun's mass itself has its G. M. there. We know that gravitation connects equal charges or masses by attraction and so by equal directions of mass movements. During planetary masses are rotating, they adjust an angle to the common rotation plane. We conclude here the relationship to the intrinsic rotation. Planets that don't rotate cannot get a defined inclination.

We give orientation to ecliptic at relations of Sun - Earth. This doesn't correspond to the objective facts, because the equatorial inclination of the Sun is already 7.25° to the ecliptic! At both sides of Sun's equator of ±8°, our central star is free from spots. Only the cosm sentences of the subprotocosms of 4 and higher gave spots to the Sun remaining in its gas shell of that star. Similarly, we observe spot structures, swirls and streams at Jupiter, but also at big outer planets.

One cannot neglect that the amounts of SPK determine the external structures. No matter if now MB+1 or MB-1, there is always an especially big and single head-SPK before certain inner symmetrical objects follow. One head and four follower are also one head, two hands and two legs. One head, two links and four further links make another appearances. Even the organic life is made from these quantizations. You surely think that your hand has five links. Yes, actually the thumb is the head link followed by four fingers. And this order fits again to the system MB+1. So: Every life is certainly programmed by this base.

If quantizing of our solar system gave the same relations to the satellite systems, then a projective behavior of about 10 to 100 would be the result acc. to equation (2.5,1a) $F_{grav} = G_v\, m_1 m_L / r^2$. The satellite systems, at least the special four, Neptune, Mars, Earth and Saturn, had to form a modified reflection of the planetary system, but we should find a special similarity at Uranus and Venus: retrograde state and steep orbit angle. In differently large protocosms, the energies can deviate of each other very strongly. We had to assume that orders of magnitudes will decide here. As the sun-protocosm could eject its subprotocosms up to 6,600 times of Neptune, protocosms of satellite system only could do this with 20 times. With the number relations of 330, we don't get a projection of equation (2.5,1a).

Overview 4.10.3.2,6: Order of SPK and Inclinations

| Proto-Planet Quantum SPK-Quadrupole | | G. m. Proto-momentum ($\bar{\mu}$): | Current Sizes Rotation-period: | Inclination of the Path to the Ecliptic: | Inclination of the Equator to the Plate of the Path: |
|---|---|---|---|---|---|
| Venus | 3s | (- $\bar{\mu}$) | -243d (-r) | 3.39° | 177.4° |
| **Earth** | **3s** | **(+ $\bar{\mu}$)** | **+23h 56 m** | - | **23.45°** |
| **Mars** | **2s** | **(+ $\bar{\mu}$)** | **+24h 37 m** | 1.85° | **25.19°** |
| Jupiter | 2s | (- $\bar{\mu}$) | + 9h 55 m | 1.31° | 3.1° |
| **Saturn** | **2s** | **(+ $\bar{\mu}$)** | **+10h 39 m** | 2.49° | **26.73°** |
| Uranus | 2s | (- $\bar{\mu}$) | -17h 14 m (-r) | 0.77° | 97.92° |
| **Neptune** (Q 7, p. 259). | **1s** | **(+ $\bar{\mu}$)** | **+16h 07 m** | 1.77° | **28.8°** |

Overview 4.10.3.2,7:
Relationship of Rotation Speed and Inclination of the Equator to the Plane ordered by Mass

| | | | |
|---|---|---|---|
| **Mars** | **+24h 37 m** | **25.19°** | Less mass with less rotation speed |
| **Earth** | **+23h 56 m** | **23.45°** | A little more mass with less rotation speed |
| **Neptune** | **+16h 07 m** | **28.8°** | Much mass with higher rotation speed |
| **Saturn** | **+10h 39 m** | **26.73°** | More mass with high rotation speed |

The orbital 4s comes before 3d in the electron shell. Here in protocosmic quantizing, the orbital 3s is earlier out of its receptacle than the orbital 2p, because this level hasn't enough kinetic energy distribution for 12 SPK. In 3s, there are only 4 SPK in the same plane as the other s-orbitals.

You surely comprehend that Venus hardly rotates. So it is easy to explain why there is such a strange inclination of 177°. Jupiter and Uranus actually have a very fast rotation period. It is possible to explain why Jupiter stands perpendicularly with its synchronization of the gravitomagnetic field vectors. It rotates with an extremely big mass into the same direction as well as on its track and on its intrinsic rotation. Uranus actually has much mass. Its behavior is caused by the reversed rotation sense of its SPK. It roles backwards on its path, the axis of rotation close to the plane of of the orbit. It seems that in distant future, it will straighten up synchronously with the central gravitomagnet.

Why do all the planets rotate into the same direction of their tracks, no matter if their intrinsic rotation is adjusted to parallel or antiparallel? The sensitivity of carrying out while anticollapse decided about the orbit direction. So ideal-theoretically 1 : 1 left and right orbits had to be installed. Actually, the space is curved by the mass all around. It determined the total system running to the right direction. This way, g. m. wavequanta were adjusted parallelly in the center of the Sun - the best gravitomagnetic solution!

Negatively rotating planets moved now contrarily to the positively installed planets or satellite systems in their intrinsic rotation. They made negative gravitomagnetic vectors concentrated in the area of the Sun. All the positive planet masses formed the positive sum vector, which is the strongest because of Jupiter. Contrary gravitomagnets are acting repulsively. Following this force effect, the orbit areas of negative protosatellite systems of Uranus and Venus had to turn around a certain measurement around their own axis or they had to decrease the rotation velocity. Therefore the strange inclination angles were adjusted.

(cf. /Q 4/, p 366)

No single planet rotates in a retrograde orbit, although we observe it at satellite systems. If we take it exactly, nothing is different here, too. The strength of the gravitomagnetic field is essential.

Four of the significant Jupiter satellites Io, Europe, Ganymede and Kallisto could have ejected each two subsatellites into contrary directions. Lexica didn't give information about inclination of equator areas to some orbit plane of the satellites. Based on certain comparisons to asymmetries, we mean that their protos should have similar inclination angles as Earth, Mars, Saturn and Neptune next to 20° and 30°. Really, one finds both subsatellite quartets with about $^1/_{10}$ of the satellite mass. There are positively oriented: Leda, Himalia, Lysithea and Elara with average of +27° orbit inclination. Those negatively orientated subsatellites are these: Ananke, Carme, Pasiphae and Sinope with the average of -28° inclination of their orbit to the equator of Jupiter.

Exactly, each planet of Jupiter classification had to emit a first group of protosatellites. Because of their large distance, they could not get into the orbit of its planet but into the Sun orbit far above its primeval mother planet. This could be the origin of Pluto. Above its orbit, there may be a certain quantity of small bodies, perhaps identical with Kuiper's belt. In this respect, these many smaller and apparent satellites and their mites, observed as ring systems, are not real satellites, but scattered satellites of their satellites, similarly to the asteroid ring of the inner planets or similarly to the planetoids between inner planets. Now we call them **virtual satellites**, because they haven't remained subsatellites. The differences of satellites are caused in their prestructure.

Triton doesn't seem to be an own first-rate satellite of Neptune. Now one had to examine how far their subsatellites were active either as known smaller bodies as Proteus and Naiad or if they even had quantized fine dust into the orbits as well-known by the dust rings.

The overviews of the satellites show to their group-like order of pairs or to orders of four of two pairs. Nevertheless of the interactions of the past, we mean to see here the electrogravitational quantization of groups in the origin instead of a chaos.

Neptune satellites

| Name | ∅ in km | Average distance in km | Orbit inclination in ° to equator of Neptune |
|---|---|---|---|
| Ring system | | 17 000 to 32 000 | 0 |
| Naiad | 50 | 48 000 | 4.7 |
| Thalassa | 80 | 50 000 | 0.2 |
| Despina | **180** | 52 000 | 0 |
| Galatea | **150** | 62 000 | 0 |
| Larissa | **190** | 73 600 | 0 |
| **Proteus** | **436** | 117 600 | 0.6 |

| | | | | |
|---|---|---|---|---|
| Triton | **2 704** | 354 800 | r | 157.3 (= - 22.7) |
| Nereid | **340** | 5 513 400 | | highest orbit eccentricity |

(/Q 1/, p 234)

Uranus satellites

| Name | ∅ in km | Average distance in km | Orbit inclination in ° to equator of Uranus |
|---|---|---|---|
| Ring system | | 37 000 to 51 160 | ? |
| VI Cordelia | 26 | 49 770 | 0 |
| VII Ophelia | 30 | 53 790 | 0.1 |
| VIII Bianca | 42 | 59 170 | 0.2 |
| IX Cressida | 62 | 61 780 | 0 |
| X Desdemona | 54 | 62 680 | 0 |
| XI Juliet | 84 | 64 350 | 0.1 |
| XII Portia | 108 | 66 090 | 0.1 |
| XIII Rosalind | 54 | 69 940 | 0.3 |
| XIV Belinda | 66 | 75 260 | 0 |
| XV Puck | 154 | 86 010 | 0.3 |
| V Miranda | 480 | 129 390 | 4.2 |
| I Ariel | **1 158** | 191 020 | ? |
| II Umbriel | **1 172** | 266 300 | 0.4 |
| III Titania | **1 580** | 435 910 | 0.1 |
| IV Oberon | **1 524** | 583 520 | 0.1 |

(/Q 1/, p 366)

Saturn satellites

| Name | ∅ in km | Average distance in km | Orbit inclination in ° to equator of Saturn |
|---|---|---|---|
| Ring system | | 60 330 to 483 000 | 0 |
| 1980 S 35 | 22 | 118 231 | ? |
| 1980 S 36 | 26 | 118 269 | ? |
| XVIII Pan | 20 | 133 570 | ? |
| XV Atlas | 30 | 137 670 | ? |
| XVI Prometheus | 120 | 139 353 | 0 |
| XVII Pandora | 90 | 141 700 | 0.0 |
| XI Epimetheus | 120 | 151 422 | 0.34 |
| X Janus | 190 | 151 472 | 0.1 |
| I Mimas | 392 | 185 520 | 1.5 |
| 1981 S 12 | 10 | 185 520 | ? |
| II Enceladus | 500 | 238 020 | 0 |
| III Tethys | **1 030** | 294 660 | 1.86 |
| XIII Telesto | 30 | 294 660 | 0 |
| XIV Calypso | 28 | 294 660 | 0 |
| 1981 S 6 | 20 | 294 660 | 0 |
| 1981 S 10 | 15 | 350 000 | ? |
| IV Dione | **1 120** | 377400 | 0.02 |
| XII Helene | 33 | 377 400 | 0.0 |
| 1981 S 7 | 20 | 377 400 | 0 |
| 1981 S 9 | 20 | 470 000 | ? |
| V Rhea | **1 530** | 527 040 | 0.35 |
| **VI Titan** | **5 150** | 1 221 830 | 0.3 especially big candidate |

| | | | | |
|---|---|---|---|---|
| VII Hyperion | 310 | 1 481 100 | | 0.4 |
| VIII Iapetus | **1 460** | 3 561 300 | | 14.7 |
| IX Phoebe | 220 | 12 952 000 | r | 177 (= -3) |

(/Q 1/, p 294)

Jupiter satellites

| Name | ∅ in km | Average distance in km | | orbit inclination in ° to equator of Jupiter |
|---|---|---|---|---|
| Ring next to Jupiter surface | | 71 400 to 140 000 | | 0 |
| XVIII Metis | 40 | 127 960 | | 5.6 |
| XV Adrastea | 20 | 128 980 | | 0.8 |
| V Amalthea | 200 | 181 300 | | 0.4 |
| XIV Thebe | 100 | 221 900 | | 0.8 |
| I Io | **3 630** | 421 600 | | 0.04 |
| II Europe | **3 138** | 670 900 | | 0.47 |
| III Ganymede | **5 262** | 1 070 000 | | 0.21 |
| IV Kallisto | **4 800** | 1 883 000 | | 0.5 |
| XIII Leda | 16 ? | 11 094 000 | | 26.1 |
| VI Himalia | 180 | 11 480 000 | | 28 |
| X Lysithea | 40 ? | 11 720 000 | | 29 |
| VII Elara | 80 | 11 737 000 | | 24.7 |
| XII Ananke | 30 ? | 21 200 000 | R | 147 (- 33) |
| XI Carme | 44 ? | 22 600 000 | R | 163 (- 17) |
| VIII Pasiphae | 70 ? | 23 500 000 | R | 145 (- 35) |
| IX Sinope | 40 ? | 23 700 000 | R | 153 (- 27) |

(/Q 1/, p 163)

Satellite of Earth called Luna can be an analogon to the biggest Saturn satellite VI Titan with diameter of 5150 km and average distance of 1.2 million km referred to its 3,476.4 km diameter and its average distance to the earth center of 384,403 km. It may be possible, because proto-Saturn and proto-Earth came from two different but similar asymmetry systems MB+1 or MB-1. Actually, this Luna could be a satellite from Venus or from Mercury caught by proto-Earth, too.

Protosatellites of inner planets were scattered. The initial sun-wind gave its supply. Mostly the proto-satellites were connecting themselves in asteroid ring. The other objects are still flying in orbits of small planets. We calculate with the assumption that the four inner protoplanets had a satellite system of 4 bodies in the beginning, then about 16 satellites and their subsystems had to be scattered. If we think of about $10^{22}$ kg of each gas body without gas maximum - about one tenth of the mass of the Saturn satellite Titan ($1.35 \times 10^{23}$ kg) - then the total mass of the sixteen would amount $1.6 \times 10^{23}$ kg.

Subtracting those three satellite masses of Luna and of two Mars satellites, Deimos and Phobos (of about $7.35 \times 10^{22}$ kg), the remaining mass of about maximally $9 \times 10^{22}$ kg could be scattered. During this event, the gas was escaping, only a few SN dust could be concentrated at them. In asteroid ring and externally of it, the total mass of planetoids should have only a few above of $10^{-4}$ of Earth's mass (cf. above), therefore at $6 \times 10^{20}$ kg. There are enough quanta, to search and to find the inner satellite masses even as comets or problematic satellites or even as Pluto-Charon in different areas than in asteroid ring. Duo Pluto-Charon crosses Neptune's orbit at its eccentric orbit by which our assumption is confirmed. (/Q 3/, pp 65, 125, 163, 174, 230, 254)

Unfortunately, the programmed process of distribution cannot be understood to the individual states why a multiple number of interactions have appeared. Essentially, we can see that each system has a certain similarity. The analogy to the inner protosatellites don’t seem to exist at planets of Jupiter classification. Obviously, here the similarity protoplanetary surfaces is based coming from the energy of protosatellites smaller in orders of magnitudes. Consequently, this classification of protosatellites

certainly fell back to the central body and left some surface swirls (spots). Those subsatellites, perhaps remained in virtual satellite orbit, seem to be rather mutilated, as one knows it of a few satellites next to their planets. The dust rings as analoga to the asteroid ring are externally lined by satellites with analogy conclusion to planets of Jupiter classification. We find mostly four of them in every system.

Because of the possibility of another asymmetry system MB+1 at subprotocosms for protosatellites, it is given to generate an especially mass-rich satellite as Titan (Saturn, MB-1) and Luna (Earth, MB-1). From the present point of view, Neptune satellite Triton can be explained, because it is retrograde running. Additionally, it has a higher orbit inclination.

Protos of Jupiter and Uranus were both parts of a quadrupole, so also Mercury and Venus. At both last called planets it's not possible to recognize similarity of satellites. Jupiter and Uranus have each four satellites of a certain heavy type without any especially heavy satellite. Satellites of Jupiter lay more in the proximity of planet's surface than in Uranus orbit. Gas quantities caught by proto-Jupiter led to the attraction of inner satellites of Jupiter initially after the same installation of protos of Jupiter and Uranus and their satellite systems. Therefore, below the orbits of Io, Europe, Ganymede and Kallisto hardly rest bodies remained. Its four heavy protosatellites also profited of gas maximum. Consequently, these four analogous protosatellites of Uranus had to stay lighter. These four heavy types of protosatellites of both protoplanets emitted each two subsatellites into differently and strongly inclined orbits. In the beginning of their existence, protoplanets had a few mass. Two times four subsatellites became in a far distance relatively. In this time, Proto-Jupiter and its protosatellites enriched themselves with gas essentially. So the eight subsatellites were forced into an orbit above of the four. Actually, Uranus shows us nothing about the expected two quartets above the orbits of Ariel, Umbriel, Titania and Oberon. They could not be attracted by the unchanged low mass of proto-Uranus. Their subsatellites are certainly running at any orbit being small planets similarly to Jupiter's group. Further research is the task of astronomers. We cannot go on working about the multiple number of small planets and comets in this fundamental theory.

To summarize, I would like to add: My hypotheses at least indicated at the time that there must be a quantization that certainly goes far beyond the satellites and sub-satellites.

4.10.3.3. Collapse Types

What type of supernova should have produced the star-protocosm $PK_S$? We call it **SN-Type III**: Hot and blue stars have a collapse. The reason for it is not only the “completely consumed" fusion combustible like assumed today. This is a concomitant: primeval-cosmic living beings have eaten whatever was given there - the death is near. This SN-Type III (briefly SN III) exists since the beginning of primary protocosmic installation turn, actually to this time, it was a **superlative SN III**. The cause of the end of this type is called by us **resonant collapse of the star core**. There, the cores of the bodies have their collapses supported by radiation:

| | | |
|---|---|---|
| 1. Blue superstars | (quasars) | $10^5$... $10^{13}$ $m_\odot$ |
| 2. Blue super giant stars | (Seyfert's galaxy cores) | 100 ... $10^5$ $m_\odot$ |
| 3. Blue hyper giants | (for example SN 1987 A) | 10 ... 99 $m_\odot$ |
| 4. Blue giant stars | (SN III and SN II) | 4 ... 9 $m_\odot$ |
| 5. Young, hot protostars | (invisible shelled in gas) | 0.1 ... 3 $m_\odot$ |
| 6. Young, hot protoplanets | (invisible shelled in gas) | $10^{-5}$ ... 0.09 $m_\odot$ |

$m_\odot$ = sun-mass ($1.99 \times 10^{30}$ kg).

Blue sub giants would just collapse during an SN II ejecting less energy. Because the probability of resonance is important, hyper giants, giants, sub giants, dwarfs and sub-dwarfs can live without SN. So they can really get "old and infirm": fusion combustible is consumed (red dwarfs to red giants, red hyper giants). They inflate into red stars of corresponding magnitude classifications. Later they are falling to the state of a small star, for example to a white dwarf. During contraction red giants can have a collapse with support of radiation heating up before (becoming blue similar to SN 1987 A). Classifications of white dwarfs on the one hand as death caused by infirmity and the classifications of pulsars on the other hand as another living state of a star (mother state) certainly are the last limbs of a chain of changes by supernovae (III, II, I). Here we called the change chain the **transformation law of matter**:

- It decreases the mass of objects.
- It decreases their radiation quantity for each installation time period.
- It increases their life time and stability.
- It increases the enrichment of heavy chemical elements.
- It decreases the flying time of that secondary protocosm coming from SN for each new SN relatively to the primary protocosm, so that the SN-dust and gas fronts reach and feed the new star or solar systems, which arose from such protocosms.

In HRD (HERZSPRUNG-RUSSELL-diagram), we still find only one so-called main turn caused by the kind of collecting information of this diagram from present view into this cosm. In the past of installation, the parallel shift of this main turn of HRD would be noticed downwards to the red stars especially to the red hyper giants. Additionally, the main turn upwards in HRD finishes at blue hyper giants, although in past there were significantly heavier blue giant stars in the shape of blue super giants. Their classifications are extinct in the process of matter transformation.

Along the view into the past, quasars and Seyfert's galaxies reflect the drawing of the SN III. Star systems also were discovered in the spectra of red shift of 4 to 6. This means: superstars of the first ejections from primary protocosms made the start of the system in which the frequency of SN III was very high, because the life time of superstars was the ever smallest. So protogalaxies were formed with high star formation rate, in which star classifications existed for a short time, extinct today.

We must distinguish between the opening of a sun-protocosm and the supernova of a star. Both events are radiating extremely and essentially each after their magnitude order. One cannot observe a deviating form of a radiating sphere of SN. Actually, during opening processes of protocosms, processes of ejecting matter play their essential role when the matter comes out of the surface from smaller and concentrated areas in parity. As long as equal installations themselves eject very big energies - like at primary protocosms - they are significant but not more striking because short-living and mostly covered of gas. Instead of them, one can see better the secondary effects of low-energy systems. You give them your attention.

How can you explain yourself the causality of the supernova III? The period time of a sun-protocosm is directly proportional to the isolated mass $M_{o(PK)}$. Pulsating period of mass of a star core $M_i$ will correspond to this tendency - secondarily seen - to what the period of the vibration of the star shell is only determined by the inertia movement - a big and light protocosm oscillates slowly. This way, here is a discrepancy: while the core and shell period of a superstar are close to each other, the periods of core and shell at successively lighter star classifications are going out of each other. The shell is vibrating sluggishly; the core is oscillating essentially faster. To cause the core mass $M_i$ for having a resonant collapse with shell mass m falling in, the synchronous conditions are necessary:

1st The shell mass must be in a phase of falling down, while the core is just contracting. This way it has to support the contraction consequently. Because of the inertia, it may not fall too slowly in relations to the core surface. The probability of this coming resonance disaster in the Divergent Sphere is greater at stars that are richer with mass (SN III) than at lower star masses (SN II).

2nd The momentum can be amplified by escorting stars falling down (SN I) - external reason, corresponding to resonance disaster.

3rd The energetically supported central mass collapses with extremely less than 3.96 sun masses. (/Q 15/, p 215)

4.10.3.4. Summary

After our opinion, the stars don't primarily form themselves from nebula, but secondarily **inside** of nebula. This way the cause, the effect and the side effect of star reproduction events (transformation law of matter) are given into the right order and turn:

- The new star is covered by gas and dust clouds.
- It is rich of masses, active, very bright, but covered by cool mass clouds.
- Its first bodies ejected from the star-protocosm rotate along with it in one plane.
- Denser to the center, they generate an hourglass with a bright spherical center.
- Its first ejected bodies rotate in one plane with it equally made by it. Its center ejects matter at both poles and at local places. The ray is the less active the lower is its mass (for example Sun eruptions).
- Its phenotype itself belongs to a group of bodies forming a system - a rotating system.

In initial rotation, reflected systems appear as strung-out collections (galaxy chains of galaxy clusters, a shape like a haunch) or as mass clusters of low angular velocity. This installed structure of spatial quantizing is shown by beam and spiral galaxies as well as by elliptic and irregular galaxies.

If the protocosm is giving birth over a gravitomagnetic and electromagnetic asymmetry, then all the subprotocosms are falling into the direction of the new adjusting rotation around the gravitational center with either a right or left orientated orbit and intrinsic rotation. Corresponding to the programed distances, the spirals appear filled of matter. The result is a differential rotation and interaction of masses.

If the protocosm partners are far away of each other like at installation of galaxies, then a clumsy rotation is adjusting around the common gravity center. Or better expressed: this rotation is just starting slowly. We see this fact at our neighboring galaxy - the Andromeda nebulum.

At rotation period of 250 million years in which our sun is rotating one times around the Galaxy core, we see the adjustment of rotation movement. But we also see that there are partners of isolated quantizing, which come externally close to each other and which realize a faster orbit period like our Earth and Mars. At tendency, we also see the installation of central bodies from movement that takes partners each chance away to get one exactly same distance. So they get an orbit in the proximity of the central body but not the same orbit. This can also be seen at Mars and Earth as well as at contrary galaxy arms.

For galaxy formation or for installation of sun systems, the rotation force can be completed, how the order goes up to be a kind of a disk (ecliptic). The principle of disk determines where to all the secondary rotation bodies have to move, namely into the same rotation direction and parallelly to the torque of central body that only can interact by the gravitomagnet.

The phenotype is well-known of all the systems in universe. Even Andromeda M 31 and the Milky Way are rotating around their common gravity center. Summarily, they are moving into the big center of a neighboring galaxy cluster. But a galaxy must have swirled itself with secondary systems of relatively big gravitation in first authority: lighter galaxies (local group), spherical clusters and finally plane populations of the disk and the arms down to the core.

Every forming of protocosms in the center of a galaxy can become a new cause for further collapse events leading to birth of lighter and subordinated star systems in the proximity of the given star system: to elliptic, spherical galaxies or to irregular galaxies like for example M 32, And III and NGC 205.

That hydrogen cloud discovered in 1989, 65 million light years away and ten times larger than Galaxy, gave pleasure to big-bang theorists and nebulum-theorists. They thought at a “proto-galaxy" looking at this state of gas. But we see it simply for this what it is, really, a **central gas cloud** of cold matter in especially fine (homogeneous) quantizing! It was coming from a Small Bang of any protocosm of the universe. In any case, this isn't a remnant of the first Small Bang

Similar materialistic big-bang follower make believe, the star HH-111 in Orion nebulum would be a proof for nebulum contraction hypothesis, although this is an opened sun-protocosm of our model. The star associations are also explained with a common primeval nebulum by present opinion. But we give here the clear explanation. The star associations came from one common protocosm installation of a bigger internal mass temporarily not far.

For the process of creating a star protocosm, we only can cite one single complex of evidence supported by our hypotheses:

In the proximity of SN 1987 A (Type III, came from blue hyper giant Sanduleak-69°202), a little time later in the distance of 375 billion km from the SN center, a bright new star arose looking like a double star with SN. Exactly this new star was born by the star-protocosm, which came from SN including its protoplanetary system. The exploding shell of SN has reached the new star in the meantime and covered it into the nebulum of dust, which we call here secondarily because it is the food for the new system, but not its origin. Now the new star is a star in dust! HH-111 or a T-Tauri may be similar to it. Within 4 billion years we get neighbors.

Very sure, people will live there, if the conditions are given for it. 375 billion km are about 0.04 light-years. This is too short for a distance of a PK. Consequently, it could be a reaction by matter compression, not the observation of an evaporation of a protocosm. My mistake is clear. In 157,000 ly distance, there was this SN, so already 157,000 years ago. If such a secondary PK or more of them should be flying away 157,000 years ago, then they had to fly over decades of light-years invisibly. Each flying PK to the sides, we just could watch after their opening after further decades. The escaping PK, we just could watch in the double time. Only one PK that is exactly flying to us, we could watch after a shorter time after the SN, hours or days later. In every other position, again time periods of decades would pass by, in the worst case it would be centuries. We don’t know in which angle is this event localized.

Additionally, two indications of SN 1987 A show into the direction of two contraction events:

- First event: Quick formation of brother and sister of star-protocosms noticed by the first energy outburst or the first brightness increase (export of those protocosms and further falling mass to the center);
- Second event: Formation of the pulsar by next falling masses and continuous interaction between it and the expanding shell, the second brightness increase was given there.

Between both inner central events a time of 5 seconds was going how neutrino detectors proved. Researchers thought now following old thesis of relativity theory that a “Black Hole" had to be formed. But today one sees a pulsar. Only our hypotheses give a picture of cohesions:

After the high-energetic collapse to the Divergent Sphere forming two star-protocosms, a short time later a central space of small density was made. The reason is: the first both internally energy-rich star protocosms were able to escape from the center like a neutrino with extremely high velocity but hardly prevented by environment mass. They only had to overcome the expanding shell. Another mass was falling to the center of the collapse forming another new Divergent Sphere and both second star-protocosms.

Here also a radiation pressure is acting into the inside and to the outside, when the second and long continuous brightness increase reflected the inner processes of pressure with a second shell expansion phase. The central celestial body cannot be a neutron star. Such hypothetical stars were calculated in the thirties of the last century without knowing of United Field Theory. We can see it confidently as a naive model of such a heavy celestial body. There aren’t any neutron stars! These are rather free Divergent Spheres close to the state of “Black Hole”.

The atomic nucleus density is slightly below the protocosm density. In the center of a spherical body with nuclide density, as a “neutron star” should be made, the density will be essentially greater. The assumption, here would be so-called “degenerated matter", which concept was favored in the early time of “Quantum Mechanics" without each unified matter opinion, we will specify: There one finds the central Divergent Sphere – the remaining star core. At younger stars, a gas shell covers the core, in order of magnitudes much more larger than its diameter. After all the possible living turns of star installations we come to that building that gas mantle is very small referred to the diameter of the protocosm itself. This is the **PULSAR**. Divergent Sphere generates protocosmic pairs in series. They can hardly get beyond the divergent radius, in return, however, the radiation leaves the divergent space pulse after pulse.

After each half a period, such a pulsar opens secondary PK at its horizon and ejects energies from its inside to the outer thin shell what is the brake then for high-intensive and high-frequent radiation in the area of gamma radiation. Today one thinks of synchrotron radiation, what is not completely correct. In addition to the opening, the pulsar core contracts again while its gas mantle radiates rests of energies in the complete spectrum until the next small collapse of the center generating a new formation of secondary protocosms.

The balance of process chain of SN 1987 A probably gives two pairs of star protocosms and a pulsar at all. Its density $\mu_k$ leads to a radius next to the divergent amplitude $R_k$. Inaccurate calculations would give right to big-bang-scientists and black-hole-acceptors apparently. But our quantizing principles don’t let the pulsar be a mash of neutrons (here the old opinion thinks that a heavy partner must be there for giving mass leading to retardation radiation; the pulsar should be then like a rotating lighthouse). We think the pulsar is a quantized system:

Pulsars include a Divergent Sphere inside generating secondary protocosms of weak energy.

Assuming infinity of time that a universe pulse doesn’t reach, because it is by after 17.6 billion years, a pulsar could then diverge to the theoretic state of that “Black Hole", how the conception of General Relativity Theory constructs it under ignoring of coordinates. In this respect, the “Black Hole" doesn’t really exist permanently. Currently, it was just an idealized solution.

During the exceeding of the radius $r_k$, the pulsar emits annihilation radiation into the direction of the double jet. It will be shifted to the red next to the horizon $r_k$. At the same time, the pulsar core wants to send newly formed matter - subprotocosms - from the waist of funnel slot at $R_k$. But these are such weak of energy that they cannot leave the horizon $r_k$. Immediately they are falling back to the pulsar core. This way this core is missing radiation energy at first, calculated into a very small mass equivalence. But the real internal mass M of the pulsar core hasn't really changed. Each opening is connected then with an extremely small decrease of inner kinetic energy. The inside is cooled with small amounts and collapses once more, this time on a little bit larger radius below $R_k$, increasing from undermost divergence value to $R_o$ upwards to the value $R_k$ of the smallest energy. This state diverges step by

step to black: there is hardly energy to exceed the horizon and to radiate there. So the vibrations around the horizon $r_k$ become slower and weaker (velocity of subs decreases).

The internal mass M of sub-protocosms pulsates for a short time period to the outside and adjusts the almost unchanging quantum orbit 1 with $n\hbar = \hbar_{(pulse)}$. Then the external mass m pulsates and adjusts the corresponding quantum orbit 2 with $n\hbar = \hbar_{(PK)}$ (each n differently integer). Both quantum orbits are compatible. It seems so as if a body would change its mass itself periodically on its orbit. When the protocosm oscillates slower, so its external mass m decreases. If because of quantum condition 1 the internal mass shall keep its orbit, then the external orbit of the quantum condition 2 must be kept while the circulation velocity $v_{rot}$ has to increase:

> The orbit quantizing $m_{B(PK)} \times v_{rpt} \times R_{rot}$ after (2.12,8), adjusted on such a level $n\hbar = \hbar_{(PK)}$, can only give an increase of pulsar's rotation velocity $v_{rot}$.

Such observations are real as described in section 1.1.

How fast can the surface of the pulsar core vibrate around its state of open and closed? We cannot derive any limit measurement, which was independent on light velocity. If the subs of protocosm had so much energy for completing one half-period with almost light velocity, the distance of two light pulses of about 0.03 seconds would give a curved way of two times the radius $R_{o(PK)}$ of about 1 431 km. In radius of 715.5 km a mass of $9.64 \times 10^{32}$ kg or about 500 sun-masses would be included. This is a plausible amount of observed periods of Crab pulsar. But now we may not forget that the radiation only reflects the momentum velocity $v_k = 2.82647 \times 10^8$ m/s after equation (2.8.7a) - that's a red shift in reaching the radius $r_k$. Along the decrease of kinetic energy, the time of ejection of inner mass increases. Then the pulsation period increases when the external mass m decreases.

The exceptions seem fundamentally more important here: Not every pulsar is in the state of increasing pulse period. In September 1969 one observed for example at PSR 0833 volatile decrease of period length. Then it increased again slowly. Our explanation from our opinion-system is very simple: Each mass and/or energy change by absorption or emission is changing the oscillation number and so the external mass of the pulsar. Practically, it will be destabilized how we described it at stable particles. This way, the Divergent Sphere of our PSR 0833 increases with mass because of absorption of radiation or mass with high kinetic energy. Its internal masses are stronger moved kinetically: It had "splutttered" with some mass or radiation coming from the outside.

The internal quantizing of pulsar cores also explains the momenta of smallest intensity, which fill the time periods between the main events. At first the double jet radiates from the center of the protocosm and heats up the gas mantle of the pulsar. But the pulsar core generates further subprotocosms, which diameter magnitude increases in position to the amplitude of pulsar. So their secondary radiations of double jets are acting subordinated (in section 4.4. we explained the background radiation effect to the inside before the complete foreground radiation comes back burning new protocosms). Here, from pulsar we see now that foreground radiation of its subworlds!

While the inside of the pulsar core dives under its horizon, the positions of all the moving elements of the subworld are changing. At the next opening time, new coordinates are adjusted. This way the intensity of a period never equals the next period.

In section 1.1. we contradicted the proof of gravitation waves. It is told the pulsar PSR 1913+16 rotated around a heavier central star. Its period would have decreased around two seconds while ten years (speed decreased). This only could be caused by gravitation radiation. One starts from Einstein's premise: a moved body would send gravitation waves like just a moved charge sent electromagnetic waves.

Our theory says:

On a Planck-condition orbit, no matter if mass or/and electric charge, a moved body radiates neither gravitomagnetic nor electromagnetic waves. But it is forming and keeping a gravitomagnet or an electromagnet as the quanta of a static dipole field.

Because of the equation (2.12,8) the Pulsar PSR 1913+16 with the mass $m_{PSR}$ has taken a gravitomagnetic quantum orbit with $n_{PSR} \times \hbar = m_{PSR} \times v_{rot} \times R_{rot}$, which rotation velocity $v_{rot}$ is correlated with the rotation radius $R_{rot}$. The mass $m_{PSR}$ of the pulsar actually decreases because of the permanent radiation, too.

According to the law, the velocity $v_{rot}$ can decrease while the radius $R_{rot}$ increases and the mass decreases. That's all.

Now we want to watch once again the asymmetry of nature. Golden Cut is well-known. For example of a distance divided in relationship of a:b, we get an equation from Wikipedia: a/b = (a+b)/a. If we normalize the section b to one, from our calculation we get the amount of the Golden Cut as follows: $\Phi = (\Phi+1)/\Phi$ oder $\Phi^2 - \Phi - 1 = 0$. For $\Phi_1$ we get the result of 1.618033989, $\Phi_2 = -0.618033988$ (this amount is the negative reciprocal of $\Phi_1$).

Why is this asymmetry so important? Leonardo Fibonacci found in 1202 a sequence of numbers:
0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 144, 233, 377, 610, 987, 1597 etc. Starting of 2, each of the third link is an even number. It seems like everything really only starts from the second digit of one. The differences between the numbers in this series also result in such a sequence but starting with 1, 0, 1, 1, 2, 3, 5 etc.

Fibonacci sequence begins with a strong asymmetry, and when dividing the last two numbers, an approximated number of $\Phi$ results. Both have to do with each other. Let's look at the beginning of the sequence 0, 1, 1, 2. We recognize here, if we are able to see that 0 1 and 1 2 are a different way in the sequence. But this is of huge importance. My asymmetry of the protocosms, I signed with 0+1 and 2+1 in the original of my book of the year 1998. What did I mean by that?

2+2 is a symmetric quadrupole of balanced quantum numbers. Consequently, one looks in vain for the number 4 in the Fibonacci sequence. Actually, it is split into 1 and 2+1. Such a compound, one also can recognize at the number 13, however. We have deeply substructured protocosms or/and cosms in universe. Two of ideal symmetry must split up. Ideal symmetry is called "massblock, MB". So we find these following cohesions:

MB + MB or top-PK of 2+2 + 2+2 followed by a multiple number of 2+2 in the depth.

+1 -1 give:
2+2+1 2+1 or MB+1 and $MB_x$+2+1= MB-1 ($MB_x$ means the deeper MB of zero)
0+1 1+2 like Fibonacci's 0 1 1 2.

It's a fact that protocosms start with these both possible asymmetries at the amplitude on n=1. If they would be symmetric, they externally were imperceptible. They just were a massblock like $MB_x$ that could hide itself inside of its internal world. Only the asymmetry reveals it on the outside. So we have in our universe protocosms with one single sub-protocosm on the amplitude, 0+1, and in the same relation, there are protocosms with 3 SPK on their amplitude, 1+2. Both types consequently are always integer and single loaded electromagnetically. All four charges are possible + - + -. By asymmetry, it becomes: + - + and - or - + - and +, result: + - or - +.

## 5. **"Big Bang" and Finish**

There was never just one Big Bang that would have created the complete universe from itself! Never! Many, many small bang have done it assuming about $10^{1,000,000,000,000,000}$ at least.

In all of my work, I have told you about the hierarchy of cosms and protocosms. So now here is the end!

If you couldn’t understand, do whatever you want.

There are roughly 100 years in the prophecy of S. W. Hawking for you and your apologists to come up with a better solution than me.

I wish you much success!
Bye!

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Declaration

I have written solutions in the context of my theories on the base of my own recognitions and a few information from listed literature as well as under the aid of incontrovertible fundamental laws of the natural sciences. This means that no other person has cooperated with me. Rather a teamwork even was declined of parts of institutes and of educational establishments because of the object of my work. The sciences go their way far away from my independent way.

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At oath's place

Arcus (Heinz-Joachim Ackermann)