Unified Theory 2

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Abstract .

The Unified Theory is not a theory of everything. Its theoretical basis is the axioms of dynamic space-matter, the limiting case of which is the Euclidean axiomatics of space-time. In essence, we are talking about a new technology of the theories themselves. In these methods, unified equations for electromagnetic fields (Maxwell) and equations for gravitational fields have been created. These are unified equations of the relativistic dynamics of the special theory of relativity and quantum relativistic dynamics. And these are unified equations of the general theory of relativity and quantum gravity. All this in one mathematical truth of the axioms of dynamic space-matter. One of the results, as a research consequence of such technology, is the Controlled thermonuclear reaction.

Chapters

1. Space-time is a special case of space-matter

Modern physics runs into many problems, facts that go beyond its theoretical concepts. The theoretical models and fundamental concepts themselves are largely contradictory. For example, they said that the Higgs field creates a mass of particles. Formally, this can be understood at the classical level, $m = \nu^2 V$ (frequency is determined by the stiffness coefficient and mass) as oscillations in the volume of the Higgs field (the energy of the boson in the Spontaneous Symmetry Breaking model), which are taken as the basis of the idea. But how the "mass of the Higgs field " creates the force of gravitational attraction of two masses, they forgot to say. There is no answer. Mathematics answers the question HOW? Physics answers the question WHY? We will look for physical reasons. This is very important.

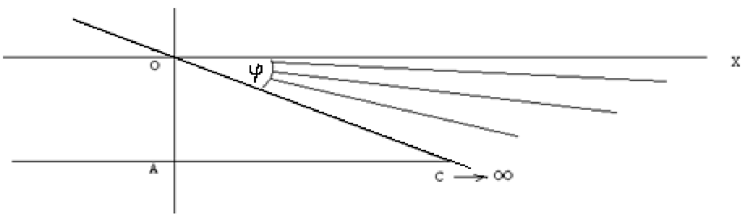
If (+) is the charge of a proton (p^+), in quark ($p = uud$) models it is represented by the sum: $q_p = \left(u = +\frac{2}{3}\right) + \left(u = +\frac{2}{3}\right) + \left(d = -\frac{1}{3}\right) = (+1)$, fractional charges of quarks, then exactly such (+1) charge (e^+) of the positron, quarks does not have. Such a model and representation of (+) charge does not correspond to reality. And the proton does not emit a photon in the exchange charge interaction with the electron of the atom. Euclidean axiomatics itself has its own insoluble contradictions. For example,

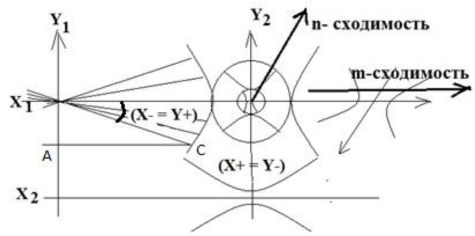
1. A set of points in one "partless" point gives a point again. Is it a point or a set of them, determined by elements and their interrelationships?
2. A set of lines in one "length without width" gives again a line. Is it a line or a set of them, defined similarly?

Euclidean axiomatics does not provide answers to such questions. If in the times before our era, these axioms suited everyone, for measuring areas, volumes..., then in modern research such axioms simply do not work. This, and many other fundamental contradictions, have no solutions in theories.

The fundamental fact is that there is no matter outside space and no space without matter. Space-matter are one and the same.

The main property of matter, motion, is represented by dynamic space-matter, with non-stationary Euclidean space. It follows from the properties of Euclidean axiomatics. Straight lines of a dynamic $(\varphi \neq const)$ bundle do not intersect the original line $(AC \to \infty)$ at infinity (Fig. 1), that is, they are parallel.





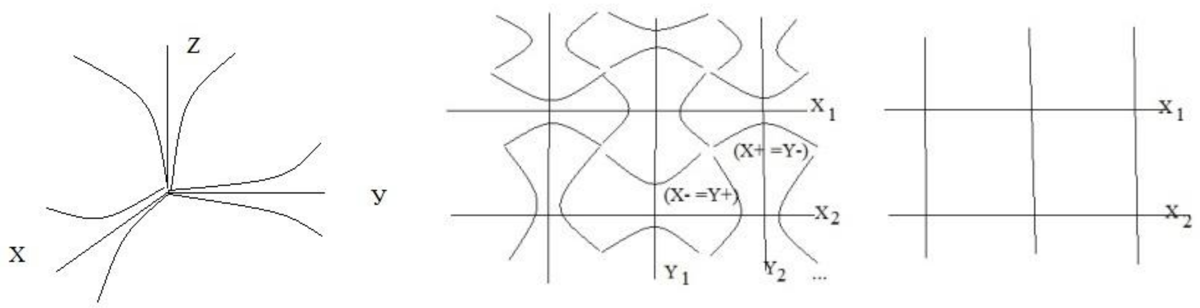


Fig. 1. Dynamic space-matter.

This means that when moving along the line AC, there is always a space (X-) that we cannot get into . Infinity cannot be stopped. Therefore, the dynamic (X-) space-matter of a bundle of parallel straight lines always exists. Orthogonal bundles of straight lines-trajectories have their own external $(X+)$ fields $(Y+)$. They form Indivisible Localization Regions $(X\pm)$, $(Y\pm)$. In this case, Euclidean space with a non-zero and dynamic angle $(\varphi \neq const)$ of parallelism in each of its (X, Y, Z) axes loses its meaning. But this is a real (X-), along the axis (X), space of a dynamic bundle of straight lines, which we do not see in Euclidean space.

In 2-dimensional space, the zero angle of parallelism (φ=0) for (X-) and (Y-) lines gives Euclidean straight lines. In the limiting case of the zero angle of parallelism (φ=0) in each axis, the dynamic space-matter passes into Euclidean space, as a special case of dynamic space-matter. These are deep and fundamental changes in the technology of theoretical research itself, which form our ideas about the world around us. As we see, in the Euclidean representation of space, we do not see everything.

So dynamic $(\varphi \neq const)$space-matter has its geometric facts as axioms that do not require proof.

<u>Axioms of dynamic space-matter</u>

1. A non-zero, dynamic angle of parallelism $(\varphi \neq 0) \neq const$ of a bundle of parallel lines determines orthogonal fields $(X-) \perp (Y-)$ of parallel lines - trajectories, as isotropic properties of space-matter.

2. The zero angle of parallelism $(\varphi = 0)$ gives "length without width" with zero or non-zero Y_0 radius of the sphere-point "having no parts" in the Euclidean axiomatics.

3. A pencil of parallel lines with zero angle of parallelism $(\varphi = 0)$, "equally located to all its points ", gives a set of straight lines in one "widthless" Euclidean straight line.

4. Internal $(X-),(Y-)$ and external $(X+),(Y+)$ fields of lines-trajectories of a non-zero $X_0 \neq 0$or $Y_0 \neq 0$ material sphere-point form an Indivisible Region of Localization $НОЛ(X\pm)$ or $НОЛ(Y\pm)$ dynamic space-matter.

5. In unified fields of $(X- = Y+)$ orthogonal $(Y- = X+)$ lines-trajectories $(X-) \perp (Y-)$ there are no two identical spheres-points and lines-trajectories.

6. The sequence of Indivisible Regions of Localization $(X\pm)$, $(Y\pm)$, $(X\pm)$… along the radius $X_0 \neq 0$or $Y_0 \neq 0$ sphere-points on one line-trajectory gives n convergence, and on different trajectories m convergence.

7. Each Indivisible Area of Localization of space-matter corresponds to a unit of all its Criteria of Evolution – KE, in a single $(X- = Y+)$, $(Y- = X+)$ space-matter on $m-n$ convergences,

$$НОЛ = КЭ(X- = Y+)КЭ(Y- = X+) = 1, \quad НОЛ = КЭ(m)КЭ(n) = 1,$$

in a system of numbers equal by analogy of units.

8. Fixing an angle $(\varphi \neq 0) = const$ or $(\varphi = 0)$ a bundle of straight parallel lines, space-matter, gives the 5th postulate of Euclid and the axiom of parallelism.

Any point of fixed lines-trajectories is represented by local basis vectors of Riemannian space:

$$e_i = \frac{\partial X}{\partial x^i} i + \frac{\partial Y}{\partial x^j} j + \frac{\partial Z}{\partial x^k} k, \qquad e^i = \frac{\partial x^i}{\partial X} i + \frac{\partial x^j}{\partial Y} j + \frac{\partial x^k}{\partial Z} k,$$ (Korn, p. 508),

with fundamental tensor $e_i(x^n) * e_k(x^n) = g_{ik}(x^n)$, and topology $(x^n = XYZ)$in Euclidean space. These basis vectors can always be represented as: $(x^i = c_x * t)$, $(X = c_x * t)$ linear components of space-time, then$v_i(x^n) * v_k(x^n) = (v^2) = \Pi$, we obtain the usual potential of space-matter, as a certain acceleration on the length. That is, Riemannian space is a fixed $(\varphi \neq 0 = const)$state of the geodesic$(x^s = const)$ lines dynamic$(\varphi \neq const)$space-matter $(x^s \neq const)$. That is, Riemannian space is a fixed $(\varphi \neq 0 = const)$state of the geodesic$(x^s = const)$ lines dynamic $(\varphi \neq const)$space-matter $(x^s \neq const)$. There is no such mathematics of Riemannian space $g_{ik}(x^s \neq const)$, with a variable geodesic. There is no geometry of the Euclidean non-stationary sphere, no geometry of Lobachevsky space, with variable asymptotes of hyperbolas. A special case of negative curvature $\left(K = -\frac{Y^2}{Y_0} = \frac{(+Y)(-Y)}{Y_0}\right)$(Smirnov v.1, p.186) of Riemannian space is the space of Lobachevsky geometry (Mathematical Encyclopedia v.5, p.439). There are nine distinctive features of Lobachevsky geometry from Euclidean geometry (Fig. 1.2).

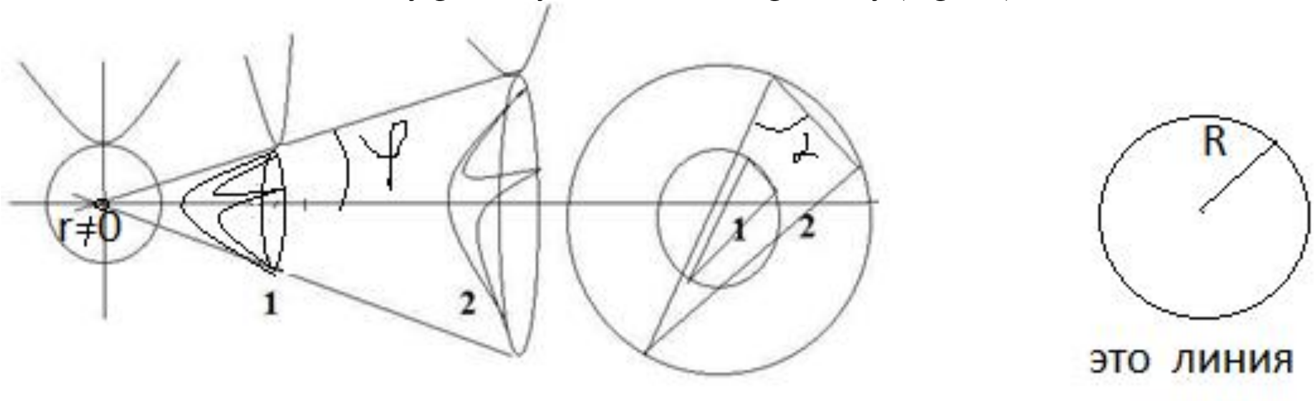


Fig. 1.2 Isotropic dynamics.

One of the features of Lobachevsky geometry is the sum of $(0^0 < \sum \alpha < 180^0)$the angles of a triangle, as opposed to their Euclidean projection $(\sum \alpha = 180^0)$onto a plane. Equal areas $S_1 = S_2$of triangles, at equal angles of parallelism $\varphi_1 = \varphi_2$of a bundle of parallel straight lines, give projectively similar triangles in the Euclidean plane with equal angles at the vertices. A circle in the Euclidean plane is a line in Lobachevsky geometry. Here, the Euclidean "length without width" is the radius of a circle in Lobachevsky geometry. The larger the radius, the longer the "line". Such circles on the surface of the Euclidean sphere are a set of straight lines in the Universe. In our case, the Euclidean sphere is also dynamic. How can we create theories of the "Big Bang" or "cyclic Universe" in such a sphere? The answer is no way. This is about nothing. The zero radius of such a circle $(r = 0)$means that there is no such circle, and there are no such lines. This is a conversation about nothing, they simply do not exist. This is about the questions of singularity with their infinite criteria and impossibilities. They are neither in mathematics nor in Nature. This gives the efficiency of conformal transformations. But by changing the quantity, the quality changes. These are philosophical categories. In their mathematical representation, we speak of different curvatures of the planes of triangles in a multi-sheet Riemannian space. The area of equal triangles in Lobachevsky geometry itself changes: $S = \frac{1}{2} a * b * sin\alpha = \frac{1}{2}\begin{vmatrix} i & j & k \\ a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \end{vmatrix}$. The matrix of transformations itself changes, the matrix of symmetries, the instrument of quantum theories, but already in quantum relativistic dynamics (it is fashionable to say in the Quantum Theory of Relativity) of a dynamic sphere in this case. Equal triangles of space-matter, tangent to the surfaces of equal spheres in Lobachevsky space, but with different radii of Euclidean spheres. In a dynamic$(\varphi \neq const)$ space-matter, these Euclidean spheres of different radii, are one **sphere of non-stationary Euclidean space,** which is not in the Euclidean axiomatics. Riemannian space, at the same time, has a dynamic topology $(x^n = XYZ \neq const)$, which is not in the Euclidean $(x^n = XYZ = const)$ stationary space. These axioms already solve the problems of the Euclidean axiomatics of a set of points in one point "having no parts" and a set of lines in one "length without width".

2.1. Unified Criteria of the Evolution of Space-Matter.

All the Criteria of Evolution of dynamic space-matter have been formed

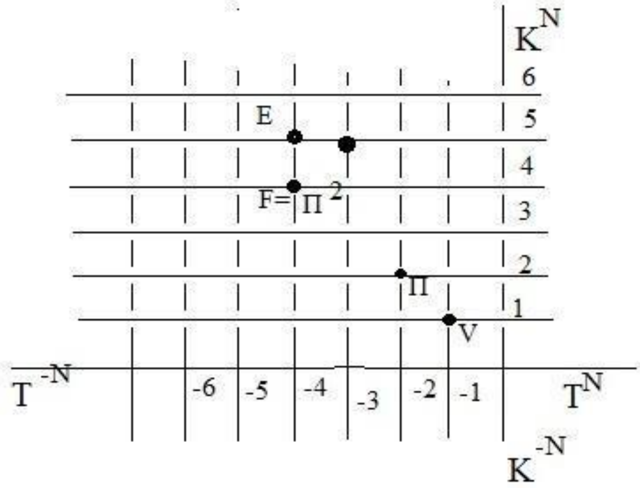


Fig.2.1. Criteria of Evolution in space-time.

in multidimensional on (mn) convergences, space-time, as in multidimensional space of velocities: $W^N = K^{+N} T^{-N}$. Here for (N=1), V= $K^{+1} T^{-1}$ velocity, $W^2 = \Pi$ potential, $\Pi^2 = F$ force…, 2-nd quadrant. Their projection on coordinate (K) or time (T) space-time gives: charge PK=q(Y+ =X -) in electro (Y+ =X -) magnetic fields, or mass PK=m(X+=Y-) in gravity (X+=Y-)mass fields, then the density $\rho = \frac{m}{V} = \frac{\Pi K}{K^3} = \frac{1}{T^2} = \nu^2$is the square of the frequency, energy E = Π^2K, momentum (p = Π^2T), action (ħ = Π^2KT), etc., of a single space-matter NOL= (X+=Y-) (Y+ =X -) =1. Every equation is reduced to these Evolution Criteria in $W^N = K^{+N} T^{-N}$, space-time. There are many other Criteria of Evolution in space-time that we do not yet use. For example, the Einstein energy $E = mc^2$, and the Planck energy $E = \hbar\nu$, have a direct relationship through mass and frequency, in the form: $m = \nu^2 V$, and so on.

2.2. Electro (Y+ =X -) magnetic and gravitational (X+=Y-) mass fields.

In a single (X+=Y-) (Y+ =X -) =1, space - matter, Maxwell's equations [1] for the electro (Y+ =X -) magnetic field are derived. Inside the solid angle $\varphi_X(X-) \neq 0$ of parallelism there is an isotropic stress of the A_n component flow (Smirnov, v.2, p.234). The full flow of the vortex through the intersecting surface $S_1(X-)$ is in the form:

$$\iint_{S_1} rot_n A dS_1 = \iint \frac{\partial(A_n / \cos\varphi_X)}{\partial T} dL_1 dT + \iint_{S_1} A_n dS_1 .$$

A_n component corresponds to a bundle of $(X-)$ parallel trajectories. It is a tangent along a closed curve L_2 in the surface S_2, where $S_2 \perp S_1$ and $L_2 \perp L_1$. Similarly, the relation follows:

$$\int_{L_2} A_n dL_2 = \iint_{S_2} rot_m \frac{A_n}{\cos\varphi_X} dS_2 .$$

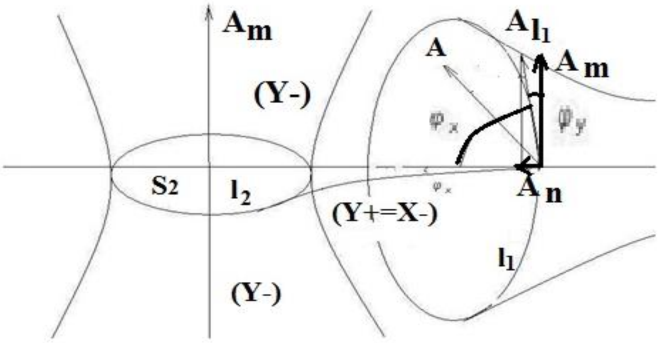


Fig. 2.2-1. Electromagnetic $(Y+=X-)$**and gravitational** $(X+=Y-)$**fields.**

Inside a solid angle $\varphi_X(X-) \neq 0$ the parallelism condition is satisfied

$$\iint_{S_2} rot_m \frac{A_n}{\cos\varphi_X} dS_2 \quad + \iint \frac{\partial A_n}{\partial T} dL_2 dT = 0 = \iint_{S_2} A_m(X-) dS_2 .$$

In general, there is a system of equations of (X - = Y+) field dynamics.

$$\iint_{S_1} rot_n A dS_1 = \iint \frac{\partial (A_n / \cos\varphi_X)}{\partial T} dL_1 dT + \iint_{S_1} A_n dS_1$$

$$\iint_{S_2} rot_m \frac{A_n}{\cos\varphi_X} dS_2 = -\iint \frac{\partial A_n}{\partial T} dL_2 dT$$, And $$\iint_{S_2} A_m dS_2 = 0 .$$

In Euclidean $\varphi_Y = 0$ axiomatics, taking the voltage of the vector component flux as the voltage of the electric field $A_n / \cos\varphi_X = E(Y+)$ and the inductive projection for a non-zero angle $\varphi_X \neq 0$ as the magnetic field induction $B(X-)$, we have

$$\iint_{S_1} rot_X B(X-) dS_1 = \iint \frac{\partial E(Y+)}{\partial T} dL_1 dT + \iint_{S_1} E(Y+) dS_1$$

$$\iint_{S_2} rot_Y E(Y+) dS_2 = -\iint \frac{\partial B(X-)}{\partial T} dL_2 dT$$, under the conditions $$\iint_{S_2} A_m dS_2 = 0 = \oint_{L_2} B(X-) dL_2 .$$

the well-known Maxwell equations apply.

$$c * rot_Y B(X-) = rot_Y H(X-) = \varepsilon_1 \frac{\partial E(Y+)}{\partial T} + \lambda E(Y+);$$

$$rot_X E(Y+) = -\mu_1 \frac{\partial H(X-)}{\partial T} = -\frac{\partial B(X-)}{\partial T};$$

The induction of a vortex magnetic field $B(X-)$ occurs in an alternating electric $E(Y+)$ field and vice versa.

For an open contour L_2 there are component ratios $\int_{L_2} A_n dL_2 = \iint_{S_2} A_m dS_2 \neq 0$. Under conditions of orthogonality of the components $A_n \perp A_m$ of the vector A, in non-zero, dynamic $(\varphi_X \neq const)$ and $(\varphi_Y \neq const)$ parallel angles, $A\cos\varphi_Y \perp (A_n = A_m \cos\varphi_X)$, there is a component dynamics $(A_m \cos\varphi_X = A_n)$ along the contour L_2 in the surface S_2. Both ratios are presented in full form.

$$\int_{L_2} A_m \cos\varphi_X dL_2 = \iint_{S_2} \frac{\partial (A_m(X+) * \cos\varphi_X)}{\partial T} dL_2 dT + \iint_{S_2} A_m dS_2$$

Zero flux through the surface S_1 of a vortex $(rot_n A_m)$ outside the solid angle $(\varphi_Y \neq const)$ of parallelism corresponds to the conditions

$$\iint_{S_1} rot_n A_m dS_1 \ + \ \iint \frac{\partial A_m}{\partial T} dL_1 dT = 0 = \iint_{S_1} A_n(Y-) dS_1 .$$

In general, the system of equations of (Y- = X+) field dynamics is represented in the form:

$$\iint_{S_2} rot_m A_m(Y-) dS_2 = \iint_{S_2} \frac{\partial (A_m(X+) * \cos\varphi_X)}{\partial T} dL_2 dT + \iint_{S_2} A_m dS_2$$

$$\iint_{S_1} rot_n A_m(X+) dS_1 = -\iint \frac{\partial A_m(Y-)}{\partial T} dL_1 dT \ , \qquad \iint_{S_1} A_n(Y-) dS_1 = 0 .$$

Introducing by analogy the $G(X+)$ field strength of the Strong (Gravitational) Interaction and the induction of the mass field $M(Y-)$, we obtain similarly:

$$\iint_{S_2} rot_m M(Y-) dS_2 = \iint \frac{\partial G(X+)}{\partial T} dL_2 dT + \iint_{S_2} G(X+) dS_2$$

$$\iint_{S_1} rot_n G(X+)dS_1 = -\iint \frac{\partial M(Y-)}{\partial T} dL_1 dT \quad , \quad \text{at} \quad \iint_{S_1} A_n(Y-)dS_1 = 0 = \oint_{L_1} M(Y-)dL_1 \quad .$$

Such equations correspond to gravitational $(X+=Y-)$ mass fields,

$$c * rot_X M(Y-) = rot_X N(Y-) = \varepsilon_2 * \frac{\partial G(X+)}{\partial T} + \lambda * G(X+)$$

$$\text{M(Y-)} = \mu_2 * N(Y-); \qquad rot_Y G(X+) = -\mu_2 * \frac{\partial N(Y-)}{\partial T} = -\frac{\partial M(Y-)}{\partial T};$$

by analogy with Maxwell's equations for electricity $(Y+=X-)$ magnetic fields. We are talking about the induction of mass $M(Y-)$fields in a variable $G'(X+)$gravitational field, similar to the induction of a magnetic field in a variable electric field. There are no options here. This is a single mathematical truth of such fields in a single, dynamic space-matter. We are talking about the induction of mass fields around moving masses (stars) as well as about the induction of magnetic fields around moving charges.

Thus, the rotations $rot_y B(X-)$of $rot_x M(Y-)$trajectories give the dynamics of $\text{E}'(Y+)$both $G'(X+)$the electric $(Y+)$and gravitational $(X+)$fields, respectively. And the rotations $(Y+)$of fields around $(X-)$trajectories and $(X+)$fields around $(Y-)$trajectories give the dynamics of the electromagnetic $rot_x E(Y+) \rightarrow B'(X-)$field and mass $rot_y G(X+) \rightarrow M'(Y-)$trajectories.

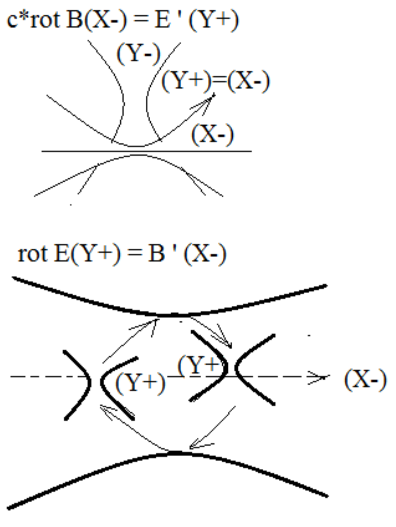


Fig.2.2-2. Unified fields of space-matter

The dynamics $E(Y+)$of the electric field generates an inductive magnetic $\text{B}(X-)$field, and vice versa. For example, a charged ball in a moving carriage has no magnetic field. But a compass on the platform will show a magnetic field. This is Oersted's experiment, which observed $(X-)$the magnetic field of moving $(Y+)$electrons of a conductor current.

And the same equations of the dynamics of gravitational (X+=Y-) mass fields are derived in a unified manner:

$$\text{c} * rot_X M(Y-) = rot_X N(Y-) = \varepsilon_2 * \frac{\partial G(\text{X+})}{\partial T} + \lambda * G(\text{X+})$$

$$\text{M(Y-)} = \mu_2 * N(Y-); \qquad rot_Y G(\text{X+}) = -\mu_2 * \frac{\partial N(Y-)}{\partial T} = -\frac{\partial M(Y-)}{\partial T};$$

The dynamics of G(X+)the gravitational field generates an inductive mass $M(Y-)$field, and vice versa. Similarly, when (X+)masses (stars) move, mass $(Y-)$fields are generated in induction. Here it is appropriate to dwell on the well-known formula $(E = mc^2)$, which we will dwell on in more detail. A body with a non-zero $(m \neq 0)$mass emits light with energy (L)in the system(x_0, y_0, z_0, ct_0) coordinates, with the law of conservation of energy: $(\text{E}_0 = \text{E}_1 + \text{L})$, before and after radiation. For the same mass, and this is the key point (<u>**the mass $(m \neq 0)$does not change**</u>), in another (x_1, y_1, z_1, ct_1)coordinate system, the law of conservation of energy with $(\gamma = \sqrt{1 - \frac{v^2}{c^2}})$Lorentz transformations, Einstein wrote in the form $(\text{H}_0 = \text{H}_1 + \text{L}/\gamma)$. Subtracting their difference, Einstein obtained:

$$(\text{H}_0 - \text{E}_0) = (\text{H}_1 - \text{E}_1) + \text{L}(\frac{1}{\gamma} - 1), \text{ or } (\text{H}_0 - \text{E}_0) - (\text{H}_1 - \text{E}_1) = \text{L}(\frac{1}{\gamma} - 1),$$

With separation of the difference in radiation energy. Both inertial coordinate systems are moving, but (x_1, y_1, z_1, ct_1)moves with a speed (v)relative to (x_0, y_0, z_0, ct_0). And it is clear that blue and red light have a difference in energy, which Einstein wrote down in the equation. Einstein wrote the equation itself as a difference in kinetic energies in the first expansion.

$$(\mathrm{K}_0 - \mathrm{K}_1) = \frac{\mathrm{L}}{2}(\frac{v^2}{c^2}..), \qquad \text{or} \qquad \Delta\mathrm{K} = (\frac{\Delta\mathrm{L}}{c^2})\frac{v^2}{2}$$

Here ($\frac{\Delta\mathrm{L}}{c^2} = \Delta m$)multiplier, has the properties of the mass of "radiant energy", or: $\Delta\mathrm{L} = \Delta mc^2$. This formula has been interpreted in different ways. The energy of annihilation $\mathrm{E} = \mathrm{m}_0 c^2$rest mass, or: $\mathrm{m}_0{}^2 = \frac{\mathrm{E}^2}{c^4} - p^2/c^2$, in relativistic dynamics. Here the mass with zero momentum ($p = 0$), has energy: $\mathrm{E} = \mathrm{m}_0 c^2$, and the zero mass of the photon: ($\mathrm{m}_0 = 0$), has momentum and energy $\mathrm{E} = \mathrm{p} * \mathrm{c}$. But Einstein derived another law of "radiant energy" ($\Delta\mathrm{L} = \Delta mc^2$), with mass properties. This is not the energy of a photon, and this is not the energy ($\Delta E = \Delta mc^2$)of the mass defect of the nucleons of the nucleus of an atom. Einstein saw what no one saw. Like a moving charge, with the induction of a magnetic field of Maxwell's equations, a moving mass (the mass ($m \neq 0$)does not change) induces mass energy ($\Delta\mathrm{L} = \Delta mc^2$), which Einstein found. For example, a charged sphere inside a moving carriage (**the charge ($q \neq 0$)does not change**) does not have a magnetic field. But a compass on the platform will show the magnetic field of a sphere in a moving carriage. It was precisely this inductive magnetic field, from moving electrons of the conductor current, that Oersted discovered. Then there were Faraday's experiments, the induction of vortex electric fields in an alternating magnetic field, the laws of induction and self-induction and Maxwell's equations. By analogy with the inductive energy of a magnetic field from a moving charge, Einstein derived a formula for the inductive, "radiant" energy of mass fields, from moving non-zero masses (**the mass ($m \neq 0$)does not change)** , including stars in galaxies. And here Einstein went beyond the Euclidean ($\varphi = 0$)axiomatics of space-time. In the axioms of dynamic space-matter ($\varphi \neq const$), we are talking about inductive $m(Y-)$mass fields, in complete analogy with Maxwell's equations. This is what Einstein saw, and no one else.

Newton presented the formula, but did not say WHY the force of gravity arises. Writing down the equation of the General Theory of Relativity, Einstein took the gravitational potential of zero mass: $\frac{\mathrm{E}^2}{p^2} = c^2$, in the form of $\frac{\mathrm{L}^2(\mathrm{Y}-)}{p^2} = Gv^2(X+) = \frac{8\pi G}{c^4}\mathrm{T}_{ik}$ the energy-momentum tensor. The false idea of Einstein's General Theory of Relativity is that it is believed that the equation presents a non-zero mass, as a source of curvature of space-time, as a source of gravity. In the equation of Einstein's General Theory of Relativity, as a mathematical truth in dynamic space-matter in full form:

$$R_{ik} - \frac{1}{2}Rg_{ik} - \frac{1}{2}\lambda g_{ik} = \frac{8\pi G}{c^4}\mathrm{T}_{ik}.$$

there is no mass: ($M = 0$), in its classical understanding. In mathematical truth, this is the difference in relativistic dynamics at two fixed points of Riemannian space, one of which is reduced to the Euclidean sphere, in the external, non-stationary ($\lambda \neq 0$)Euclidean space-time. In physical truth, in the equation of the General Theory of Relativity, Einstein, in the unified Criteria of Evolution, the formula (law) of Newton is "sewn up":

$$E = c^4K, P = c^4T, (c_i^2 - c_k^2 = \Delta c_{ik}^2) = \frac{E^2}{p^2} = (\frac{K^2}{T^2} = c^2), \Delta c_{ik}^2 = Gv^2(X+) \neq 0$$

$$\Delta c_{ik}^2 = \frac{c^4c^4K^2}{c^4c^4T^2} = \frac{G(c^2K_Y = m_1)(c^2K_Y = m_2)}{c^2(c^2T^2 = K^2)} = \frac{Gm_1m_2}{c^2K^2}, \qquad \Delta c_{ik}^2 = \frac{Gm_1m_2}{c^2K^2}, \qquad \Delta c_{ik}^2 c^2 = F$$

As we see, in the equation of Einstein's General Theory of Relativity, the gravitational force acts in fields with zero mass. It reads: the difference in mass flows $\Delta c_{ik}^2(Y-)$in the external potential field of gravity $c^2(X+)$, with their Equivalence Principle, gives the force. Let's define how this approach works. For example, for the Sun and the Earth ($M = 2 * 10^{33}g$)and ($m = 5.97 * 10^{27}g$), we get ($U_1 = \frac{(G=6.67*10^{-8})(M=2*10^{33})}{R=1.496*10^{13}} = 8.917 * 10^{12}$) gravitational potential at a distance from the Earth and $U_2 = \frac{(G=6.67*10^{-8})(m=5.97*10^{27})}{R=6.374*10^8} = 6.25 * 10^{11}$, the potential of the Earth itself. Then ($\Delta U = U_1 - U_2 = 8.917 * 10^{12} - 6.25 * 10^{11} = 8.67 * 10^{12}$), or ($\Delta U = 8.29 * 10^{12}$), we get:

$$\Delta U = \frac{8\pi G}{(c^4 = U^2 = F)}(\mathrm{T}_{ik} = \frac{(U^2K)^2}{U^2T^2} = \frac{U^2(UK = m)^2}{U^2T^2} = \frac{Mm}{T^2}), \text{ or } \frac{\Delta U}{\sqrt{2}} = \frac{8\pi G}{F}\frac{Mm}{T^2}, F = \frac{8\pi G}{(\Delta U/\sqrt{2})}\frac{Mm}{T^2} = \frac{GMm}{(\Delta U * T^2/\sqrt{2})/8\pi}$$

without dark masses. It remains to calculate $\frac{\Delta U * T^2}{8\pi\sqrt{2}} = \frac{8.29*10^{12}*(365.25*24*3600=31557600)^2}{8\pi\sqrt{2}} = 2.3 * 10^{26}$, which corresponds to the square of the distance ($R^2 = 2.24 * 10^{26}$)from the Earth to the Sun, or $F = \frac{GMm}{R^2}$, Newton's law. This approach corresponds to reality.

3. Transformations of relativistic dynamics.

a) Unified mathematical truths of STR and CTR

Special Theory of Relativity (STR).

Classic presentation:

$$Y^2 \pm (icT)^2 = \left(a^2 = \frac{c^4}{b^2} = const \right) = \overline{Y}^2 \pm (ic\overline{T})^2$$

circular $(+)$ or hyperbolic $(-)$ uniformly accelerated motion.

1). $\overline{X} = a_{11}X + a_{12}Y$, $Y = icT$, $T = \frac{Y}{ic}$,

$\overline{X} = a_{11}X + a_{12}\frac{Y}{ic}$

$\frac{\overline{Y}}{ic} = a_{21}X + a_{22}\frac{Y}{ic}$

$\overline{Y} = a_{21}X + a_{22}Y$, $\overline{Y} = ic\overline{T}$,

$\overline{X} = a_{11}X + \frac{a_{12}}{ic}Y$

2). $\overline{Y} = a_{21}icX + a_{22}Y$. $a_{11} = b_{11}$,

$\frac{a_{12}}{ic} = ib_{12}$, $a_{21}ic = ib_{21}$,

$a_{22} = b_{22}$.

$\overline{X} = b_{11}X + ib_{12}Y$

3). $\overline{Y} = ib_{21}X + b_{22}Y$, $\delta_{KT} = 1$ for $K = T$,

$b_{11}^2 - b_{12}^2 = 1 = b_{22}^2 - b_{21}^2$

conditions of orthogonality of vector components. In Globally Invariant conditions of the sphere , $b_{11} = b = b_{22}$,

$b_{12}^2 = b_{21}^2$, $(\pm b_{12})^2 = (\mp b_{21})^2$, $b_{12} = -\frac{a_{12}}{c}$,

$b_{21} = a_{21}c$, $b_{12} + b_{21} = 0$, the following holds: $a_{21}c = \frac{a_{12}}{c}$, or for:

$c = \frac{\Delta Y}{\Delta T}$, $\frac{a_{21}\Delta Y}{\Delta T} = \frac{a_{12}\Delta T}{\Delta Y}$.

4). Then two cases occur.

A). Conditions $(a_{21} = 0 = a_{12})$, zero projections , $\Delta Y = ic\Delta T$ spatial dynamics $(c = \Delta Y / \Delta T)$ time components of the photon quantum itself, and give GI – Globally Invariant Conditions.

B). The reality is that the photon, which synchronizes the relativistic dynamics, has its own volume $(a_{21} \neq 0) \neq (a_{12} \neq 0)$ in space-time. Such a reality corresponds to

Quantum Theory of Relativity (QTR).

The Special Theory of Relativity is invalid under the following conditions:

1) not uniformly accelerated $(a^2 \neq const)$ motion.

2). Due to the uncertainty principle $\Delta Y = c\Delta T$, the very impossibility of fixing points in space-time makes Lorentz transformations hopeless.

3) The wave function of a quantum is brought to its initial state by introducing a gauge field, in the absence of relativistic dynamics, in the very process of its dynamics, that is, in the absence of quantum relativistic dynamics.

Relativistic dynamics at the angle of parallelism $\alpha(X-)$ trajectories of quantum of space - matter.

Instead of X,Y , projections K_Y, K_x, of dynamic radius K, of dynamic sphere, tangent to surface of dynamic solid angle $\alpha^0(X-) \neq const$, parallelism are considered. We are talking about material sphere with non-zero minimal radius $Y_0 = 1 = ch0$, and wave function $\psi = K_Y - Y_O$. $Y = K_Y$, $X = K_X$.

1). $\overline{K}_Y = a_{11}K_Y + a_{12}K_X$, $\overline{K}_X = a_{21}K_Y + a_{22}K_X$, where $K_X = cT$, $T = \frac{K_X}{c}$, is the time entered.

2). $\overline{K}_Y = a_{11}K_Y + \frac{a_{12}}{c}K_X$, $\frac{\overline{K}_X}{c} = a_{21}K_Y + \frac{a_{22}}{c}K_X$, or $\overline{K}_Y = a_{11}K_Y + \frac{a_{12}}{c}K_X$, $\overline{K}_X = a_{21}cK_Y + a_{22}K_X$.

A). In external GI – Globally Invariant conditions , the components $\cos\gamma = \sqrt{(+a_{11})(-a_{11})} = ia_{11}$ give the uncertainty principle, with a certain probability density $|\psi|^2$ in the experiment, and a transformation matrix:

$\overline{K}_Y = ia_{11}K_Y + (\frac{a_{12}}{c} = b_{12})K_X$

3). $\overline{K}_X = (a_{21}c = b_{21})K_Y + ia_{22}K_X$.

For angles of parallelism $\alpha^0(X-) = 0$, in GI, such that

4). $a_{11} = \cos(\alpha^0 = 0^0) = 1 = b$, $(b = 1)K_Y = K_Y$, $a_{22} = \cos(\alpha^0 = 0^0) = 1 = b$, $(b = 1)K_X = K_X$, the following conditions hold

5). $\frac{a_{12}}{(c = 1)} = b = a_{21}(c = 1)$, $b_{12} = b = b_{21}$, the reality of the uncertainty principle: $\Delta Y = 0 = (+Y) + (-Y)$. We are talking about LI - local invariance in the volume $(a_{21} \neq 0) \neq (a_{12} \neq 0)$.

5). Pauli (p. 14): "… it was precisely **assumed** … $\chi\sqrt{1-\frac{W^2}{c^2}}$ …", or Smirnov (vol. 3, p. 195): "… let's assume… $(b_{12} = ab) = -b_{21}$ … " That is, there is no initial reason for such positions. But already from these positions, for an unknown reason, according to Smirnov, mathematical truths follow:

$\overline{X} = bX + iabY$

$\overline{Y} = -iabX + bY$,

$b^2 - a^2b^2 = 1 = -a^2b^2 + b^2$, $b^2(1-a^2) = 1$,

$b = \frac{1}{\sqrt{1-a^2}}$

$\overline{X} = \frac{X + iaY}{\sqrt{1-a^2}}$, $\overline{Y} = \frac{Y - iaX}{\sqrt{1-a^2}}$.

6). Substituting the initial values $Y = icT$, $\overline{Y} = ic\overline{T}$, we obtain:

$\overline{X} = \frac{X - acT}{\sqrt{1-a^2}}$, $ic\overline{T} = \frac{icT - iaX}{\sqrt{1-a^2}}$,

$\overline{T} = \frac{T - \frac{a}{c}X}{\sqrt{1-a^2}}$, $a = \frac{W}{c} = \cos\alpha^0$,

Lorentz transformations in classical relativistic dynamics. $\overline{X} = \frac{X - WT}{\sqrt{1-W^2/c^2}}$,

$\overline{T} = \frac{T - \frac{W}{c^2}X}{\sqrt{1-W^2/c^2}}$, $\overline{W} = \frac{V + W}{1 + VW/c^2}$.

transition of CTO to STO.

There are mathematical truths of the transition of the Quantum Theory of Relativity into the transformations of the Special Theory of Relativity.

For zero angles of parallelism in the Euclidean axiomatics, with velocities less than the speed of light $W_Y < c$, there are limiting cases of transition of quantum relativistic dynamics of vector components, $a_{22} = (\cos(\alpha^0 = 0) = 1) = a_{11}$, $a_{22} = 1$, $a_{11} = 1$, $Y = WT$, period $(T = 1)$.

In Globally Invariant conditions, $ia_{11} = ia = ia_{22}$, the matrix has the form

$\overline{K}_Y = ia_{11}K_Y + b_{12}K_X$ $\qquad$ $\overline{K}_Y = iabK_Y + bK_X$

6). $\overline{K}_X = b_{21}K_Y + ia_{22}K_X$, or $\overline{K}_X = bK_Y + iabK_X$,

$\overline{K}_Y = iabK_Y + bK_X$

$\overline{K}_X = bK_Y + iabK_X$

The same GI form of representation $K_Y = \psi = Y - Y_0$ takes place at any multiple point $T \leq \Delta T$ in time.

7). Under orthogonality conditions $\delta_{KT} = 1$, $K = T$, we have $-a^2b^2 + b^2 = 1 = b^2 - a^2b^2$,

$b^2(1-a^2) = 1$, $b = \frac{1}{\sqrt{1-a^2}}$.

matrix multiplier with the conditions: $ia_{11} = ia = ia_{22}$, or $a_{11} = a = a_{22}$.

B). Already in LI - Locally Invariant conditions, relativistic dynamics $a_{11} \neq a_{22}$, with external GI conditions, the following takes place:

$\overline{K}_Y = b(a_{11}K_Y + K_X)$

8) $\overline{K}_X = b(K_Y + a_{22}K_X)$, where: from $K_Y = \psi + Y_0$, $K_X = c(T = \frac{X}{c} = \frac{\hbar}{E})$, it follows that

$A_K = b(a_{11}Y_0 + K_X)$.

This is the moment of truth of the relativistic dynamics of the quantum of space-matter, which in modern theories is represented by a gauge A_K field $\psi = \psi_0 \exp(ap \neq const) + A_K$.

9). According to the terms $a_{22} = \frac{K_X}{cT} = \frac{W}{c} = a = a_{11}$, GI - dynamics, $a = a_{22} = a_{11}$,

$b = \frac{1}{\sqrt{1-a^2}} = \frac{1}{\sqrt{1-W^2/c^2}}$, the transformation matrix takes the form:

$\overline{K}_Y = \frac{a_{11}K_Y + cT}{\sqrt{1-a_{22}^2}}$, $\overline{K}_Y = \frac{a_{11}K_Y + cT}{\sqrt{1-W^2/c^2}}$,

$c\overline{T} = \frac{K_Y + a_{22}cT}{\sqrt{1-a_{22}^2}}$, $\overline{T} = \frac{K_Y/c + a_{22}T}{\sqrt{1-W^2/c^2}}$,

$\overline{W}_Y = \frac{\overline{K}_Y}{\overline{T}} = \frac{a_{11}K_Y + cT}{K_Y/c + a_{22}T}$, $\overline{W}_Y = \frac{a_{11}W_Y + c}{a_{22} + W_Y/c}$, in the conditions of LI, $(a_{22} \neq a_{11}) \neq 1$,

$(\overline{K}_Y=\overline{Y})=\frac{(a_{11}=1)(K_Y=Y)\pm WT}{\sqrt{1-W^2(X-)/c^2}}$, $\overline{Y}=\frac{Y\pm WT}{\sqrt{1-W^2/c^2}}$, , $\overline{T}=\frac{K_Y/c+(a_{22}=1)T}{\sqrt{1-W^2(X-)/c^2}}$, $K_Y=K(\cos\alpha^0=\frac{W}{c})$ $\overline{T}=\frac{T\pm KW/c^2}{\sqrt{1-W^2/c^2}}$, in the Lorentz transformations of classical relativistic dynamics.	in extreme sports when : $a_{11}=\frac{W}{c}=\alpha=\frac{1}{137.036}$, $W=\alpha\ c$, $\alpha=\frac{q^2}{\hbar c}$ 10). The maximum speeds $W_Y=c$, under conditions $a_{22}=a_{11}\neq 1$, give $\overline{W}_Y=\frac{c(a_{11}+1)}{(a_{22}+1)}=c$ the constant speed of light $\overline{W}_Y=c=W_Y$, in any coordinate system.

A more profound conclusion about such quantum relativistic dynamics is that, given a constant isotropic Euclidean sphere $(K_Y)(cT=K_X)$of space-time, in the dynamic $(\uparrow a_{11}\downarrow)(\downarrow a_{22}\uparrow)=1$, space-matter, there is an ellipsoid dynamics $(\overline{K}_Y)(c\overline{T}=\overline{K}_X)$. Conversely, looking at the dynamic ellipsoid of space-time, there is an initial stationary Euclidean sphere inside it.

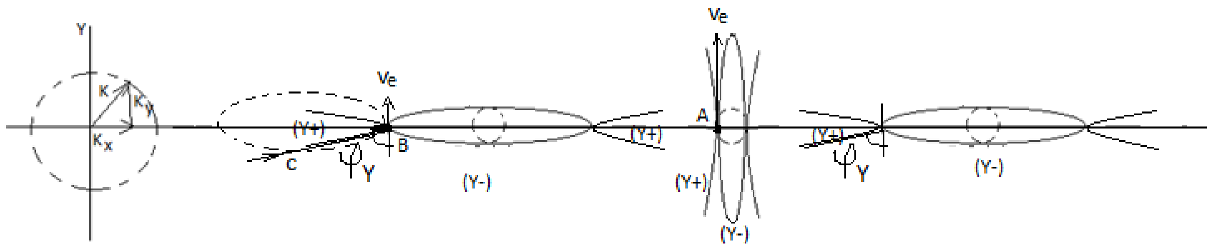


Fig.3.1. Quantum relativistic dynamics of space-matter of the electron

Such transformations in the angles of parallelism of dynamic space-matter, with the induction of relativistic mass, are impossible in the Euclidean axiomatics $(a_{11}=1)(a_{22}=1)=1$. This means that in the Euclidean axiomatics, it is impossible to create the Quantum Theory of Relativity. Such quantum relativistic dynamics of velocities is determined by the dynamics $(a_{11}=cos\varphi_Y)$of the angles of parallelism (φ_Y), for example, for $(Y\pm)$a quantum. For $(Y\pm=e)$an electron, the speed of light (c)changes inside the electron within the angle of parallelism (φ_Y). In the field $(Y-=e)$of an electron at point (B), we speak of the speed of an electron $(v_e=c*cos\varphi_Y=c*(\alpha=\frac{1}{137}))$. At point (A), we speak of the speed $(c*cos(\varphi_Y=0)=c)$of a photon inside the electron. To the question of where the space of velocities of the photon absorbed by the electron goes, the answer is - inside the electron there is the speed of light at point (A). the electron itself has a speed of $(v_e=\alpha*c)$. This is the speed of point (B) of the electron. It is clear that at point (A) the electric field of the electron $(Y+=E)$is reduced to zero and the electron exhibits the properties of the tunnel effect. In $E(Y+)$the electric field of the electron itself, we speak about the space of velocities of this field with the effects of $(v_E=c*sin\varphi_Y=c\sqrt{1-\frac{v_e^2}{c^2}})$the quantum relativistic dynamics of each point on $(Y-=e)$the electron's trajectory.

The quanta of space-matter have exactly the same dynamics $(X\pm)$.

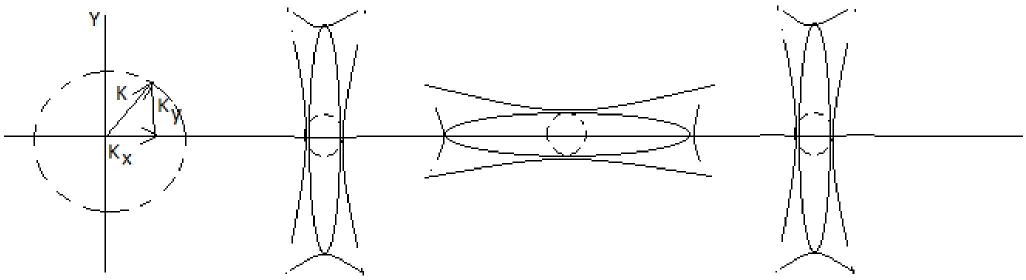


Fig.3.2. Quantum $(X\pm)$relativistic dynamics of space-matter

From the transformations of relativistic dynamics: $(c*t)^2-(x)^2=\frac{c^4}{b^2}=(c*\bar{t})^2-(\bar{x})^2$, one can always move to the equations of a dynamic ellipsoid: $\frac{\rho^2}{(a)^2}+\frac{x^2}{(b)^2}=1$, in the form: $\frac{c^4}{(ct)^2b^2}+\frac{x^2}{(ct)^2}=1$, or a hyperboloid: $\frac{\rho^2}{(a)^2}-\frac{x^2}{(b)^2}=1$, in the form: $\frac{(t)^2b^2}{c^2}-\frac{x^2b^2}{(c)^4}=1$, in the selected Evolution Criteria.

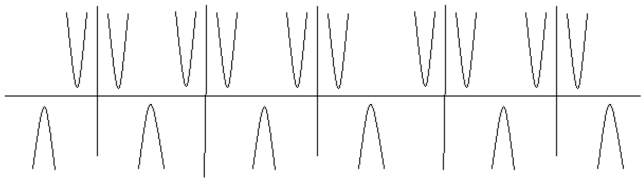
Both theories of STR and CTR allow for superluminal ($v_i = N*c$) velocity space:

$$\overline{W_Y}=\frac{c+Nc}{1+c*Nc/c^2}=c, \qquad \overline{W_Y}=\frac{a_{11}Nc+c}{a_{22}+Nc/c}=c, \text{ For } a_{11}=a_{22}=1.$$

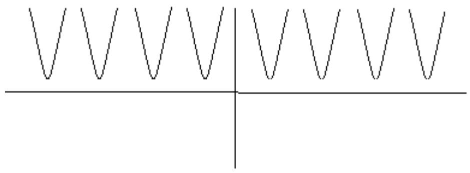
In quantum relativistic dynamics (Quantum Theory of Relativity) we have:

$$(\uparrow a_{11}\downarrow)(\downarrow a_{22}\uparrow)=1, \qquad \bar{K}_Y=\frac{a_{11}K_Y+(cT=K_X)}{\sqrt{1-a_{22}^2}}, \qquad (c\bar{T}=\bar{K}_X)=\frac{K_Y+a_{22}(cT=K_X)}{\sqrt{1-a_{22}^2}}$$

For example, the $E(Y+)=(\rho\bar{K}_X)$electric $(Y+)$field strength and the acceleration field of the gravitational $G(X+)=(\rho\bar{K}_Y)$field are represented by the dynamics of the cosines of the angles of parallelism $(a_{11}=\cos\varphi_Y)$and $(a_{22}=\cos\varphi_X)$. Then: $(\cos\varphi_Y*\cos\varphi_X=1)$or $\cos\varphi_Y=\frac{1}{\cos\varphi_X}$, we substitute into the formulas and construct simplified graphs: $(y=\bar{K}_Y)=f(\varphi_X=x=\omega t)$.



$$\bar{K}_Y=\frac{\frac{1}{\cos\varphi_X}K_Y+K_X}{\sqrt{1-\cos^2\varphi_X}}$$



$$\bar{K}_Y=\frac{K_Y+\cos\varphi_X*K_X}{\sqrt{1-\cos^2\varphi_X}}$$

Fig.3.3. graph of the dynamics of quantum fields

This is in good agreement with the symmetry of the proton, which we will discuss further. We are talking about quantum relativistic dynamics $(Y+=X-)$,$(X+=Y-)$ quantum fields. Their normalization gives $(m-n)$the convergence of the physical vacuum in a single $(X\pm=Y\mp)$and dynamic, already in the quantum space-matter. These graphs give grounds to speak about quantum, wave dynamics of radiation and absorption ($e_j\leftrightarrow\gamma_i$)and $(p_j\leftrightarrow\nu_{i)}$quanta in $(\pm)$ entropy of dynamic space- matter of all $(m-n)$ convergence of the Universe, with relativistic dynamics $(\varphi=\omega T)$of periods of dynamics in $(m-n)$levels of physical vacuum.

b) Einstein's **General Theory of Relativity** (GTR) in space-matter.

The theory is characterized by the Einstein tensor (G. Korn , T. Korn), as a mathematical truth of the difference in the relativistic dynamics of two (1) and (2) points of Riemannian space, as a fixed $(g_{ik}=const)$state of dynamic $(g_{ik}\neq const)$space-matter. (Smirnov V.I. 1974, v.2).

$$R-\frac{1}{2}R_i a_{ji}=\frac{1}{2}grad(U), \quad \text{or} \quad R_{ji}-\frac{1}{2}Rg_{ji}=kT_{ji}, \quad (g_{ji}=const).$$

In this case, the transformation matrix is in uniform units of measurement

$$R_1=a_{11}Y_1+0$$
$$R_Y=0+a_{YY}Y_Y', \qquad a_{11}=a_{YY}=\sqrt{G}, \qquad R^2=a_{YY}^2Y_Y^2=GY_Y^2,$$

gives Newton's classical law in the form $Y_Y^2=\frac{m^2}{\Pi^2}$, $R^2=G\frac{m^2}{\Pi^2}$, or $F=G\frac{Mm}{R^2}$.

For relativistic dynamics in space-time we have the relations:

a) in the unified Criteria of Evolution

$$c^2T^2-X^2=\frac{c_Y^4}{b_Y^2}, \qquad b_Y=\frac{F_Y}{M_Y}, \qquad c_Y^4=F_Y, \qquad c^2T^2-X^2=\frac{M_Y^2}{F_Y},$$

$$F_Y=\frac{M_Y^2}{c^2T^2(1-W_X^2/c^2)}, \quad c^2T^2=R^2=\frac{R_0^2}{(cos^2\varphi_X=G)}, \quad F_Y=G\frac{Mm}{R^2(1-W_X^2/c^2)},$$

This is a relativistic representation of Newton's law, for mass (Y -) trajectories,

$$\frac{mW^2}{2}=\frac{GMm}{R}, \qquad W^2=\frac{2GM}{R}, \quad \text{or} \quad F_Y=G\frac{Mm}{R^2(1-2GM/Rc^2)}, \qquad (1-2GM/Rc^2)>0, \quad (R>\frac{2GM}{c^2})\neq 0$$

b) in the case of the General Theory of Relativity, it is not forbidden to represent the fundamental tensor of Riemannian space (Korn G., Korn T. (1973) p.508, 535) ($g_{Ji} = \boldsymbol{e_J}(x^n)\ \boldsymbol{e}_i(x^n)$by local basis vectors $\boldsymbol{e_J}(x^n)$and $\boldsymbol{e}_i(x^n)$in any (x^n)coordinate system in the form of a vector space of velocities (Korn G., Korn T. p.504). Then the tensors themselves $(g_{Ji}(1) = \Pi_1)$are $(g_{Ji}(2) = \Pi_2)$represented as gravitational potentials at points 1 and 2. Their difference $(\Delta g_{Ji} = \Delta\Pi)$in the equation of the General Theory of Relativity, gives the energy-momentum tensor in the unified Evolution Criteria in the form: $\Delta\Pi = \frac{8\pi G}{c^4}\left(T_{Ji} = \frac{\Pi^4 K^2}{\Pi^2 T^2} = \frac{\Pi^2 K^2}{T^2}\right)$or $\Delta\Pi = \Pi_1 - \Pi_2 = \frac{8\pi G}{c^4}\Pi_1^2\Pi_2$, or $c^4 = F = \frac{2*4\pi R^2 G\Pi_1\Pi_2}{R^2\left(1-\frac{2G(\Pi_2*R=M)}{R*c^2}\right)}$, where $4\pi R^2$ is the surface of the sphere, $(\Pi_1 R = M_1)$and $(\Pi_2 R = M_2)$the final form of $F = \frac{GM_1M_2}{R^2\left(1-\frac{2G(M)}{Rc^2}\right)}$the same relativistic representation of Newton's law, as a special case of the General Theory of Relativity. From these relations it follows only that $(1 - 2GM/Rc^2 \neq 0)$.

c) in the laws of classical physics, the formulas of Laplace and Kepler follow from simple relationships:$\frac{v^2}{R} = \frac{GM}{R^2}$, $\frac{R^3}{T^2} = \frac{GM}{(2\pi)^2}$, $\frac{R_1^3}{T_1^2} = \frac{R_2^3}{T_2^2}$, and $\frac{S_1}{t_1}(\omega_1 R_1) = \frac{S_2}{t_2}(\omega_2 R_2)$, $\frac{S_1}{t_1} = \frac{S_2}{t_2}$, $S_1 t_2 = S_2 t_1$, and $(\omega_1 R_1 = \omega_2 R_2)$, in Kepler's laws. The ellipse itself is obtained from the movement of the Sun with a speed of W = 217 km / s, then the Earth moves in the plane of the section of the surface of a conventional cylinder with a speed of v = 30 km / s, already along an ellipse at an angle to the speed of the Sun, which is in focus.

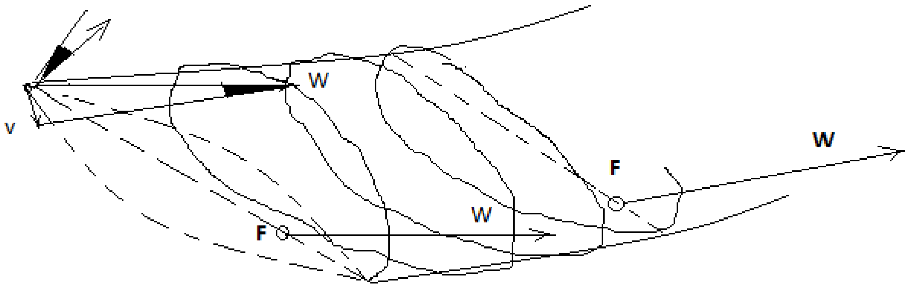


Fig.3 a . Earth's motion around the Sun in an ellipse with a precession of 23.5 ^{0}

In this case, the angle of precession of the Earth is calculated.

$\pi\ \frac{v}{W} = \pi\left(\frac{30}{217}\right) = \pi * 0{,}138249 = 0{,}4343216 = tg\omega$. Where from$\omega = arc\ tg 0{,}4343216 = 23{,}5^0$ precession angle. From: $(\omega_1 R_1 = \omega_2 R_2)$, and НОЛ = $(ch1) * (cos45^0)$ follow:

$$\omega_1 = \frac{1}{t_1},\ \omega_2 = \frac{1}{t_2}, \qquad \frac{R_1}{t_1} = \frac{R_2}{t_2} ch1 * cos45^0, \qquad \text{or:}$$

$$t_2 = \frac{R_1}{t_1} = \frac{R_2 = 150420000\text{км}}{R_1 = 6371\text{км}}(t_1 = 1\text{год}) * 1{,}543 \div 1{,}414 = 25764 \text{ года, or: } \frac{25764}{12} = 2147 \text{ лет},$$

the period of precession and the " era of Plato". Next, $v^2 - v_0^2 = 2gh$, for $v_0^2 = 0$, $g = \frac{GM}{R^2}$the kinetic energy is equal to the potential energy: $\frac{mv^2}{2} = mgh$. From: $h = R$, it follows $v^2 = \frac{2GM}{R}$. In Einstein's postulates, the speed of light is the limit. To accept "black holes" with an event horizon equal to the speed of light, one must divide by zero. The mistake here is that under the conditions of the "arrow of time", the impossibility of the cause (division by zero in mathematics) is replaced by an impossible consequence (singularity at a Euclidean point) $g = \frac{2GM}{(R=0))^2} = \infty$. If there is no division by zero, cause, then there is no singularity or consequence $(R = 0) = \frac{2GM=0}{c^2=conat}$. And this: $c^2 = \frac{2GM=0}{(R=0)} = 0$, does not correspond to Einstein's theory. Here, the initial premises are wrong. On the contrary : $R_0 = \frac{2G(M\neq 0)}{c^2}$ inside $(R < R_0) = \frac{2G(M\neq 0)}{(v>c)^2}$ "black sphere", there must be a superluminal space $(v > c)$of velocities, without violating Einstein's laws $(v = Nc)$, when the velocities inside the "black sphere" $\overline{W_Y} = \frac{c+Nc}{1+c*Nc/c^2} = c$, have the speed of light for us. In this case, we are talking about the trajectory of an external photon $(x = ct)$, with the fixation of electromagnetic dynamics in the coordinate plane $(K^2) \perp (ct)$, orthogonal to the trajectory of the photon. A photon, approaching the "black sphere" cannot enter the sphere, into superluminal space, just as a photon cannot enter the physical vacuum in the vastness of the Universe. In the gravitational "well", the photon circles around the already "black hole", since nothing flies out from there, for us. The trajectory of the photon

$(x = ct)$rotates on the surface of the sphere, like its geodesic. In this case, (ct)time and coordinate space (K^2)in the radial direction change places. We $(t \to \infty)$circle around the "black hole" infinitely long, and in mathematical formalism $(R \to 0)$, the geodesic lines of the photon inevitably converge to the center of the "black hole", where $(K \to 0)$the space itself disappears. This situation is called an $\overline{W_Y} = \frac{c+Nc}{1+c*Nc/c^2} = c$, inevitable singularity in the center of a "black hole" that does not exist in Nature. This contradicts $(R < R_0) = \frac{2G(M\neq 0)}{(v>c)^2}$, Einstein 's laws of physics. On the contrary, all the laws of physics work in this area as in a physical vacuum. We are not saying here that this is a zero singularity. A "black hole" cannot absorb mass because this mass must accelerate to the speed of light to overcome the event horizon $M \to 0$. Even if you break an atom into protons and electrons or electron-positron pairs in Hawking radiation, they cannot reach the speed of light of the event horizon. Even if a positron was "born" under the Euclidean line, "long without width", the event horizon. This is outside the Euclidean axiomatics of space-time, outside Einstein's postulates. And this means that Hawking radiation by "black holes" is impossible. Observed "black holes" have other causes and properties within the framework of the axioms of dynamic space-matter. This is beyond the scope of this article.

This means that the mass velocity space $(\sqrt{G}W2(2\pi R)\sqrt{G}W = 2GM)$cannot have the speed of light. We obtain for the proton mass ($M = 1{,}67 * 10^{-24}$г) , with a conditional circle($2\pi R$) sphere and maximum speed $(W = c)$we have$\left(R = \frac{GM}{2(2*3.14)c^2} = \frac{6.67*10^{-8}*1.67*10^{-24}}{2*(2*3.14)*9*10^{20}} = 0.98 * 10^{-13} cm\right)$ radius of the proton. This is the minimal "black hole" that does not emit a photon, with the quantum velocity space $(\gamma_0 + \nu_e + \gamma_0) = p$being less than the speed of light. And this is proof that the neutrino has a non-zero mass. The infinities obtained in this way do not exist, either in mathematics or in nature.

It is essential that the gravitational constant $a_{11} = a_{YY} = \sqrt{G}$ is a mathematical truth of the limiting ($a_{11} = a_{YY} = \cos\varphi_{MAX} = \sqrt{G}$) angle of parallelism, which is not in Einstein's General Theory of Relativity ($k = 8\pi G/c^4$) . The second point is the strict conditions of fixing the potentials $(g_{Ji} = const)$, reducing them to Euclidean space $(g_{ii} = 1)$. The introduction of the coefficient (λ) into the equation, changing the $R_{Ji} - \frac{1}{2}Rg_{Ji} - \frac{1}{2}\lambda g_{Ji} = kT_{Ji}$ vacuum energy, does not change the conditions of its fixation.

4. Scalar bosons.

The action of a quantum cannot $\hbar = \Delta p \Delta\lambda = F\Delta t \Delta\lambda$ be fixed in space $\Delta\lambda$ or time Δt. This is due to the non-zero $(\varphi \neq const)$angle of parallelism $(X-)$ or $(Y-)$trajectory $(X\pm)$ or $(Y\pm)$ quantum of space-matter. There is only a certain probability of action. Transformations of the relativistic dynamics of the wave ψ function of a quantum field with the probability density ($|\psi|^2$) of interaction in $(X+)$the field (Fig. 3) correspond to the Globally Invariant $\psi(X) = e^{-ia}\overline{\psi}(X)$, $a = const$ Lorentz group. These transformations correspond to rotations in the plane of the circle S, and relativistic - invariant Dirac equation.

$$i\gamma_\mu \frac{\partial\psi(X)}{\partial x_\mu} - m\psi(X) = 0, \quad \text{And} \quad \left[i\gamma_\mu \frac{\partial\overline{\psi}(X)}{\partial x_\mu} - m\overline{\psi}(X)\right] = 0.$$

Such invariance gives conservation laws in the equations of motion. For transformations of relativistic dynamics in hyperbolic motion,

$$\psi(X) = e^{a(X)}\overline{\psi}(X), \qquad ch(aX) = \frac{1}{2}(e^{aX} + e^{-aX}) \cong e^{aX}, \qquad a(X) \neq const,$$

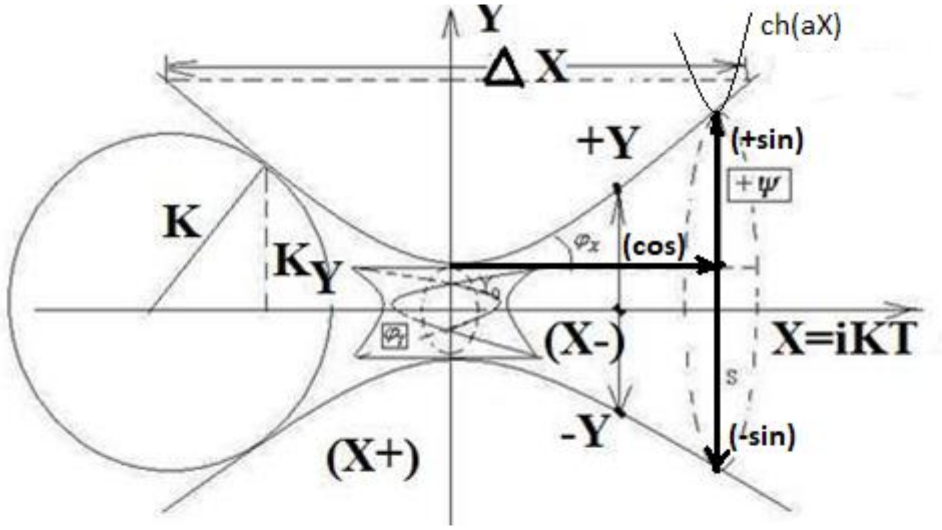


Fig. 3. Quantum $(X\pm)$ of dynamic space-matter.

Under Local Invariance (LI) conditions, for LIL= ch ($\frac{X}{Y_0}$)(X+)cos (φ)(X-)=1, φ≠90 ^{0}, at φ=0, cos (φ)=1, we have ch($\frac{X}{Y_0}$)=1, ch($\frac{X=0}{Y_0}$)=1, or ch($\frac{X}{Y_0\to\infty}$)=1. For (±ψ) wave (ψ=(Y-Y $_0$)) function, let's clarify. For simple reasons, we take $Y = e^{ax+i\omega t}$ for $i\omega = \sqrt{(+\omega)(-\omega)}$ constant extremals $(ax = 0)$, in the form: $Y = e^{i\omega t}$. $e^{i\omega t} \equiv (\cos\omega t + i\sin\omega t)$ and $(i\sin\omega t = \sqrt{(+\sin\omega t)\,(-\sin\omega t)}$). Here are ω the rotations in the YZ plane of the section of the trajectory (X-) with Lorentz invariance, of the quantum field of the wave, in the form $\omega = \frac{W}{\hbar}$, and $\hbar = pr$ with energy $W = \frac{p^2}{2m} + U$. Dynamics within a quantum $\psi = Ae^{i\omega t} = Ae^{-\frac{i}{\hbar}(Wt+pr)}$ in time: $\frac{\partial\psi}{\partial t} = -\frac{iW}{\hbar}\psi$, or $\frac{i\hbar}{\psi}\frac{\partial\psi}{\partial t} = W$ in space: $grad(\psi) = -\frac{ip}{\hbar}\psi$, and $div\ grad(\psi) = \frac{p^2}{\hbar^2}\psi$, from where: $p^2 = \frac{\hbar^2}{\psi}\Delta\psi$, or: $\frac{p^2}{2m} = \frac{\hbar^2}{2m*\psi}\Delta\psi$, in the final form we get: $\frac{i\hbar}{\psi_{max}}\frac{\partial\psi}{\partial t} = \frac{\hbar^2}{2m*\psi_{max}}\Delta\psi + U$, the dynamics of the energy of the entire $(\psi_{max} = 1)$quantum, with the mass of (m), for example, an electron. The ratio $\frac{\psi}{(\psi_{max}=1)}$, gives us the fixation point$(\psi = Y)$ quantum in the experiment, in any Evolution Criteria. Finally, we obtain $i\hbar\frac{\partial\psi}{\partial t} = \frac{\hbar^2}{2m}\Delta\psi + U\psi$, the Schrödinger equation. The key point is that we have: $\frac{\pi\psi^2}{\pi(\psi_{max})^2} = b$, the ratio of the cross-sectional area of the trajectory $(X-)$or $(Y-)$quantum of space-matter at a given moment in time (fixations in experiments) to the maximum interaction cross-section, already in the form of the probability of an event. This can be the Feynman integral over$(X- = \psi)$ trajectories $\frac{\psi^2}{2} = \int\psi d\psi$as a sum all meanings (ψ).
Here, $\psi \equiv \frac{\psi}{(\psi_{max}=1)} = i * \sin\varphi_x = \sqrt{(+\sin\varphi_x)(-\sin\varphi_x)} = i\sqrt{1-(\cos^2\varphi_x = \frac{{v_x}^2}{c^2})}$, with a change in the angle of parallelism (φ_x), a relativistic correction immediately arises in quantum relativistic dynamics $(\cos\varphi_x = a_{11})$ (quantum theory of relativity). And this is already a mathematical truth of the probabilistic interpretation of the wave function in space-matter, without options. Then for $i\psi = \sqrt{(+\psi)(-\psi)}$), we obtain for (X±): $i\psi = Ae^{ax}e^{i\omega t} = Ae^{ax+i\omega t}$. In this case the space of velocities: (X-)´= v (X)= v (cos φ+ i sin φ). Or: $iv(X) * \sin\varphi = v\sqrt{(+\sin\varphi)(-\sin\varphi)}$, an additional term appears in the Dirac equation.

$$\left[i\gamma_\mu \frac{\partial\overline{\psi}(X)}{\partial x_\mu} - m\overline{\psi}(X)\right] + i\gamma_\mu \frac{\partial a(X)}{\partial x_\mu}\overline{\psi}(X) = 0$$

The invariance of conservation laws is violated. Gauge fields are introduced to preserve them. They compensate for the additional term in the equation.

$$A_\mu(X) = \overline{A}_\mu(X) + i\frac{\partial a(X)}{\partial x_\mu}, \quad \text{And} \quad i\gamma_\mu\left[\frac{\partial}{\partial x_\mu} + iA_\mu(X)\right]\psi(X) - m\psi(X) = 0$$

Now, by substituting the value of the wave function into such an equation $\psi(X) = e^{a(X)}\overline{\psi}(X)$, $a(X) \neq const$ we obtain the invariant equation of relativistic dynamics.

$$i\gamma_\mu\frac{\partial\psi}{\partial x_\mu} - \gamma_\mu A_\mu(X)\psi - m\psi = i\gamma_\mu\frac{\partial\overline{\psi}}{\partial x_\mu} + i\gamma_\mu\frac{\partial a(X)}{\partial x_\mu}\overline{\psi} - \gamma_\mu\overline{A}_\mu(X)\overline{\psi} - i\gamma_\mu\frac{\partial a(X)}{\partial x_\mu}\overline{\psi} - m\overline{\psi} = 0$$

$$i\gamma_{\mu}\frac{\partial\overline{\psi}}{\partial x_{\mu}}-\gamma_{\mu}\overline{A}_{\mu}(X)\overline{\psi}-m\overline{\psi}=0,\quad \text{or}\quad i\gamma_{\mu}\left[\frac{\partial}{\partial x_{\mu}}+i\overline{A}_{\mu}(X)\right]\overline{\psi}-m\overline{\psi}=0.$$

This equation is invariant to the original equation

$$i\gamma_{\mu}\left[\frac{\partial}{\partial x_{\mu}}+iA_{\mu}(X)\right]\psi(X)-m\psi(X)=0$$

under conditions $A_{\mu}(X)=\overline{A}_{\mu}(X)$, And $A_{\mu}(X)=\bar{A}_{\mu}(X)+i\frac{\partial a(X)}{\partial x_{\mu}}$,

the presence of a scalar boson $(\sqrt{(+a)(-a)}=ia(\Delta X)\neq 0)=const$, within the gauge $(\Delta X)\neq 0)$ field (Fig. 3). These conditions $(\frac{\partial a(X)}{\partial x_{\mu}}\equiv f'(x)=0)$yield constant extremals $(f_{max})$of the dynamic $a(X)=f(x)\neq const$ space-matter in global invariance. And there are no scalar bosons here. These are: $A_{\mu}(X)=\bar{A}_{\mu}(X)+i\frac{\partial a(X)}{\partial x_{\mu}}$, the known gauge transformations. $a(X)$– 4-vector (A_0,A_1,A_2,A_3) electromagnetic scalar $(\varphi=A_0)$and vector $(\vec{A}=A_1,A_2,A_3)$potential in Maxwell's electrodynamics: $\vec{E}=-\nabla\varphi-\frac{\partial\vec{A}}{\partial t}$, and$\vec{B}=-\nabla \mathrm{x}\vec{A}$, gradient and rotor, or $F_{\mu\nu}=\partial_{\mu}A_{\nu}-\partial_{\nu}A_{\mu}$, with tensor ($F_{\mu\nu}$),$(E_X,E_Y,E_Z,E_X,E_Y,E_Z)$ components and Lorentz transformations. To such a potential is added the derivative of a scalar function, which does not change the potential itself. This is the key point. In the Yang- Mills theory it is represented by the symmetry group, $A_{\mu}=\Omega(x)A_{\mu}(\Omega)^{-1}(x)+i\Omega(x)\partial_{\mu}(\Omega)^{-1}(x)$, where$\Omega(x)=e^{i\omega}$, and $\omega$is an element of any (SU(N), SO(N), Sp(N), E $_6$, E $_7$, E $_8$, F $_4$, G $_2$) Lie group, $A_{\mu}\rightarrow A_{\mu}+\partial_{\mu}\omega$. In reality, this is a fixed state of the dynamic function: $K_Y=\psi+Y_0$, in quantum relativistic dynamics. Conventionally speaking, at each fixed point: $a\left(\frac{X\equiv Z}{Y_0}\right)=const$, there is its own (angle of inclination of branches) hyperbolic cosine, $K_Y=Y_0ch(\frac{X\equiv Z}{Y_0})\equiv e^{a\left(\frac{X\equiv Z}{Y_0}\right)}$, already in the orthogonal $(YZ\perp X)$ plane, and, beyond the dynamic (Y_0), in quantum relativistic dynamics. Thus, scalar bosons in gauge fields are created artificially to eliminate the shortcomings of the Theory of Relativity in quantum fields.

5 Spectrum of indivisible quanta of space-matter.

Indivisible Regions of Localization of quanta $(X\pm)$, $(Y\pm)$ dynamic space-matter are related to stable quanta of space-matter. In both cases we are talking about **facts** of reality. Stable$(Y\pm=e)$ electron, emits a stable $(Y\pm=\gamma)$photon, and interacts with stable $(X\pm=p)$protons and $(X\pm=\nu_{\mu})$neutrinos $(X\pm=\nu_e)$. In a single $(X-=Y+)$, $(X+=Y-)$ space-matter, they form the first $(ОЛ_1)$Region of Localization of indivisible quanta at their $m-n$convergences (Fig.).

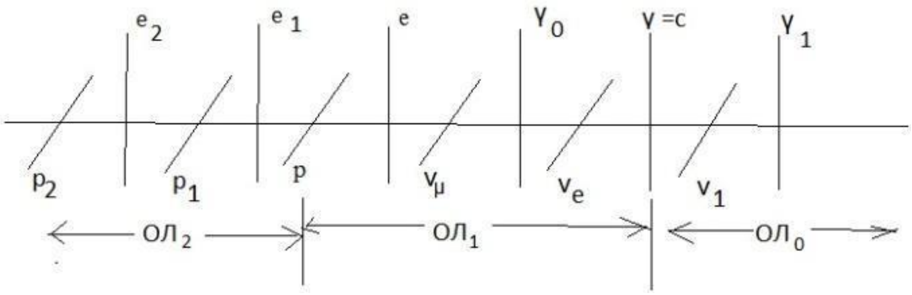


Fig. 4. Indivisible quanta of space-matter.

To maintain the continuity of the whole $(X-=Y+)$, a photon $(X+=Y-)$ is introduced into space-matter $(Y\pm=\gamma_0)$, similar to $(Y\pm=\gamma)$a photon. This corresponds to the analogy of the muon $(X\pm=\nu_{\mu})$ and electronic $(X\pm=\nu_e)$neutrino. In this case, both neutrinos (ν_{μ}), (ν_e) and photons (γ_0), (γ), could accelerate , like a proton or electron, to speeds (γ_1), ($\gamma_{2\dots}$), according to the same Lorentz transformations. Having a standard, outside of any fields, speed of an electron $(W_e=\alpha*c)$emitting a standard, outside of any fields photon $V(\gamma)=c$, the constant $\alpha=W_e/c=\cos\varphi_Y=1/137{,}036$gives, by analogy, the calculation of speeds $V(c)=\alpha*V_2(\gamma_2)$for superluminal photons in the form: $V_2(\gamma_2)=\alpha^{-1}c$, $V_4(\gamma_4)=\alpha^{-2}c$ …

$V_i(\gamma_i)=\alpha^{-N}c$, under standard, outside of any field's conditions. An orbital electron with an angle of parallelism $\alpha=\frac{W_e}{c}=\frac{1}{137}=\cos\varphi_{MAX}(Y-)$ to the trajectory does not emit a photon, as in rectilinear, acceleration-free motion. **<u>This postulate of Bohr, as well as the uncertainty principle of space-time and the equivalence principle of Einstein, are axioms of dynamic space-matter.</u>** The dynamics of mass fields within $\cos\varphi_Y=\alpha$, $\cos\varphi_x=\sqrt{G}$, interaction constants, gives the charge isopotential of their unit masses.

$m(p)=938{,}28MeV$, $G=6{,}67*10^{-8}$. $m_e=0{,}511\ MeV$, ($m_{\nu_\mu}=0{,}27\ MeV$),

$$\left(\frac{X=K_X}{K}\right)^2(X-)=cos^2\varphi_X=\left(\sqrt{G}\right)^2=G,\qquad \left(\frac{Y=K_Y}{K}\right)(Y-)=cos\,\varphi_Y=\alpha=\frac{1}{137{,}036}$$

$$m=\frac{F=\Pi^2}{Y''}=\left[\frac{\Pi^2T^2}{Y}=\frac{\Pi}{(Y/K^2)}\right]=\frac{\Pi Y=m_Y}{\left(\frac{Y^2}{K^2}=\frac{G}{2}\right)},\qquad \text{where}\qquad 2m_Y=Gm_X\ ,$$

$$m=\frac{F=\Pi^2}{X''}=\left[\frac{\Pi^2T^2}{X}=\frac{\Pi}{(X/K^2)}\right]=\frac{\Pi X=m_X}{\left(\frac{X^2}{K^2}=\frac{\alpha^2}{2}\right)},\qquad \text{where}\qquad 2m_X=\alpha^2\ m_Y$$

$$(\alpha/\sqrt{2})*\Pi K*(\alpha/\sqrt{2})=\alpha^2m(e)/2=m(\nu_e)=1{,}36*10^{-5}MeV,\quad \text{or: } m_X=\alpha^2m_Y/2,$$

$$\sqrt{G/2}*\Pi K*\sqrt{G/2}=G*m(p)/2=m(\gamma_0)=3.13*10^{-5}MeV,\quad \text{or: } m_Y=Gm_X/2$$

$$m(\gamma)=\frac{Gm(\nu_\mu)}{2}=9{,}1*10^{-9}MeV.$$

In a single $(Y\pm=X\mp)$or $(Y+=X-)$, $(Y-=X+)$space-matter of indivisible structural forms of indivisible quanta $(Y\pm)$and $(X\pm)$:

$(Y\pm=e^-)=(\boldsymbol{X}+=\nu_e^-)(Y-=\gamma^+)(\boldsymbol{X}+=\nu_e^-)$ electron, where NOL $(Y\pm)$= KE(Y +)KE (Y -), and

$(X\pm=p^+)=(\boldsymbol{Y}-=\gamma_0^+)(\boldsymbol{X}+=\nu_e^-)(\boldsymbol{Y}-=\gamma_0^+)$proton, where NOL $(X\pm)$=KE(X +)KE (X -),

We separate electromagnetic $(Y+=X-)$fields from mass fields $(Y-=X+)$in the form:

$(X+)(X+)=(Y-)$And $\frac{(X+)(X+)}{(Y-)}=1=(Y+)(Y-)$; $(Y+=X-)=\frac{(X+)(X+)}{(Y-)}$, or: $\frac{(\boldsymbol{X}+=\nu_e^-/2)(\sqrt{\boldsymbol{2}}*\boldsymbol{G})(\boldsymbol{X}+=\nu_e^-/2)}{(Y-=\gamma^+)}=q_e(Y+)$

$$q_e=\frac{(m(\nu_e)/2)(\sqrt{\boldsymbol{2}}*\boldsymbol{G})(m(\nu_e)/2)}{m(\gamma)}=\frac{(1.36*10^{-5})^2*\sqrt{2}*6{,}67*10^{-8}}{4*9{,}07*10^{-9}}=4{,}8*10^{-10}\text{СГСЕ}$$

$(Y+)(Y+)=(X-)$And $\frac{(Y+)(Y+)}{(X-)}=1=(X+)(X-)$; $(Y+=X-)=\frac{(Y-)(Y-)}{(X+)}$, or: $\frac{(\boldsymbol{Y}-=\gamma_0^+)(\boldsymbol{\alpha^2})(\boldsymbol{Y}-=\gamma_0^+)}{(\boldsymbol{X}+=\nu_e^-)}=q_p(Y+=X-)$,

$$q_p=\frac{(m(\gamma_0^+)/2)(\alpha^2/2)(m(\gamma_0^+)/2)}{m(\nu_e^-)}=\frac{(3{,}13*10^{-5}/2)^2}{2*137{,}036^2*1.36*10^{-5}}=4{,}8*10^{-10}\text{СГСЕ}$$

Such coincidences cannot be accidental. For a proton's wavelength $\lambda_p=2{,}1*10^{-14}$см, its frequency $(\nu_{\gamma_0^+})=\frac{c}{\lambda_p}=1{,}4286*10^{24}$Гцis formed by the frequency(γ_0^+) quanta, with mass $2(m_{\gamma_0^+})c^2=G\hbar(\nu_{\gamma_0^+})$.

$$1\text{г}=5{,}62*10^{26}MeV,\ \text{or}(m_{\gamma_0^+})=\frac{G\hbar(\nu_{\gamma_0^+}).}{2c^2}=\frac{6{,}67*10^{-8}*1{,}0545*10^{-27}*1{,}4286*10^{24}}{2*9*10^{20}}=5{,}58*10^{-32}\text{г}=3{,}13*10^{-5}MeV$$

Similarly for an electron $\lambda_e=3{,}86*10^{-11}$см, its frequency $(\nu_{\nu_e^-})=\frac{c}{\lambda_e}=7{,}77*10^{20}$Гцis formed by the frequency(ν_e^-) quanta, with mass $2(m_{\nu_e^-})c^2=\alpha^2\hbar(\nu_{(\nu_e^-})$, where$\alpha(Y-)=\frac{1}{137{,}036}$ constant, we get:

$$(m_{\nu_e^-})=\frac{\alpha^2\hbar(\nu_{(\nu_e^-})}{2c^2}=\frac{1*1{,}0545*10^{-27}*7{,}77*10^{20}}{(137{,}036^2)*2*9*10^{20}}=2{,}424*10^{-32}\text{г}=1{,}36*10^{-5}MeV,\ \text{for the neutrino mass.}$$

Such coincidences also cannot be accidental. The physical fact is the charge isopotential of the proton $p(X-=Y+)e$and electron in the hydrogen atom with the mass ratio. By analogy $(p/e\approx 1836)$, we speak of the charge isopotential $\nu_\mu(X-=Y+)\gamma_0$, and $\nu_e(X-=Y+)\gamma$, sub atoms, with the ratio of masses $(\nu_\mu/\gamma_0\approx 8642)$ and$(\nu_e/\gamma\approx 1500)$ respectively. In this case, sub atoms (ν_μ/γ_0) are held together by the gravitational field of the planets, and the subatomic (ν_e/γ) are held by the gravitational field of the stars. This follows from calculations of the atomic structures (p/e), sub atomics of planets $(p_1/e_1)(p/e)(\nu_\mu/\gamma_0)$and stars $(p_2/e_2)(p_1/e_1)(p/e)(\nu_\mu/\gamma_0)(\nu_e/\gamma)$, for: $e_1=2\nu_\mu/\alpha^2=10{,}2GeV)$, $e_2=2p/\alpha^2=35{,}2TeV)$,

НОЛ $=e_1*3{,}13*\gamma_0=1$, And НОЛ $=e_2*3{,}13*\gamma=1$. And also for $p_1=\frac{2e}{G}=15{,}3TeV$, and

$p_1(X-=Y+)e_1$"heavy atoms" inside the stars themselves. If quanta

$(m_X=p_1^-)=\frac{2(m_Y=e^-)}{G}=(15{,}3\ TeV)$and exist $(m_Y=e_2^-)=\frac{2(m_X=m_p)}{\alpha^2}=(35{,}24\ TeV)$, then similar to the generation by quanta(p_1/n_1) cores of the earth cores$(2\alpha p_1^-=238p^+={}^{238}_{92}U)$ uranium, $p^+\approx n$, with subsequent decay into a spectrum of atoms, quanta $p_2^-=\frac{2e_1^-}{G}=3{,}06*10^5TeV$, and (p_2/n_2), $(p_2\approx n_2)$the Sun's nucleus (stars, but in the Earth's atmosphere, particle fixations with energy $p_2=$ 305 E15 eV or e 2 = 3.524 E 13 eV , at least, are possible), generate nuclei of "stellar uranium", $(2\alpha p_2^- = 290 p_1^+ = {}^{290}U^*)$, with their exothermic decay into a spectrum of "stellar" atoms (p_1^+/e_1^-)in the solid surface of the star (Sun) without interactions with ordinary atoms(p^+/e^-) hydrogen and the spectrum of atoms. The emission of $(p_1^+ \rightarrow \nu_\mu^-)$muon antineutrinos by the Sun, like the emission $(e \rightarrow \gamma)$of photons, means the presence of such stellar matter on the Sun(p_1^+/e_1^-) without interaction with the proton- (p^+/e^-)electron atomic structures of ordinary matter (hydrogen, helium...). These are the calculations and physically acceptable possibilities.

In principle, it is sufficient to know the constants $G = 6{,}674 * 10^{-8}$, $\alpha = 1/137.036$limiting angles and velocity $\text{c} = 2.993 * 10^{10}$см/cto determine the Planck action constant for unit masses $(m_0 * m_0 = 1)$and their charges in the form:

$$\hbar = Gm_0 \frac{\alpha}{\text{c}} Gm_0 (1-2\alpha)^2 = \frac{(6{,}674*10^{-8})^2 * (1-2/(137.036))^2}{137.036*2.993*10^{10}} = 1.054508 * 10^{-27}\text{erg*s}$$

or: $m_0 * m_0 = (\text{КЭ} = m_m)(\text{КЭ} = m_n) = 1$, in the axioms of dynamic space-matter. Both large and small masses have quantum properties. For example, for the mass of the Sun.

$$\hbar \left(\frac{M_S * c^2}{2}\right) \hbar = 1, \text{ or } M_S(\alpha\sqrt{2})2\nu_e = 2 * 10^{33}\left(\frac{\sqrt{2}}{137}\right) * 1{,}78 * 10^{-27} * 2 * 1{,}36 * 10^{-5} = 1.$$

This means that such stellar masses $M_S(\sqrt{2})2 = 2.8 * M_S$can be held in their field. gravity ν_e- neutrinos. Planets can hold in their field gravity e- electrons and ν_μ- neutrinos. Similarly, the charge of unit masses ($m_0 = 1$) is defined as:

$$q = Gm_0\alpha(1-\alpha)^2 = 6{,}674 * 10^{-8}(1/137.036) * (1 - 1/137.036)^2 = 4.8 * 10^{-10},$$

and their relationships: $\hbar\alpha c = q^2$. Such calculations correspond to the model of the products of proton and electron annihilation. Mass fields (Y- = e) = (X+ = p) of the atom.

Fig. 5. Models of the products of proton and electron annihilation

The geometric **fact** here is the presence of antimatter in the substance of the proton and electron. At the same time, the products of proton annihilation

$$(X\pm = p^+) = (Y- = \gamma_0^+)(X+ = \nu_e^-)(Y- = \gamma_0^+)$$

and electron $(\text{Y}\pm = \text{e}-) = (\text{X}- = \nu_e^-) + (\text{Y}\pm = \gamma^+) + (\text{X}- = \nu_e^-)$.annihilation products

Similarly, in the unified fields of space-matter, the bosons of electroweak interaction:

$$НОЛ(Y) = (Y+= e^\pm)(X-= \nu_\mu^\mp) = \frac{2\alpha * \left(\sqrt{m_e(m_{\nu_\mu})}\right)}{G} = (1 + \sqrt{2} * \alpha)m(W^\pm), \text{ or:}$$

$$НОЛ(Y) = m(W^\pm) = \frac{2 * (\sqrt{0.511 * 0.27})}{137.036 * 6.674 * 10^{-8} * (1 + \frac{\sqrt{2}}{137.036})} = 80.4\ GeV,$$

with charge $e^\pm$, and inductive mass:$m(Y-) = (\sqrt{2} * \alpha) * m(W^\pm)$. It's like a "dark $m(Y-)$mass".

$$\text{НОЛ}(X) = (X+= \nu_\mu^\mp)(Y-= e^\pm) = \frac{\alpha * \left(\sqrt{(2m_e)m_{\nu_\mu} exp1}\right)}{G} = 94{,}8\ GeV = m(Z^0)$$

6. New stable particles

On colliding beams of muon antineutrinos (ν_μ^-)in magnetic fields:

$$НОЛ(Y = e_1^-) = (X- = \nu_\mu^-)(Y+ = \gamma_O^-)(X- = \nu_\mu^-) = \frac{2\nu_\mu}{\alpha^2} = 10.216 GeV,$$

in unstable form these are known levels of upsilonium .

On the counter beams of positrons (e^+), which are accelerated in the flow of quanta $(Y- = \gamma)$, photons of the **" white" laser** in the form of:

$$НОЛ(X = p_1^+) = (Y- = e^+)(X+ = \nu_\mu)(Y- = e^+) = \frac{2m_e}{G} = 15{,}3TeV$$
,

In colliding beams of antiprotons (p^-), the following occurs:

$$НОЛ(Y \pm = e_2^-) = (\boldsymbol{X}-= p^-)(Y+= e^+)(\boldsymbol{X}-= p^-) = \frac{2m_p}{\alpha^2} = 35{,}24\ TeV.$$

For oncoming ones $НОЛ(Y-) = (X+= p^\pm)(X+= p^\pm)$, the mass of the quantum is calculated

$$M(Y-) = (X+= p^\pm)(X+= p^\pm) = \left(\frac{m_0}{\alpha} = \overline{m_1}\right)(1-2\alpha)$$

or $$M(Y-) = \left(\frac{2m_p}{2\alpha} = \frac{m_p}{\alpha} = \overline{m_1}\right)(1-2\alpha) = \frac{0{,}93828\ GeV}{(1/137{,}036)}\left(1 - \frac{2}{137{,}036}\right) = 126{,}7\ GeV$$

This is the elementary particle that was rediscovered at the CERN collider.

P.S. In general models of the spectrum of atoms, the model of the quantum (X± =) of the ${}_2^4He$**helium** nucleus is

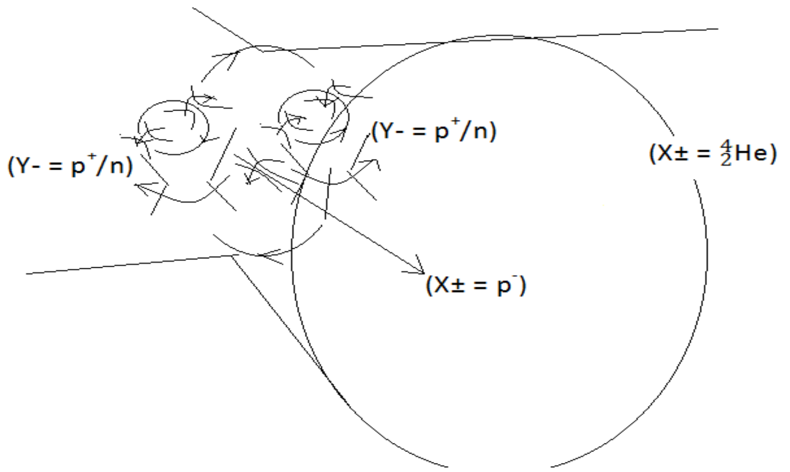


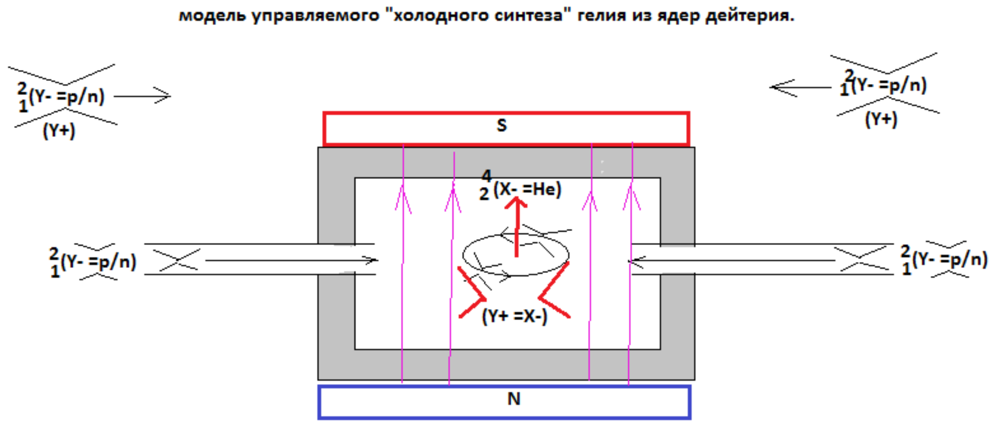
Fig.5.1 Synthesis model

structural form of quanta (Y- = p⁺/n) of the Strong Interaction, structured by the (X-) field, either $(X\pm= \nu_e^-)$antineutrino or antiproton $(X\pm= p^-)$in this case. According to the equations of mass field dynamics: $c * rot_Y M(Y-) = rot_Y N(Y-) = \varepsilon_2 * \frac{\partial G(X+)}{\partial T} + \lambda * G(X+)$, we are talking about a controlled $(v_Y * rot_X 2M(Y-= p^+/n) = \varepsilon_2 * \frac{\partial G(X+={}_2^4He)}{\partial T}$)thermonuclear reaction: 1). or in inelastic collisions $(X\pm= {}_2^4\alpha) = (Y-= p^+/n = e^{**+})(X+= \nu_e^-)(Y-= p^+/n = e^{**+})$ in a collider, colliding beams of **low-energy deuterium nuclei,** without primary plasma, 2). or by structuring deuterium plasma with **low-energy antiprotons,** in reactions

$(X\pm= {}_2^4\alpha) = (Y-= p^+/n = e^{**+})(X+= p^-)(Y-= p^+/n = e^{**+})$, ${}_1^2H + p^- + {}_1^2H \rightarrow {}_2^4He + p^-$

Today, controlled thermonuclear reaction: $({}_1^2H + {}_1^3H \rightarrow {}_2^4He + {}_0^1n + 17{,}6MeV)$is created in plasma. These are different nuclei. In space-matter $(Y-= X+)$, this is $({}_1^2H + {}_1^3H)$similar to the connection of mass trajectories of the "positron" $(Y-= p^+/n = e^{**+})$ or $(Y-= e^+)$, and "proton" $(X+= {}_1^3H = p^{**+})$or $(X+= p^+)$. Proton with positron, with mutually perpendicular$(Y-)\perp(X-)$ trajectories, this is hydrogen, in which everything goes to the rupture of the structure, in plasma in this case. And only with impacts in high-temperature plasma, in fields$(X+= p^+)$ Strong Interaction, vortex mass trajectories are formed $(Y-= p^+/n)(Y-= p^+/n) = (X\pm= {}_2^4He)$, already of a new core, as a stable structure.

More effective conditions for controlled Thermonuclear Reaction are counter flows of deuterium plasma, with perpendicular injection of antiproton beams at the point of meeting of plasma flows. The flow of deuterium plasma itself is controlled by a flow of ions, as a more stable state of plasma in TOKAMAK. Or inelastic collisions of deuterium beams of low energies, in a chamber with perpendicular lines of force of a strong magnetic field, **without primary plasma.** This will already be controlled " cold fusion" of helium.



The resulting alpha particles heat the water jacket of the already controlled thermonuclear reactor.
3) or in inelastic collisions (${}^{3}_{1}H + p^{+} \rightarrow {}^{4}_{2}He$) in a tritium collider with **high-energy proton beams,** without primary plasma.

Two grams of such plasma of synthesized helium are equivalent to 25 tons of gasoline. In all cases, trial experiments are needed on an already completed collider.

Elements of quantum gravity.

They follow from the General Theory of Relativity, the Einstein tensor, as a mathematical truth of the difference of relativistic dynamics at two (1) and (2) points of Riemannian space, with the fundamental tensor $g_{ik}(x^n) = e_i(x^n)e_k(x^n)$.

$g_{ik}(1) - g_{ik}(2) \neq 0$, $e_k e_k = 1$, under the terms $e_i(X-), e_k(Y-)$,

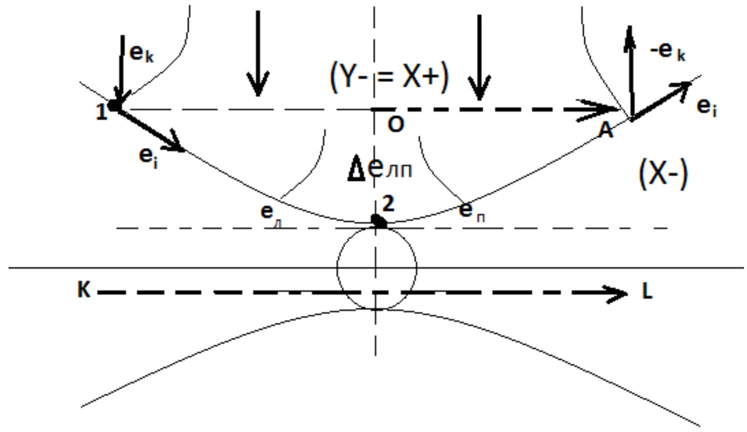


Figure 6. Quantum of space-matter

Point (2) is reduced to the Euclidean space of the sphere, where ($e_i \perp e_k$)and ($e_i * e_k = 0$). Therefore, in the neighborhood of point (2) we select the vectors ($e_л$) and ($e_п$) and take the average value $\Delta e_{лп} = \frac{1}{2}(e_л + e_п)$. Taking ($e_п = e_к$), the condition for reducing the transformations to the Euclidean sphere ($x^s_{2=п}$)and for $\Delta e_{лп} = \frac{1}{2}(e_л + e_к) = \frac{1}{2}e_к(\frac{e_л}{e_к} + 1)$, we get: $g_{ik}(1) - g_{ik}(2) \neq 0$,

$$g_{ik}(1) - \frac{1}{2}(e_i e_к = g_{ik})\left(\frac{e_л}{e_к} + 1\right)(2) = \kappa T_{ik}, \quad \left(\frac{e_л}{e_к} = R\right).(e_2 \neq e_п), \quad (e_п = \boldsymbol{\lambda} e_2) \quad \text{therefore} \quad g_{ik}(x^s_{2=п=k})$$

For ($e_л = e_к$), we have ($T_{ik} = 0$). Under the conditions ($e_л \neq e_п$), we are talking about the dynamics of the physical vacuum at fixed angles of parallelism, with different geodesics of the already dynamic sphere ($x^s_л \neq x^s_2 \neq x^s_п$)in fixed($e_л \neq e_2 \neq e_п$) points. For dynamic ($\partial e_п / \partial t \neq 0$)angles of parallelism, we speak about acceleration in the sphere (XYZ) of non-stationary Euclidean space. In other words, the geodesic of the non-stationary Euclidean sphere is already $g_{ik}(x^s_л \neq x^s_2 \neq x^s_п \neq const)$changing. We speak about acceleration of the already dynamic physical vacuum in its expansion. Therefore, ($\lambda \neq const$)for ($\varphi(X-) \neq const$) the field of the Universe. As we see, from ($Y \equiv \psi$) and $i\hbar\frac{\partial\psi}{\partial t} = \frac{\hbar^2}{2m}\Delta\psi + U\psi$, ($\frac{\partial^2\psi}{\partial t^2} > 0$) Figure 6, the acceleration dynamics increases from the initial state.

In full form, the equation of the General Theory of Relativity, as a mathematical truth:

$$R_{ik}-\frac{1}{2}Rg_{ik}-\frac{1}{2}\lambda g_{ik}=k\mathrm{T}_{ik}$$

What does this equation mean in classical terms? It all starts with Einstein's postulate of the maximum speed of light $(c)$for a mass $(m)$with a speed (w). This means that: $(c)\neq(w)$, or

$$c^2\neq w^2;\qquad c^2-w^2\neq 0;\ w^2=\frac{x^2}{t^2};\qquad (c*t)^2-(x)^2=const=(c*\bar{t})^2-(\bar{x})^2.$$

These are the well-known Lorentz transformations in relativistic dynamics. Fundamental here is the non-zero difference. Changing the course of time $\overline{(t)}$changes space $\overline{(x)}$, (Smirnov V.I.1974, v.3, part 1, p.195) with a relativistic correction for the mass$m(Y-)$ quantum field trajectories:

$$\frac{w^2}{c^2}=cos^2\varphi_{max}(Y-)=\alpha^2=(\frac{1}{137{,}036})^2;\qquad c^2-w^2=c^2\left(1-\frac{w^2}{c^2}\right)=c^2(1-\alpha^2)$$

For classical transformations of relativistic dynamics:

$$\overline{x_1}=a_{11}c*t_1-a_{12}x_1;\qquad c*\overline{t_1}=a_{21}c*t_1-a_{22}x_1;\ \text{with transformation matrix: } a_{ik}=\begin{matrix}a_{11}&a_{12}\\a_{21}&a_{22}\end{matrix}.$$

In the three-dimensional space-time of a non-zero Euclidean sphere, with an invariant geodesic$(x_1^s=const)$ curve, there will be four such equations. (Smirnov V.I. 1974, v.3, part 1, pp.195-198).

$$\begin{aligned}\bar{x}&=a_{11}c*t-a_{12}x-a_{13}y-a_{14}z;\\ \bar{y}&=a_{21}c*t-a_{22}x-a_{23}y-a_{24}z\\ \bar{z}&=a_{31}c*t-a_{32}x-a_{33}y-a_{34}z\\ c*\bar{t}&=a_{41}c*t-a_{42}x-a_{43}y-a_{44}z\end{aligned}\qquad \text{with } (a_{ik})\text{matrix transformations}\qquad \begin{matrix}a_{11}&a_{12}&a_{13}&a_{14}\\a_{21}&a_{22}&a_{23}&a_{24}\\a_{31}&a_{32}&a_{33}&a_{34}\\a_{41}&a_{42}&a_{43}&a_{44}\end{matrix}$$

in the well-known Lorentz group: $(x)^2+(y)^2+(z)^2-(c*t)^2=(\bar{x})^2+(\bar{y})^2+(z)^2-(c*\bar{t})^2$. Here we can already substitute numbers and calculate the transformations of relativistic dynamics of the unified Evolution Criteria: for example: energy $E=\Pi^2Y=(m=\Pi Y)*(\Pi=c^2)=m*c^2$, momentum $p=\Pi^2t$, mass $m=\Pi Y(X+=Y-)$. Here $\Pi=c^2=gY$, the acceleration potential (g)on the trajectory $(Y=Y-)$. Such transformations of relativistic dynamics in the inertial system of space -time without acceleration $(g=0)$in the Euclidean sphere $(a_{ii}=1)$without gravity, at point (1) Fig. 6, are the same as in the Euclidean sphere of space-time of a falling elevator in a gravitational field at point (2). Einstein was faced with the task of moving from the space-time of an inertial system in the Euclidean sphere without gravity to the space-time of the Euclidean sphere also without acceleration, but of a falling elevator in a gravitational field. In order to perform these transformations in relativistic dynamics, Einstein, in a mathematical procedure, added the potential of the gravitational field in the form of a tensor, the energy-momentum, to the acceleration potential (g)on the trajectory $(Y)$of space-time in an inertial system. $\Pi=w^2=\frac{Y^2}{t^2}=\frac{(E=\Pi^2Y)^2}{(p=\Pi^2t)^2}$This is a mathematical truth: $R_{ik}=\frac{1}{2}R(g_{ik}=gY)+\kappa(\mathrm{T}_{ik}=\Pi)$, already the Einstein tensor, in its classical form: $R_{ik}-\frac{1}{2}Rg_{ik}=\kappa\mathrm{T}_{ik}$. (Korn G., Korn T. (1973), p. 536). Or$(g_2=g_1\pm a)$ classical physics. Here $(R_{ik})$are the transformations of relativistic dynamics in the space-time of the Euclidean already another sphere, already another geodesic curvature $(x_2^s=const)$in the falling elevator in the field of gravitational potential $(\kappa\mathrm{T}_{ik}=\Pi)$. In other words, the gravitational field is measured by the curvature of space-time. Calculating the changes in space-time in relativistic dynamics without gravity at point (1): $\overline{x_1}=g_{ik}x_1$; $c*\overline{t_1}=g_{ik}c*t_1$; $(i,k=1,2,3,4)$and the changes in space-time in relativistic dynamics already with gravity at point (2): $\overline{x_2}=g_{ik}x_2$; $c*\overline{t_2}=g_{ik}c*t_2$; we can consider the changes in the curvature of the geodesic of the falling sphere $(x_2^s=const)$in the gravitational field $(x^s=X,Y,Z,ct)$.

$$\overline{(x_2-x_1)}^2=g_{i1}c^2*(t_2-t_1)^2-g_{i2}*(x_2-x_1)^2-g_{i3}*(y_2-y_1)^2-g_{i4}*(z_2-z_1)^2=(k\mathrm{T}_{i1})\ ;\ (\text{i}=1,2,3,4).$$

Basically, we are dealing with $(g_{ik})^2$ quadratic form$(g_{ik})(g_{ik}=g_{ir}R^r_{jkh})$ for the selected directions $(e_je_h=1)$ and $(e_ry^r=1)$transformations of the Riemann–Christoffel tensor (Korn, 1973, p. 535).

As we can see, this is a matrix in 5 columns and 4 rows, each of which is an equation of dynamics in a gravitational field, and is solved separately. Or in the general case of a radial representation of a sphere: $\overline{(x_2}-\overline{x_1)}^2=\Delta x_{21}^2$; $\overline{(t_2}-\overline{t_1)}^2=\Delta t_{21}^2$; in the form: $c^2*\Delta t_{21}^2-\Delta x_{21}^2=\frac{\Delta\Pi*\Pi}{g^2}$. And: $c^2*\Delta t^2\left(1-\frac{\Delta w^2}{c^2}\right)=\frac{\Delta\Pi*\Pi}{g^2}$; $c^2\left(1-\frac{\Delta w^2}{c^2}\right)=\frac{\Delta\Pi*\Pi}{(g^2*\Delta t^2=\Pi)}=\Delta\Pi$. The difference in speeds in an orbit is measured by the eccentricity (ε). Then $c^2(1-\varepsilon^2)=\Delta\Pi$. Taking the perihelion shift $\delta\varphi\approx\frac{\Delta A}{A}$, $A\delta\varphi=\Delta A$; we obtain the well-known Einstein formula: $c^2A\delta\varphi(1-\varepsilon^2)=(\Delta\Pi*\Delta A\equiv GM)$, $\delta\varphi\approx\frac{6\pi GM}{c^2A(1-\varepsilon^2)}=42{,}98''$for the perihelion of Mercury. This is also a mathematical truth. In these calculations: $\delta\varphi\approx\frac{6\pi GM}{c^2A(1-\varepsilon^2)}=\frac{6*3{,}14*6.67*10^{-8}*2*10^{33}}{9*10^{20}*5{,}791*10^{12}*0{,}958}=5{,}03356*10^{-7}rad$, $(1rad=206264{,}8")$; and $\delta\varphi=0{,}1038"$, for 1 period of Mercury 88 days, and 100 years on Earth, we get: $\delta\varphi*\frac{36525}{88}=43"$. And in these calculations the average value of the orbit of Mercury is taken

$(A = 5{,}791 * 10^{12} sm)$, which means that we are talking about the rotation of the entire space-matter around the Sun. In this case, the dynamics of the vacuum values of space-time $(\frac{1}{2} g_{ik} = 0)$at point (2) is not taken into account $(e_i \perp e_k)$. There is no dynamics here. But here we can already substitute numbers and calculate the curvature of space-time, with its interpolation into the potential of the space of gravitational field velocities. With zero gravitational potential, the equations:$R_{ik} = \frac{1}{2} R(g_{ik} = gY) + \kappa(T_{ik} = \Pi = 0)$ Einstein's General Theory of Relativity, transform into equal equations of Einstein's Special Theory of Relativity, at two different points (laboratories) of Euclidean space, thus confirming in mathematical truth the first postulate of Einstein.
$R_{ik} = (R = 1)(g_{ik})$; $\overline{x_2} = g_{ik} x_1$; $c * \overline{t_2} = g_{ik} t_1$; where $(i, k = 1,2,3,4)$, or $(c * \bar{t})^2 - (\bar{x})^2 = (c * t)^2 - (x)^2$.
Einstein's equation: $R_{ik}(1) - \frac{1}{2} R g_{ik}(2) = \frac{8\pi G}{c^4} T_{ik}$: we write in the form of gravitational potentials at two points of Riemannian space with a fundamental tensor:

$$R_{ik}(1) = e_i(x^n) e_k(x^n) = v_i v_k = \Pi_1 \quad \text{and} \quad g_{ik}(2) = e_i(x^n) e_k(x^n) = v_i v_k = \Pi_2$$

We understand that point (2) is represented by Euclidean space (r_0)without curvature. Note that the exact coincidence of point (2) of the curve with the circle is not in the mathematical truth of the full Einstein equation. Point (1) with curvature of Riemannian space (r) in a gravitational field. Then we will represent the gravitational potentials outside the masses in the form:

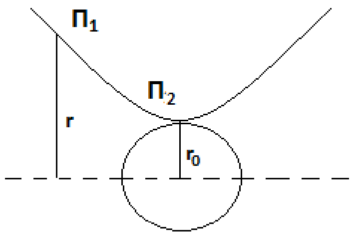


Fig.6a – gravitational potentials

$$\Pi_1 = c^2 (\frac{r}{r})^2, \quad \Pi_2 = c^2 (\frac{r_0}{r})^2, \text{ with the energy-momentum tensor:}$$

$$\frac{8\pi G}{c^4} T_{ik} = \frac{E^2}{p^2} = \frac{G(\Pi^2 K)^2}{(\Pi^2 t)^2} = \frac{G\Pi^2 \Pi^2 K^2}{c^4 \Pi^2 t^2},$$

$$\Pi_1 - \Pi_2 = \frac{G\Pi^2 K^2}{c^4 t^2} = \frac{G c^2 \Pi K^2}{c^2 \Pi t^2}, \qquad \Pi_1 - \Pi_2 = \frac{c^2 G K^2}{c^2 t^2}, \text{ or:}$$

$$c^2 (\frac{r}{r})^2 - c^2 (\frac{r_0}{r})^2 = \frac{c^2 G K^2}{c^2 t^2}, \; c^2 (1 - \left(\frac{r_0}{r}\right)^2) = \frac{c^2 G K^2}{c^2 t^2}, \qquad (1 - \left(\frac{r_0}{r}\right)^2) = \frac{x^2}{c^2 t^2},$$

$$\left(1 + \frac{r_0}{r}\right)\left(1 - \frac{r_0}{r}\right) = \frac{x^2}{c^2 t^2}, \left(1 + \frac{r_0}{r}\right) c^2 t^2 - \frac{x^2}{(1 - \frac{r_0}{r})} = s^2(x), \; s^2(x) = 0 \text{at } (x = 0).$$

$$\left(1 + \frac{r_0}{r}\right) c^2 t^2 - \left(1 - \frac{r_0}{r}\right)^{-1} x^2 = s^2, \text{ or:} \quad ds^2 = \left(1 + \frac{r_0}{r}\right) c^2 dt^2 - \left(1 - \frac{r_0}{r}\right)^{-1} dx^2.$$

These are the mathematical truths of the simplest model of radial relativistic space-time dynamics in a gravitational field without $(m_0 = 0)$mass: $\frac{E^2}{p^2} = c^2$, or: $\frac{E^2}{c^2} = p^2 + (m_0 = 0)^2 c^2$. And the first thing to note is the non-zero $(r_0 \neq 0)$radius by definition. This is the radius of a circle instead of a sphere in the Schwarzschild solution. And this is the condition $(R g_{ik} \neq 0)$ of the Einstein equation, as a mathematical truth in its full form. Here, talking about singularity is talking about nothing. There is no singularity in principle and by definition. The second point is that the Einstein equation considers gravity outside the sphere. There are no "travels" inside the sphere in the Einstein equation either, as in Newton's law $(r \neq 0)$. All subsequent models of "black holes" have an event horizon, and so on. Many models of "black holes", collapsing photon spheres (stars in the limit) passing the Schwarzschild sphere, their diagrams are naive, erroneous in the basic foundations and without arguments of the initial premises as causes, although mathematics and logic work further. But Einstein's equation is not about this at all. Einstein's equation does not contain mass $(m = 0)$and is deeper. It specifies the potentials, force fields and energy of the gravitational field at any point in the Universe outside of mass $(m = 0)$. And not a single model answers the question, WHY does the curvature of gravity arise and where does the energy of the field come from? In such listed conditions, as arguments of mathematical truths, to talk about a singularity in the center$(R = 0)$ "black hole", this is a conversation about nothing. There is no singularity in the center of "black holes". The question is closed. But there is a fact of the presence of "super massive compact objects" discovered in the core of galaxies. And there is another representation of the properties of such objects:

$$(R < R_0) = \frac{2GM}{(v_i > c)^2}$$

with the presence of superluminal space: $(v_i > c)$inside $(R < R_0)$such “black spheres” called “black holes”. There are no "holes". The mass of such “black spheres” $(M \neq 0)$is not zero.

For infinite gravitational accelerations, $\Pi = c^2 = (g_2 \to \infty)(\boldsymbol{Y_2} \to \boldsymbol{0})$at a singular point $(Y_2 \to 0)$, such as a "black hole", Einstein's equation speaks of relativistic dynamics:

$(R_{ik} = (g_2 \to \infty)(Y_2 \to 0)\ ) = \frac{1}{2}R(g_{ik} = g_1 Y_1) + \kappa(T_{ik} = \Pi = c^2)$, (g_2)acceleration at point 2,

$(c * \bar{t})^2 - (\bar{x})^2 = \frac{c^4}{(g_2 \to \infty)^2} \to 0$. Einstein's equation itself disappears:

$(c * \bar{t})^2 - (\bar{x})^2 = 0$, or: $(c * \bar{t})^2 = (\bar{x})^2$,And $(c * \overline{t \to 0})^2 = (\bar{x} = \boldsymbol{Y_2} \to \boldsymbol{0})^2$.

This means that there is no such singularity in space-time. There are no "black holes" or singularities in Einstein's equation. All this is in strict mathematical truths. On the other hand, the mathematical truth here is that the non-zero difference of relativistic dynamics Δx_{21}^2, in Einstein's equation, is due to the velocities of masses less than the speed of light in the spheres themselves at points 2 and 1, and **outside the non-zero Euclidean spheres** with their various geodesic $(x_2^s \neq x_1^s)$curves in the gravitational field $(1 - \frac{2G(M)}{Rc^2} = 0)$. $R(x^s) = \frac{2G(M)}{c^2}$, $c^2 = \frac{2G(M \to 0)}{(R \to 0)}$, $(R \neq 0)$. There is no velocity of masses in the gravitational field equal to the velocity of light, since the Einstein equation itself disappears, together with singularities in the "black holes". They do not exist. The question is closed. In the equations there are only masses of **non-zero** spheres $(x_2^s \neq x_1^s)$as a source of curvature, equal to gravity, and fields of inductive masses (outside the "elevator") of "dark matter". But there are no equations that give "black holes, singularities. There are no such equations in Einstein's General Theory of Relativity.

The observed "black holes" in space-matter are presented as objects of various energy levels of the physical vacuum. These are objects of stellar (up to $30{,}8 * M_{Sun}$) masses, interstellar masses (from $31 * M_{Sun}$to $622000 * M_{Sun}$solar masses), galactic masses (from $6 * 10^5 M_{Sun}$to $10^{10} M_{Sun}$), intergalactic masses (from $10^{10} M_{Sun}$to $10^{13} M_{Sun}$), quasar nuclei (from $10^{13} M_{Sun}$to $10^{17} M_{Sun}$) and quasar galaxies up to $(10^{24} M_{Sun})$. They have increasing, multi-level shells of quantum subspaces, into which, for example, a photon cannot get. This goes beyond Einstein's general theory of relativity or, more precisely, beyond the Euclidean axiomatics of space-time. But there are no infinities and singularities here. They do not exist in Nature.

The average value of the local basis vector of the Riemannian space ($\Delta e_{лп}$), is defined as the uncertainty principle, but already for the entire wavelength $KL = \lambda(X+)$of the gravitational field of $G(X+) = M(Y-)$mass trajectories. This uncertainty in the form of a segment (OA = r), as a wave function $(r = \psi_Y)$of the mass $M(Y-)$trajectory of a quantum $(Y\pm)$in the gravitational $G(X+)$field of the Interaction. $\lambda(X+) \equiv 2\psi_Y)$spin $(X+)$field. The projection $(Y-)$of the trajectory onto the plane of the circle (πr^2) gives the area of the probability $(\psi_Y)^2$of the mass quantum getting $M(Y-)$into the gravitational field $G(X+)$of the Interaction.

These are the initial elements of quantum gravity. $G(X+) = M(Y-)$mass field. They follow from the equation of General Relativity.

2. Quantum gravity in a unified theory

The elements of the quantum gravity (X+ = Y-) mass field follow from the General Theory of Relativity. We are talking about the difference in relativistic dynamics at two (1) and (2) points of Riemannian space, as the mathematical truth of the Einstein tensor. (G. Korn, T. Korn, p.508). Here $g_{ik}(1) - g_{ik}(2) \neq 0$, $e_k e_k = 1$, by conditions $e_i(X-)$, $e_k(Y-)$, is the fundamental tensor $g_{ik}(x^n) = e_i(x^n)e_k(x^n)$of Riemannian space in $(x^n)$the coordinate system.

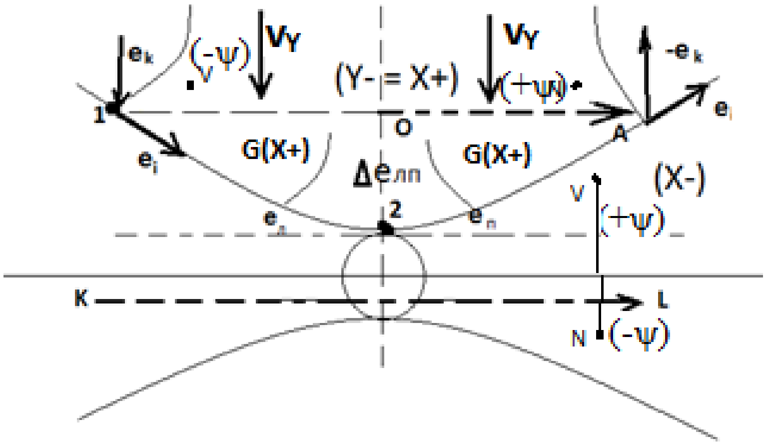


Fig. 7. Quantum gravitational (X+ = Y-) mass field.

The physical property of the gravitational (X+ = Y-) mass field is the principle of equivalence of inertial and gravitational mass. This is the equality of acceleration$a = v_Y * M(Y-)$ mass trajectories and acceleration $g = G$(X+)of the gravitational field, $v_Y * M(Y-) = \mathrm{a} = g = G(\mathrm{X}+)$, in velocity space $e_i(X-) = e_i(x^n = X, Y, Z) = v_X\left[\frac{K}{T}\right]$local basis vectors, $e_k(Y-) = e_k(x^n = X, Y, Z) = v_Y\left[\frac{K}{T}\right]$.

For example, in a "falling" elevator $(g - a) = 0$there is no acceleration, and the weight $P = m(g - a) = 0$, is equal to zero. Point (2) is reduced to the Euclidean space of the sphere $(x^S_{2=\text{п}})$, where $(\mathrm{e}_{\boldsymbol{i}} \perp \mathrm{e}_{\boldsymbol{k}})$, $(\mathrm{e}_{\boldsymbol{i}} * \mathrm{e}_{\boldsymbol{k}} = 0)$. Therefore, in the neighborhood of point (2) we select parallel vectors ($\mathrm{e}_л$) and ($\mathrm{e}_п$) and take the average value $\Delta\mathrm{e}_{лп} = \mathrm{e}_2 = \frac{1}{2}(\mathrm{e}_л + \mathrm{e}_п)$. Taking $(\mathrm{e}_{\mathbf{2}} = \mathrm{e}_к)$and $g_{ik}(1) - g_{ik}(2) \neq 0$.

$\Delta\mathrm{e}_{лп} = \frac{1}{2}(\mathrm{e}_л + \mathrm{e}_к) = \frac{1}{2}\mathrm{e}_к(\frac{\mathrm{e}_л}{\mathrm{e}_к} + 1)$, we get: $g_{ik}(1)(\mathrm{X}+) - g_{ik}(2)(\mathrm{X}+) = \mathrm{к}\mathrm{T}_{ik}(Y-)$, or

$$g_{ik}(1) - \frac{1}{2}(\mathrm{e}_i\mathrm{e}_2 = \mathrm{e}_{\boldsymbol{i}}\mathrm{e}_{\boldsymbol{k}} = g_{ik})\left(\frac{\mathrm{e}_л}{\mathrm{e}_к} + 1\right)(2) = \mathrm{к}\mathrm{T}_{ik}\,,\ \left(\frac{\mathrm{e}_л}{\mathrm{e}_к} = R\right).\ (\mathrm{e}_л \neq \mathrm{e}_к), \qquad g_{ik}(x^S_{2=\text{п}=k})$$

For$(\mathrm{e}_л = \mathrm{e}_к)$ we have $(\mathrm{T}_{ik} = 0)$. In the conditions$(\mathrm{e}_л \neq \mathrm{e}_п)$ we are talking about the dynamics of the physical vacuum at fixed angles of parallelism, with different geodesics of the already dynamic sphere $(x^S_л \neq x^S_2 \neq x^S_п)$in fixed$(\mathrm{e}_л \neq \mathrm{e}_2 \neq \mathrm{e}_п = const)$ points $(\mathrm{e}_п = \boldsymbol{\lambda}\mathrm{e}_2)$. For dynamic $(\partial\mathrm{e}_п/\partial\, t \neq 0)$, $(\varphi \neq const)$angles of parallelism of space-matter we speak about acceleration in the sphere (XYZ) of non-stationary Euclidean space. In other words, the geodesic of the non-stationary Euclidean sphere already $g_{ik}(x^S_л \neq x^S_2 \neq x^S_п \neq const)$changes. We are talking about acceleration of the already dynamic physical vacuum during its expansion.

From this follows the equation of the General Theory of Relativity in its full form:

$$R_{ik} - \frac{1}{2}Rg_{ik} - \frac{1}{2}\lambda g_{ik} = \mathrm{к}\mathrm{T}_{ik}.$$

The average value of the local basis vector of the Riemannian space ($\Delta\mathrm{e}_{лп}$) is defined as the uncertainty principle of mass $(Y-)$trajectories, but for the entire wavelength $KL = \lambda(X+)$gravitational field. Here the accelerations $G(X+) = v_Y M(Y-)$of mass trajectories. This uncertainty in the form of a segment ($2 * \mathrm{OA} = 2r$), as a wave function $2\psi_Y(Y-)r = \lambda(X+)$of the mass $M(Y-)$trajectory of a quantum $(Y\pm)$in the gravitational field $G(X+)$of Interaction. Here $2\psi_Y$, the spin $(\downarrow\uparrow)$ of the quantum field $\lambda(X+)$of gravity. The projection of the mass $(Y-)$trajectory of a quantum onto the plane of a circle (πr^2) gives the area of the probability of the mass $(\psi_Y)^2$trajectory of a quantum $(Y\pm)$, $G(X+)$falling into the quantum gravitational $M(Y-)$field of interaction $(Y- = \mathrm{X}+)$actions. In the general case, the points V ; and N (Y -) mass or V ; N (X-) charge trajectories are absolutely identical to each other in the line-trajectory of a single bundle of parallel straight lines. Each pair of points has its own wave function $\sqrt{(+\psi)(-\psi)} = i\psi$, in the interpretation of quantum entanglement. In this representation, quantum entanglement is a fact of reality, which follows from the axioms of dynamic space-matter. The entropy of quantum entanglement of a set gives the gradient of the potential, but here the Einstein equivalence principle of inertial $v_Y M(Y-) = G(X+)$ and gravitational mass.

These are the initial elements of quantum gravity. $G(X+) = v_Y M(Y-)$mass field. They follow from the equation of the General Theory of Relativity. Let us single out here the dimensions of the unified Criteria of Evolution of space-matter in the form of. Speed $v_Y\left[\frac{K}{T}\right]$; potential $(\Pi = v_Y^2)\left[\frac{K^2}{T^2}\right]$; acceleration

$G(X+)\left[\frac{K}{T^2}\right]$; mass $m = \Pi\text{К}(Y-=X+)$fields and charge $q = \Pi\text{К}(X-=Y+)$fields, their densities $\rho\left[\frac{\Pi K}{\text{К}^3}\right] = \left[\frac{1}{T^2}\right]$; force $F = \Pi^2$; energy $\boldsymbol{\mathcal{E}} = \Pi^2\text{К}$; momentum $\text{P} = \Pi^2\text{T}$; action $\hbar = \Pi^2\text{КТ}$and so on.

Let us denote ($\Delta e_{\text{лп}} = 2\psi e_k$), $\text{T}_{ik} = \left(\frac{\varepsilon}{\text{P}}\right)_i \Delta\left(\frac{\varepsilon}{\text{P}}\right)_{\text{лп}} = \left(\frac{\varepsilon}{\text{P}}\right)_i 2\psi\left(\frac{\varepsilon}{\text{P}}\right)_{\text{к}} = 2\psi\text{T}_{ik}$, as an energy tensor ($\boldsymbol{\mathcal{E}}$) – (P) momentum with a wave function (ψ). From this follows the equation:

$$R_{ik} - \frac{1}{2}Re_i\Delta e_{\text{лп}} = \text{к}\left(\frac{\varepsilon}{P}\right)_i \Delta\left(\frac{\varepsilon}{P}\right)_{\text{лп}} \text{ or}$$

$$R_{ik}(X+) = 2\psi\left(\frac{1}{2}Re_ie_k(X+) + \text{к}\text{T}_{ik}(Y-)\right), \text{ And } R_{ik}(X+) = 2\psi\left(\frac{1}{2}Rg_{ik}(X+) + \text{к}\text{T}_{ik}(Y-)\right).$$

This is the equation of the quantum Gravitational potential with the dimension $\left[\frac{\text{К}^2}{\text{T}^2}\right]$of the potential $(\Pi = v_Y^2)$and the spin (2ψ). In the brackets of this equation, part of the equation of General Relativity in the form of the potential Π(X+)field of gravity.

In field theory (Smirnov, v.2, p.361), the acceleration of mass $(Y-)$trajectories in $(X+)$the gravitational field of a single $(Y-) = (X+)$space-matter is represented by the divergence of the vector field:

$$divR_{ik}(Y-)\left[\frac{K}{\text{T}^2}\right] = G(\text{X}+)\left[\frac{K}{\text{T}^2}\right], \text{ with acceleration } G(\text{X}+)\left[\frac{K}{\text{T}^2}\right] \text{and}$$

$$G(\text{X}+)\left[\frac{K}{\text{T}^2}\right] = grad_l\Pi(\text{X}+)\left[\frac{K}{\text{T}^2}\right] = grad_n\Pi(\text{X}+) * \cos\varphi_{\text{x}}\left[\frac{K}{\text{T}^2}\right].$$

The relation $G(\text{X}+) = grad_l\Pi(\text{X}+)$is equivalent to $G_{\text{x}} = \frac{\partial G}{\partial x}$; $G_Y = \frac{\partial G}{\partial y}$; $G_z = \frac{\partial G}{\partial z}$; representation. Here the total differential is $G_{\text{x}}dx + G_Ydy + G_zdz = d\Pi$. It has an integrating factor of the family of surfaces $\Pi(\text{M}) = \text{C}_{1,2,3\ldots}$, with the point M, orthogonal to the vector lines of the field of mass $(Y-)$trajectories in $(X+)$the gravitational field. Here $e_i(Y-) \perp e_k(X-)$. From this follows the quasipotential field:

$$t_T(G_{\text{x}}dx + G_Ydy + G_zdz) = d\Pi\left[\frac{\text{К}^2}{\text{T}^2}\right], \qquad \text{And} \qquad G(\text{X}+) = \frac{1}{t_T}grad_l\Pi(\text{X}+)\left[\frac{K}{\text{T}^2}\right].$$

Here $t_T = n$for the quasipotential field. Time $t = nT$, is $n$the number of periods $T$of quantum dynamics. And $n = t_T \neq 0$. From here follow the quasipotential surfaces$\omega = 2\pi/t$ quantum gravitational fields with period $T$and acceleration:

$$G(\text{X}+) = \frac{\psi}{t_T}grad_l\Pi(\text{X}+)\left[\frac{K}{\text{T}^2}\right].$$

$$G(\text{X}+)\left[\frac{K}{\text{T}^2}\right] = \frac{\psi}{t_T}\left(grad_n(Rg_{ik})(\cos^2\varphi_{\text{x}MAX} = G)\left[\frac{K}{\text{T}^2}\right] + (grad_l(T_{ik})\right).$$

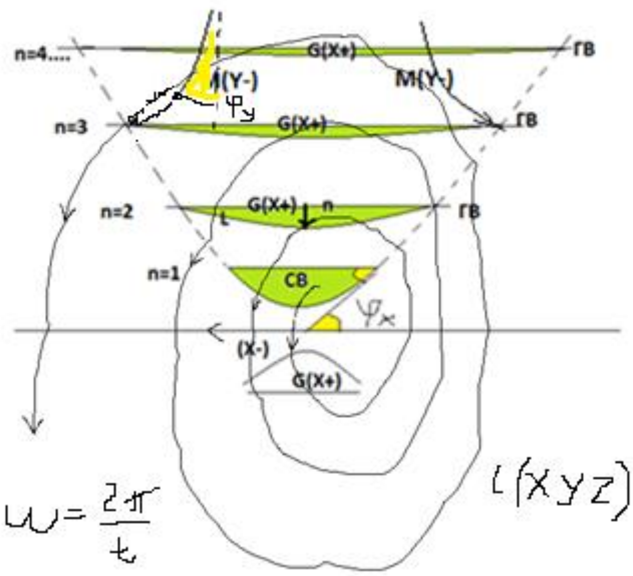


Fig. 8. Quantum gravitational fields.

This is fixed in the section, the chosen direction of the normal $n \perp l$. The addition of all such quantum fields of a set of quanta $rot_XG(\text{X}+)\left[\frac{K}{\text{T}^2}\right]$of any mass forms a common potential "hole" of its gravitational field, where the Einstein equation is already in effect, with the formula (law) of Newton "sewn up" in the equation. In dynamic space-matter, we are talking about the dynamics $rot_XG(\text{X}+)\left[\frac{K}{\text{T}^2}\right]$of fields on closed $rot_{\text{X}}M(Y-)$trajectories. Here is the line along the quasi-potential surfaces of the Riemannian space, with the normal $n \perp l$. The limiting angle of parallelism of mass $(Y-)$trajectories in $(X+)$the gravitational field gives the gravitational constant ($\cos^2\varphi(X-)_{MAX} = G = 6.67 * 10^{-8}$). Here $t_T = \frac{t}{T} = n$, the order of the quasi-potential surfaces, and $(cos\varphi(Y-)_{MAX} = \alpha = \frac{1}{137.036})$.

$$G(X+)\left[\frac{K}{T^2}\right] = \frac{\psi * T}{t}\left(G * grad_n R g_{ik}(X+) + \alpha * grad_n T_{ik}(Y-)\right)\left[\frac{K}{T^2}\right].$$

This is the general equation of quantum gravity (X+ = Y-) of the mass field already **accelerations** $\left[\frac{K}{T^2}\right]$, and the wave ψfunction, as well as $T$the period of quantum dynamics $\lambda(X+)$, with spin (↓↑), (2ψ). Acceleration fields, as is known, are already force fields. And this equation differs from the equation of gravitational **potentials** of the General Theory of Relativity. In a few words, we will note the concepts in such approaches.

Einstein then attempted to perform a parallel transfer of a vector in Riemannian space along a geodesic curve $(x^s)$from point 1 to point 2, obtaining a quantum of the gravitational field.

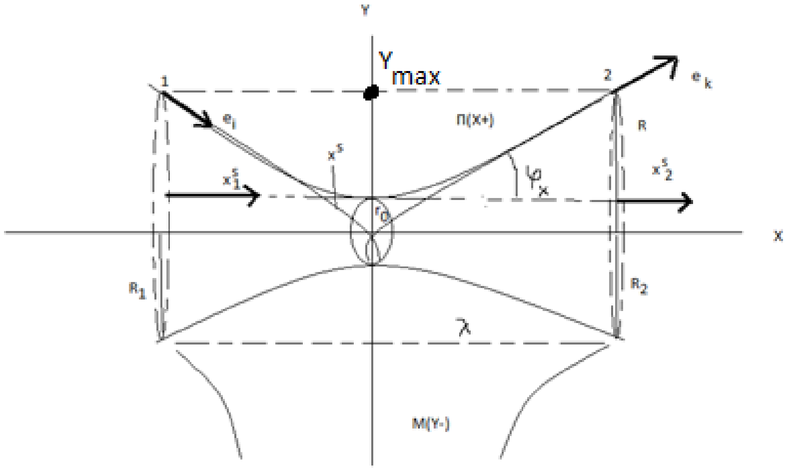


Fig. 8.1 - interpretation of models.

In the mathematical procedures of Euclidean axiomatics, this is possible only by transferring the vector of (x_1^S)point 1 to exactly the same vector (x_2^S), but of point 2, as projections onto Euclidean space, local basis vectors of Riemannian space $e_i(x^s)$and $e_k(x^s)$. $(x_1^S = x_2^S = cos\varphi_{X\,max} = \sqrt{G})$, or $(x_1^S * x_2^S = \sqrt{G}e_i\sqrt{G}e_k = G g_{ik}(x^s)$. At each fixed point of the geodesic curve (x^s), in the Euclidean axiomatics of the curvature of space-matter: $K = \frac{Y^2}{r_0}$(V.I. Smirnov, 1974, v.1, p.187), and the relations $\frac{Y}{r_0} = ch\left(\frac{X}{r_0}\right) = \frac{1}{2}(e^{x/r_0} + e^{-x/r_0})$, and $(X = \frac{\lambda}{2})$, the gravitational potential is equal to:

$$\Pi(X+) = G g_{ik}\left(1 - \left[\frac{Y}{r_0} = ch\left(\frac{\lambda/2}{r_0}\right)\right]\right) = kT_{ik}.$$ For: $h = 2\pi(\hbar = \Delta p_Y \Delta x_Y^S)$, $\Delta\lambda = \frac{2\pi\hbar}{\Delta p_Y}$, and $ch\left(\frac{\pi * \hbar}{\Delta p_Y * r_0}\right)$.

Here (p_Y), the momentum of the action of the quantum of the gravitational field. This is how Einstein's idea is realized. By transforming the gravitational potential $\Pi(X+)$, one can obtain the following variants:

A) $\Pi(X+) = g * x^s = x^s G(X+)$, the relation of relativistic dynamics $(\frac{Y}{r_0} = R)$ as rotations of the Lorentz transformations in planes of a circle $(R)$and $r(_0)$, as well as for $(cos\varphi(Y-)_{MAX} = \alpha)$, And $Y = \alpha * (Y-)$, we already obtain quantum gravitational acceleration fields in the form:

$$G g_{ik} = G * R * g_{ik} + \alpha T_{ik} \text{or } G(X+) = G * R * grad_n g_{ik}(X+) + \alpha * grad_n T_{ik}(Y-),$$

b) in Euclidean axiomatics, $cos\varphi(Y-)_{min} = 1$, $cos\varphi(X-)_{min} = 1$, and $G g_{ik} = R_{ik}$, we obtain the classical equation of Einstein's General Theory of Relativity in the form: $R_{ik} - \frac{1}{2}R * g_{ik} = k * T_{ik}$.

c). From the standard equation of Einstein's General Theory of Relativity: $R_{ik} - \frac{1}{2}R g_{ik} = \frac{8\pi G}{c^4}T_{ik}$, without the dynamics of the physical vacuum, in the unified Criteria of Evolution of space-time, the classical law of Newton follows: $F = \frac{GMm}{R^2}$. From the difference gravitational potentials at points (1) and (2) in the form: ($R_{ik} = e_i e_k(1) = U_1)\frac{1}{2}R g_{ik} = e_i e_k(2) = U_2$ and ($U_1 - U_2 = \Delta U$). For example, for the Sun and Lands

$(M = 2 * 10^{33}g)$ and $(m = 5.97 * 10^{27}g)$, we obtain ($U_1 = \frac{(G=6.67*10^{-8})(M=2*10^{33})}{R=1.496*10^{13}} = 8.917 * 10^{12}$) the gravitational potential at a distance to the Earth and $U_2 = \frac{(G=6.67*10^{-8})(m=5.97*10^{27})}{R=6.374*10^{8}} = 6.25 * 10^{11}$, the potential of the Earth itself. Then$(\Delta U = U_1 - U_2 = 8.917 * 10^{12} - 6.25 * 10^{11} = 8.67 * 10^{12})$, or $(\Delta U = 8.29 * 10^{12})$, we get:

$\Delta U = \frac{8\pi G}{(c^4=U^2=F)}(\mathrm{T}_{ik} = \frac{(U^2K)^2}{U^2T^2} = \frac{U^2(UK=m)^2}{U^2T^2} = \frac{Mm}{T^2})$, or$\frac{\Delta U}{\sqrt{2}} = \frac{8\pi G}{F}\frac{Mm}{T^2}$, $F = \frac{8\pi G}{(\Delta U/\sqrt{2})}\frac{Mm}{T^2} = \frac{GMm}{(\Delta U * T^2/\sqrt{2})/8\pi}$ without dark masses . It remains to calculate $\frac{\Delta U * T^2}{8\pi\sqrt{2}} = \frac{8.29*10^{12}*(365.25*24*3600=31557600)^2}{8\pi\sqrt{2}} = 2.3*10^{26}$what corresponds to the square of the distance ($R^2 = 2.24*10^{26}$) from the Earth to the Sun, or $F = \frac{GMm}{R^2}$ Newton 's law.

d) as well as a conceptual model of loop quantum gravity, already with some reservations. If in the equation of the gravitational potential $Gg_{ik}\left(Y_{max} - \left[\frac{Y}{r_0} = ch\left(\frac{\lambda/2}{r_0}\right)\right]\right) = kT_{ik}$, and the idea Einstein on parallel transport, to represent the transformations of local basis vectors in the spinor field of the (S)SU (2) group to the homomorphic group SO (3), as well as with the generators of the Lorentz group in SO (1,3) of the space - time of the dynamic sphere, we obtain:$(R = x^s_Y) \to r_0 \to (R = x^s_Y)$ transformations. We are talking about the non-stationary Euclidean space of a dynamic hyperboloid in quantum relativistic dynamics (Quantum Theory of Relativity). Or $S = \left(Y_{max} - \left[\frac{Y}{r_0} = ch\left(\frac{\lambda/2}{r_0}\right)\right]\right)$, And$Gg_{ik} * S = kT_{ik}$ invariant $(S^T\epsilon S)$, with spinor Makowski metric: $\epsilon = \begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$. For$(Y = (r_0 = Y_0))$ and $\left(ch\left(\frac{X=0}{r_0}\right) = 1\right)$, these are strict mathematical truths. In essence, this is the additional Bell parameter, probabilistic potentials$g_{ik}(Y_{max} - (Y = r_0 ch\left(\frac{\lambda/2>x}{r_0}\right)))$ interactions of (X±) and (Y ±) quanta in experiments, with precise determination of coordinates (x). Here the interaction cross-section $\pi Y^2_{max}(1-\psi^2)$has(ψ^2) probability of interaction of the wave function. We are talking about potentials Π(Y +) of electric or Π(X+) of mass fields. When homogeneous potentials interact (Π*Π=Π2 = F = dp / *dt),* an interaction force appears. The Einstein-Podolsky-Rosen paradox consists in measuring the parameters of an entangled particle indirectly, without changing its properties. Particles will be ideally entangled if they are born in the same quantum field with acceptable symmetry. To change the properties of an entangled particle, it is necessary to change the "superluminal background" of the physical vacuum, which is allowed by Einstein's formulas. Then, by studying (or changing) the influence of the Background Criteria on one particle, we know exactly the dynamics of the second particle, for example, in the interstellar space of a galaxy. Another acceptable option is when the background for an electron is a virtual photon, and for a proton, a virtual antineutrino. Then, if two electrons (on identical orbits of atoms) are irradiated with entangled photons, we will get the same effect. Such radiation can be programmed and change the structure of atoms (molecules) on the planet, but only at the speed of light. Such programming of a group of homogeneous or different atoms in molecules can be performed by homogeneous or different entangled photons in space (here or somewhere) or in time (now or later) with a single-color or "white" laser. And the emergent properties of new atoms or molecules can be accepted as control information. Thus, we obtain a quantum gravitational potential, with energy-momentum at each point of the Riemann space. In the technologies of quantum operators for extremals and wave functions in the dynamics of a quantum, we obtain a quantum gravitational field within the framework of the General Theory of Relativity. In such a concept, there is no equivalence principle and relativistic dynamics of the physical vacuum with a parameter (λ), in the Einstein equation. A spinor with scaling generators $(R) \to r_0 \to (R)$, for $Y = r_0\left(ch\frac{X}{r_0} = \frac{1}{2}(e^{\frac{X}{r_0}} + e^{-\frac{X}{r_0}})\right)$, with a scaling parameter (m), in the form $e^{m\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}} = \begin{pmatrix} 0 & e^m \\ -e^m & 0 \end{pmatrix}$, can give a diverging and converging spiral in the dynamics (x^s) of a geodesic. This adequately corresponds to the mathematical apparatus (answering the questions HOW) of loop quantum gravity of point gravitational potentials, with an explicit indication of gravitons, but with the indicated shortcomings and the absence of a source of the gravitational field. That is, without answers to the questions WHY exactly so.

For $n = 1$, (Fig. 2) the gravitational field $G(\mathrm{X}+)\left[\frac{K}{\mathrm{T}^2}\right] = \frac{\psi*T}{\Delta t}G * grad_n(Rg_{ik})(\mathrm{X}+)\left[\frac{K}{\mathrm{T}^2}\right]$of the gravity source is $G(\mathrm{X}+)$the field of the SI $(\mathrm{X}+)$– Strong Interaction. Quantum dynamics in time Δtwithin the period of dynamics $T$is represented by the relation:

$$G(\mathrm{X}+) = \psi * T * G\frac{\partial}{\partial t}grad_n Rg_{ik}(\mathrm{X}+),\text{ where } T = \frac{\hbar}{\mathcal{E}=U^2\lambda},\text{ is the period of quantum dynamics.}$$

The formula for the accelerations $\left[\frac{K}{\mathrm{T}^2}\right]$of the SW $(\mathrm{X}+)$field of the Strong Interaction takes the form:

$$G(\mathrm{X}+)\left[\frac{K}{\mathrm{T}^2}\right] = \psi\frac{\hbar}{\Pi^2\lambda}G\frac{\partial}{\partial t}grad_n Rg_{ik}(\mathrm{X}+)\left[\frac{K}{\mathrm{T}^2}\right], \quad grad_n = \frac{\partial}{\partial Y}.$$

Here $G = 6.67 * 10^{-8}$, $\hbar = \Pi^2 \lambda T$, is the flow of quantum energy of $\varepsilon = \Pi^2 \lambda = \Delta mc^2$the field of inductive mass $(\Delta m)$of the exchange quantum $(Y- = \frac{p}{n})$of the Strong Interaction, and also $(Y- = 2n)$ nucleons $(p \approx n)$of the atomic nucleus. The inductive mass $\Delta m(Y- = X+)$is represented by inseparable quark models $\Delta m(Y- = \gamma_0) = u$and $\Delta m(X+ = \nu_e) = d$quarks, in the proton model:
$(X \pm = p^+) = (\boldsymbol{Y} - = \gamma_0^+)(\boldsymbol{X} + = \nu_e^-)(\boldsymbol{Y} - = \gamma_0^+)$**,** color gluon fields of interaction
$(X \pm = p^+) = (\boldsymbol{Y} + = \gamma_0^+)(\boldsymbol{X} - = \nu_e^-)(\boldsymbol{Y} + = \gamma_0^+)$of quarks in their confinement $(\boldsymbol{Y}+)(\boldsymbol{Y}+) = (X-)$**,** a single space-matter, $(X \pm = p^+) = (\boldsymbol{u} = \gamma_0^+)(\boldsymbol{d} = \nu_e^-)(\boldsymbol{u} = \gamma_0^+)$**,** a proton in this case. Similar to the structure of quarks$(Y \pm = n) = (X = d)(Y = u)(X = d) = (\boldsymbol{X} - = \boldsymbol{p}^+)(\boldsymbol{Y} + = e^-)(\boldsymbol{X} - = \nu_e^-)$ neutron with colored gluons $(X+)(X+) = (\boldsymbol{Y}-)$ or $(Y+)(Y+) = (X-)$ fields interactions. Solutions of the equations of quantum fields of the Strong Interaction, assume the presence of their inseparable quark models $(Y- = u)(X+ = d)$of a single $(Y- = X+)$space-matter. These are exchange quantum, inductive mass fields of mesons. In more complex structures of elementary particles, other $(Y- = X+)$quark models $(Y- = c)$or, $(Y- = t)$as well as $(X+ = s)$ and, $(X+ = b)$are manifested in the known laws of symmetry.

Each mathematical model, answering the question HOW, has its own reasons for internal connections. Lagrangian mechanics can only be applied to systems whose connections, if any, are all holonomic. (https://360wiki.ru/wiki/Lagrangian_mechanics). In quantum mechanics, where waves are particles with non-holonomic connections, in the fields of a single space-matter, the Lagrange formalism is impossible either in fact or by definition. By transformations, one can always come to another model of a physical fact, but with other reasons in other connections. Such models are mathematical, but the question is, where is the truth? For example, (+) charge of a proton in quarks and (+) charge of a positron without quarks. This is a fundamental contradiction. Both models work, but the physical reasons are lost. There is no answer to the question, WHY is it so? The quark- gluon fields of the proton, during its annihilation (p $^+$)+ (p $^-$), should transform into quantum fields of photons. But there is no such procedure. Why, where and how quarks disappear during decays of the π- meson is an open question. Feynman diagrams work yes, but the proton does not emit a photon in a charge interaction with the electron of the atom. These are the fundamental foundations of all atomic structures, the structure of matter. WHY is it so - there is no answer? Here we will answer WHY a particle has exactly these decay products or annihilations of indivisible quanta. We will proceed from general ideas $\psi(X) = e^{a(X)}\overline{\psi}(X)$Dirac equations, when $Y = e^{a(X)}(X+)$the dynamic field of a quantum

$$(X\pm) = ch\left(\frac{X}{Y_o}\right)(X+)cos\varphi(X-) = 1, \qquad cos\varphi(X-) = \sqrt{G}, \text{ or } (Y\pm) = ch\left(\frac{Y}{X_o}\right)(Y+)cos\varphi(Y-) = 1,$$

$cos\varphi(Y-) = \frac{1}{137.036} = \alpha$. Where $(cos\varphi \neq 0)$in both cases. In mass fields $m(Y- = X+)$, we will take the measured mass and the estimated time(T) decay of particles. From the most general ideas:
$m = \frac{\Pi^2}{Y''} = \frac{\Pi^2 T^2}{Y = \exp(z)} = T\Pi(\frac{K}{T})(\frac{K}{T})T\exp(-z)$, with a unit charge $q(X- = Y+) = 1$, and the speed of light $c = 1$ in the quantum itself, space-matter $m = T\frac{(\Pi K = q = 1)}{G\alpha}(\frac{K}{T} = c = 1)\exp(-z)$, Where $z = \frac{(m_X = \Pi X)}{\Pi = c^2 = 1)} = X(MeV)$and $z = \frac{(m_Y = \Pi Y)}{\Pi = c^2 = 1)} = Y(MeV)$in a dynamic, hyperbolic$e^{a(X)}$ space Dirac equations. For $G = 6{,}67 * 10^{-8}$, $\alpha = \frac{1}{137.036}$, $\nu_\mu = 0{,}27\ MeV$, $\gamma_o = 3{,}13 * 10^{-5} MeV$, $\nu_e = 1{,}36 * 10^{-5} MeV$,$\gamma = 9{,}1 * 10^{-9} MeV$

mass spectrum according to decay (annihilation) products

Stable particles with annihilation products in a single $(Y \mp = X \pm)$space-matter:

$(X \pm = p) = (Y- = \gamma_o)(X+ = \nu_e)(Y- = \gamma_o) = \left(\frac{2\gamma_o}{G} - \frac{\nu_e}{\alpha^2}\right) = 938{,}275\ MeV$;

$(Y \pm = e) = (X- = \nu_e)(Y+ = \gamma)(X- = \nu_e) = \left(\frac{2\nu_e}{\alpha^2} + \frac{\gamma * \alpha}{2G}\right) = 0{,}511\ MeV$;

unstable particles already according to the products and time of decay.$G\alpha = 4.8673 * 10^{-10}$

$(Y \pm = \mu) = (X- = \nu_\mu)(Y+ = e)(X- = \nu_e) = \frac{(T = 2.176 * 10^{-6})}{G\alpha}\exp\left(\nu_\mu + e + \frac{\nu_e ch1}{\alpha^2} = 1{,}1751\right) = 105{,}66\ MeV$,

Here and further in the calculations we will designate in underlined font,$(\underline{\mu} = 1{,}1751)$ indicator exp(). It shows the features of fragmentation of the dynamic field $\exp(a(X))$in the Dirac equation.

$(Y \pm = \pi^\pm) = (Y+ = \mu)(X- = \nu_\mu) = \frac{(T = 2.76586 * 10^{-8})}{2G\alpha}\exp\left(\underline{\mu} + \nu_\mu ch1\right) = 139{,}57\ MeV$, $(\underline{\pi^\pm} = 1{,}59173)$

$(X- = \pi^0) = (Y+ = \gamma_o)(Y+ = \gamma_o) = \frac{(T = 7.8233 * 10^{-17})}{G^2\alpha}\exp\left(\frac{2\gamma_0^2}{G\alpha}\right) = 134{,}98\ MeV$, $(\underline{\pi^0} = 4{,}025599)$

$(X- = \eta^0) = (X+ = \pi^0)(Y-)(X+ = \pi^0)(Y-)(X+ = \pi^0) = \frac{(T = 5.172 * 10^{-19})}{(G\alpha)^2}\exp\left(\frac{3\underline{\pi^0}}{2} - \frac{\gamma ch2}{G}\right) = 547{,}853\ MeV$,

$(X- = \eta^0) = (Y- = \pi^+)(X+ = \pi^0)(Y- = \pi^+) = \frac{(T = 5.1 * 10^{-19})}{\sqrt{2}(G\alpha)^2}\exp\left(2\underline{\pi^\pm} + \frac{\underline{\pi^0}}{2}\right) = 547{,}853\ MeV$,

$(Y \pm = K^+) = (Y+ = \mu)(X- = \nu_\mu) = \frac{(T = 1.335 * 10^{-8})}{G\alpha}\exp 2\left(\underline{\mu} + \nu_\mu\right) = 493{,}67\ MeV$,

$(Y\pm=K^{+})=(Y+=\pi^{+})(X-=\pi^{0})=\frac{(T=1.01398*10^{-8})}{G\alpha}\exp\left(\underline{\pi^{+}}+\underline{\pi^{0}}/2\right)=493{,}67\ MeV.\ \underline{K^{-}}=3{,}16535$

$(Y-=K_{S}^{0})=(X+=\pi^{0})(X+=\pi^{0})=\frac{(T=0{,}885*10^{-10})}{G\alpha}\exp\left(2\underline{\pi^{0}}-\frac{\gamma}{G}\right)=497{,}67\ MeV,$

$(X-=K_{L}^{0})=(Y-=\pi^{\pm})(X+=\nu_{e})(Y-=e^{\mp})=\frac{(T=4{,}9296*10^{-8})}{G\alpha}\exp\left(\underline{\pi^{\pm}}+e^{\mp}+\frac{2\nu_{e}}{\alpha^{2}}\right)=497{,}67\ MeV,$

$(X-=K_{L}^{0})=(Y-=\pi^{\pm})(X+=\nu_{\mu})(Y-=\mu^{\mp})=\frac{(T=5{,}1713*10^{-8})}{G\alpha}\exp\left(\underline{\pi^{\pm}}-\frac{\mu^{\mp}}{2}+2\nu_{\mu}\right)=497{,}67\ MeV,$

$(X-=\rho^{0})=(Y+=\pi^{+})(Y+=\pi^{+})=\frac{(T=5{,}02*10^{-24})}{G\alpha}\exp\left(\frac{2\underline{\pi^{\pm}}}{\sqrt{\alpha}}(1+\frac{1}{2\sqrt{\alpha}}\right)=775{,}49\ MeV;$

$(X\pm=\rho^{+})=(X+=\pi^{0})(Y-=\pi^{+})=\frac{(T=6{,}47566*10^{-24})}{G\alpha}\exp\left(\frac{\underline{\pi^{0}}}{\sqrt{\alpha}}-\frac{\underline{\pi^{+}(\sqrt{\alpha}-1)}}{2}\right)=775{,}4\ MeV;$

Similarly, hadrons

$(Y\pm=n)=(X-=\nu_{e})(Y+=e)(X-=p)=(T=878{,}77)\exp\left(\frac{\nu_{e}}{\sqrt{G}}+\frac{e}{2}-p\sqrt{G}\right)=938{,}57\ MeV,$

$(X\pm=\Lambda^{0})=(X+=p^{+})(Y-=\pi^{-})=\frac{(T=2.604*10^{-10})}{G\alpha}\exp(\alpha p^{+}+\underline{\pi^{-}}/2)=1115{,}68\ MeV,\qquad \underline{\Lambda^{0}}=7{,}642837$

$(Y\pm=\Lambda^{0})=(Y+=n)(X-=\pi^{0})=\frac{(T=1.5625*10^{-10})}{G\alpha}\exp\left(\alpha n+\frac{\underline{\pi^{0}}}{2ch1}\right)=1115{,}68\ MeV,\underline{\Lambda^{0}}=8{,}153$

$(Y-=\Sigma^{+})=(X+=p^{+})(X+=\pi^{0})=\frac{(T=8.22*10^{-11})}{G\alpha}\exp\left(\alpha p^{+}+\frac{\underline{\pi^{0}}}{2}\right)=1189{,}37\ MeV,$

$(X-=\Sigma^{+})=(Y+=n)(Y+=\pi^{+})=\frac{(T=8.1*10^{-11})}{G\alpha ch1}\exp(\alpha n+\pi^{+})=1189{,}37\ MeV,$

$(X-=\Sigma^{-})=(Y+=n)(Y+=\pi^{-})=\frac{(T=1.25*10^{-10})}{G\alpha}\exp(\alpha n+\pi^{+})=1189{,}37\ MeV,$

$(X-=\Sigma^{0})=(Y+=\Lambda^{0})(Y+=\gamma)=\frac{(T=7.4*10^{-20})}{G^{2}\alpha*ch1}\exp\left(\frac{\underline{\Lambda^{0}}+\gamma/G}{2}\right)=1192{,}64\ MeV,\qquad \underline{\Lambda^{0}}=7{,}642837,$

$(Y\pm=\Xi^{0})=(Y+=\Lambda^{0})(X-=\pi^{0})=\frac{(T=2.5984*10^{-10})}{G\alpha}\exp(\underline{\Lambda^{0}}-\underline{\pi^{0}}\sqrt{\alpha})=1314{,}86\ MeV,\ \underline{\Lambda^{0}}=8{,}153,\ \underline{\Xi^{0}}=7{,}809,$

$(X\pm=\Xi^{-})=(X+=\Lambda^{0})(Y-=\pi^{-})=\frac{(T=1.3917*10^{-10})}{G\alpha}\exp(\underline{\Lambda^{0}}+\underline{\pi^{-}}/2)=1321{,}71\ MeV,\ \underline{\Lambda^{0}}=7{,}642837,\ \underline{\Xi^{-}}=8{,}43869,$

$(X-=\Omega^{-})=(Y+=\Lambda^{0})(Y+=K^{-})=\frac{(T=8.018*10^{-11})}{G\alpha}\exp(\underline{\Lambda^{0}}-\underline{K^{-}}/2)=1672{,}45\ MeV,\ \underline{\Lambda^{0}}=7{,}642837,\underline{K^{-}}=3{,}16535$

$(X-=\Omega^{-})=(Y+=\Xi^{0})(Y+=\pi^{-})=\frac{(T=6.734*10^{-11})}{G\alpha}\exp(\underline{\Xi^{0}}+\underline{\pi^{-}})=1672{,}45\ MeV,\ \underline{\Xi^{0}}=7{,}809,$

$(Y-=\Omega^{-})=(X+=\Xi^{-})(X+=\pi^{0})=\frac{(T=7.1147*10^{-11})}{G\alpha}\exp(\underline{\Xi^{-}}+\underline{\pi^{0}}/ch2)=1672{,}45\ MeV,\ \underline{\Xi^{-}}=8{,}275,$

There are other methods for calculating the mass spectrum, but this logical construction gives the calculation of the mass spectrum with minimal parameters. The initial parameters here are only the decay products. This model is still imperfect, but there are no problems and contradictions of the Standard Model.

In other methods of calculating the mass spectrum, we speak of another technology of the theories themselves, in which Bohr's postulates, the uncertainty principle, the principle of equivalence of masses, are presented as axioms of dynamic space-matter. Here are other initial concepts and, on their basis, other causes and effects in the models. The same mass spectrum is calculated in quantum models. For example, in the quantum relativistic dynamics of the "gauge field", a dynamic mass is formed in the form of: $\overline{W}=\frac{a_{11}W_{Y}\pm c}{a_{22}\pm W_{Y}/c}$, at the extreme point, $(\pm K_{Y})^{2}=0=\frac{\Pi^{2}}{b^{2}}-\Pi*\overline{T}^{2}$, $\Pi_{1}=0$, $\Pi_{2}=b^{2}*\overline{T}^{2}$, with its own velocity space in Spontaneous Symmetry Breaking, ${W_{Y}}^{2}=\frac{\Pi}{2}=\frac{b^{2}*\overline{T}^{2}}{2}$, or $\overline{W}=\frac{\overline{T}}{\sqrt{2}}\left(\pm b=\frac{\Pi^{2}=F_{Y}}{\overline{m}}\right)$,

$$\overline{m}*W_{Y}=\frac{1}{\sqrt{2}}(\pm F_{Y}\overline{T}=\pm p_{Y}),\quad \overline{m}*W_{Y}=\frac{\pm p_{Y}}{\sqrt{2}},\quad \overline{m}=\frac{p_{Y}}{W_{Y}\sqrt{2}}.$$

For the masses$(Y-=X+)$ fields, under the conditions of Global (GI) and Local Invariance (LI), we obtain:

$$\overline{K}_{Y}=(a_{11}=cos\gamma)_{\text{ГИ}}K(ch\frac{X}{Y_{0}}cos\varphi_{X})_{\text{ЛИ}}(X+)+K_{X}(X-),\ \text{or}$$

$$(\Pi\overline{K}_{Y}=\overline{m})=(a_{11}=cos\gamma)_{\text{ГИ}}\left(\frac{\overline{m}=m_{0}}{\sqrt{2}}\right)\left(\left(ch\frac{X}{Y_{0}}=1\right)/ch\frac{Y}{X_{0}})cos\varphi_{X}\right)_{\text{ЛИ}}(X+=Y-)+(\Pi K_{X}=m_{0})(X-).$$

Symmetries of such mass$(X+=Y-)$ trajectories in levels n- convergence, under conditions of $ch\frac{Y}{X_{0}}cos\varphi_{X}=1$, quantum relativistic corrections $(1-(\alpha=W/c=1/137)^{2})=(1+\alpha)(X+)(1-\alpha)(X-)$in levels, form a new and new stage n- convergence, and in the most general form, a dynamic mass:

$$\overline{m}=\left(\left[\left\{\frac{m_{0}}{\sqrt{2}ch2}=\overline{m}_{1}\right\}(1+\alpha)=\overline{m}_{2}\right](1+\alpha)=\overline{m}_{3}\right)(X+)+m_{0}(X-).$$

in the quantum field of the Dirac equation, already without the scalar boson. For example, for $m_{0}=m_{p}=938{,}279MeV$

$\overline{m}=\left\{\frac{m_{p}}{\sqrt{2}ch2}=\overline{m}_{1}\right\}\left(\alpha=\frac{1}{137.036}\right)(X+)+m_{p}(X-)=939.57\ MeV=m_{n},$

$\overline{m}=\left\{\frac{m_{p}}{\sqrt{2}ch2}=(\overline{\pi}^{0})\right\}(X+)+m_{n}(X-)=(\Lambda^{0}=1115.9\ MeV),\ \overline{\pi}^{0}=176{,}35\ MeV,$

$\overline{m}=[\left\{\frac{m_{p}}{\sqrt{2}ch2}=\overline{m}_{1}\right\}(1+\alpha)=\overline{\pi}^{0}(1+\alpha)=\overline{m}_{2}=\overline{\pi}^{-}](X+)+m_{p}(X-)=(\Lambda^{0}=1115.9\ MeV),\pi^{-}=177{,}637\ MeV$

With relativistic masses π- mesons, with speeds$(W = 0{,}64 * c)$ in quantum relativistic dynamics. Similarly, further:

$\Sigma^+(p^+, \pi^0) = \sqrt{2} * \overline{\pi}^0(1+\alpha)(X+) + m_p(X-) = 1189{,}5\ (1189{,}64) MeV,$

$\Sigma^-(n, \pi^-) = \sqrt{2} * \overline{\pi}^-(1+\alpha ch2)(X+) + m_n(X-) = 1197{,}68\ (1197{,}3) MeV,$

$\Sigma^0\left(\Lambda^0, \gamma\right) = \sqrt{2} * \overline{\pi}^0(1+\alpha)^2(X+) + m_n(X-) = 1192{,}6\ \ MeV, \Lambda^0 = \Lambda^0(n, \pi^0),$

$\Xi^0\left(\pi^0, \Lambda^0(n, \pi^0)\right) = \left[2\overline{\pi}^0(1+\alpha)^2(1+2\alpha ch2)\right](X+) + m_p(X-) = 1315{,}8 MeV^{**}$

$\Xi^-\left(\pi^-, \Lambda^0(p, \pi^-)\right) = \left[2\overline{\pi}^-(1+2\sqrt{2}\alpha ch2)\right](X+) + m_p(X-) = 1321{,}14 MeV,$

$\Omega^-(\Xi^0, \pi^-)(\Xi^-, \pi^0) = \left[\frac{ch2}{\sqrt{2}}(\overline{\pi}^0(1+\alpha)^2)ch1\right](X+) + m_p(X-) = 1672{,}8\ MeV,$

$\Lambda_C^+ = \left[2(\frac{m_p}{\sqrt{2}} = \overline{\pi}^0 ch2)(1+\alpha)^2(X+) + m_p(X-)\right] = \left[2ch2(\overline{\pi}^0(1+\alpha) = \overline{\pi}^-)(1+\alpha)(X+) + m_p(X-)\right] = 2284{,}6 MeV$

Let us denote the constant $(1 + (ch2)^2(\alpha)^2) = S = 1{,}10328758$, the relativistic mass $(m_0 = 2797{,}53375\ MeV)$and rewrite the formula as: $\overline{m} = \left(\left(\left((m_0 S = \overline{m}_1)S = \overline{m}_2\right)S = \overline{m}_3\right)S = \overline{m}_4\right) + \frac{1}{2}m_0\alpha$, then

charmonium levels:

$\overline{m} = (\overline{m}_1 = 3086{,}48 MeV) + \left(\frac{1}{2}m_0\alpha = 10{,}2\ MeV\right) = 3096{,}68 MeV = j/\psi$,$(3096{,}7 MeV)$ valid,

$\overline{m} = (\overline{m}_2 = 3405{,}275 MeV) + \left(\frac{1}{2}m_0\alpha = 10{,}2\ MeV\right) = 3415{,}475 MeV = \chi_0$, $(3415\ MeV)$,

$\overline{m} = \chi_0(1 + \alpha * ch2)\ = 3509{,}27 MeV = \chi_1$, $(3510\ MeV)$,

$\overline{m} = \left(\frac{m_1}{(1+\alpha * ch2)^2} = 2923{,}74 MeV\right) + (2m_0\alpha = 40829 MeV) = 2964{,}6 MeV = \eta_C,\qquad (2980\ MeV),$

Similarly, mass fields$(Y- = m_e)$ electron, $\overline{m} = \frac{m_e}{(cos\varphi = \sqrt{G/2})} = m_0 = 2798.16\ MeV$, give:

$\overline{m} = \frac{2m_0}{(ch2)^3}\left(1 + \frac{\alpha}{\sqrt{2}}\right) = 105{,}6\ MeV$, $muon$, and then mesons:

$\overline{m} = \frac{m_0}{\sqrt{2}(ch2)^2} = 139{,}78\ MeV = \pi^{\pm}, \qquad \overline{m} = \frac{m_0}{\sqrt{2}(ch2)^2}(1 - \sqrt{2} * \alpha * ch2) = 134{,}3\ MeV = \pi^0,$

$\overline{m} = \left(\frac{m_0}{4\sqrt{2}} = m_1\right) * \left(1 + \frac{\alpha}{\sqrt{2}}\right) = 497{,}2\ MeV = K^0, \overline{m} = (m_1)/\left(1 + \frac{\alpha}{2\sqrt{2}}\right) = 493{,}4\ MeV = K^{\pm},$

Such a technology of calculations, in the conditions of $(X\pm = Y \mp)$dynamic $(\varphi \neq const)$space, in Euclidean axiomatics $(\varphi = const)$and without $(X\pm = Y \mp)$fields, is impossible in principle. We are talking about a different technology of the theories themselves. Just as it is impossible to imagine the quantum relativistic dynamics of the Quantum Theory of Relativity in Euclidean axiomatics $(\varphi = 0 = const)$. This is impossible in principle.

Different structures of decay products of elementary particles give different generations $(Y- = u)(X+ = d)$of quarks, as models. Here quanta $(Y- = p/n)$and $(Y- = 2n)$Strong Interaction of nucleons $(\text{p} \approx n)$of the nucleus. Since the density $(\frac{\partial B(X-)}{\partial T})$of the field of the neutrino trajectory $\rho(X- = \nu_e)$is much greater than the density of the field of the proton trajectory $\rho(X- = p)$, then in the quanta of the Strong Interaction of nucleons $(\text{p} \approx n)$of the nucleus, with the decay products of the neutron

$$(Y\pm = n) = (X = d)(Y = u)(X = d) = (\boldsymbol{X} - = \boldsymbol{p}^+)(\boldsymbol{Y} + = e^-)(\boldsymbol{X} - = \nu_e^-)\text{And}$$

proton annihilation $(\text{X}\pm = p^+) = (Y = u)(X = d)(Y = u) = (\boldsymbol{Y} - = \gamma_0^+)(\boldsymbol{X} + = \nu_e^-)(\boldsymbol{Y} - = \gamma_0^+)$, protons are "tied" by a "rigid string" of the vortex magnetic field of $(X- = \nu_e)$the neutrino trajectory, as the reason for the stability of such quanta of the Strong Interaction in the nuclei of atoms. In this case, we have quanta of the Strong Interaction $\left(Y-\right) = (X+)(X+)\big) = cos\varphi_Y * 2p = 2\alpha * p = (Y- = p/n)$. From this follows the relationship: $2\alpha * p = \Delta m(Y-) = 13{,}69\ MeV$. This corresponds to the equation:

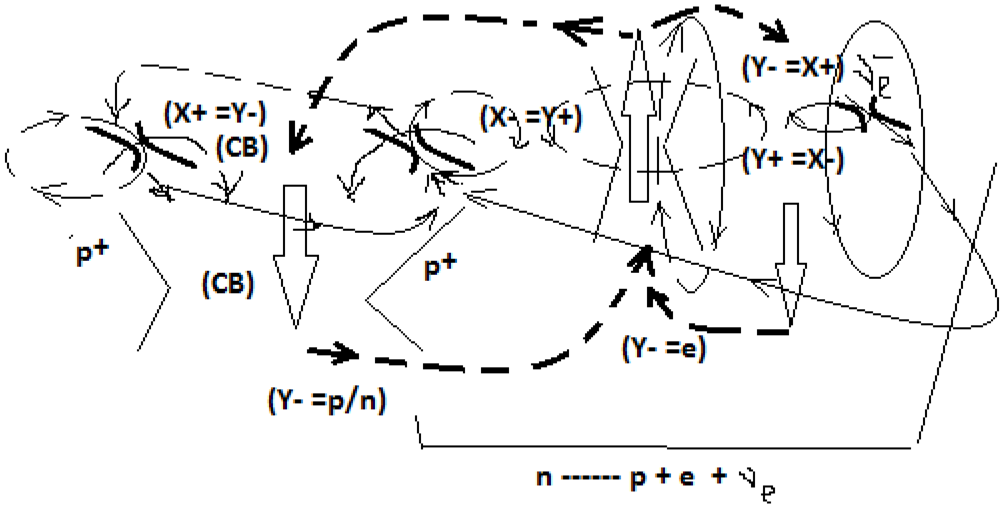
$$G(\text{X}+) = \psi\frac{\hbar\lambda}{\Delta m^2}G\frac{\partial}{\partial \text{t}}grad_n R g_{ik}(\text{X}+).$$

We have a quantum$(Y- = p/n)$ Strong Interaction in nuclei, with minimum $\Delta E_N = 6{,}85\ MeV$and maximum $\Delta E_N \approx 8{,}5\ MeV$specific binding energy or $\Delta m(Y-) = 17\ MeV$, nucleons of the nucleus. By analogy with the bremsstrahlung of an electron $(Y- = e^-) \rightarrow (Y- = \gamma^+)$of X-rays, physically radiation is acceptable $\left(Y- = \alpha\left[\left(\frac{p^+}{n}\right)\text{или}(2n)\right] = e_+^*\right) \rightarrow (Y- = (14-17)\ MeV = \gamma_-^*)$ quanta of "dark matter" with mass$(Y-)$ trajectories. They have$(Y+)$ charge field and can react to a magnetic field. We are talking about the bremsstrahlung of the ${}_1^2H$deuterium nucleus. Such quanta of "dark matter" are absorbed by quanta$(Y- = p/n)$ shells nuclei of atoms. Similar quanta of "dark matter" are given by the nuclei of planets $(Y- = 223{,}36 GeV)$, stars $(Y- = 4{,}3 * 10^6 GeV)$, "black holes" $(Y- = 1{,}5 * 10^7 TeV)$ and galactic nuclei $(Y- = 2{,}48 * 10^{11} TeV)$.

Unified Maxwell equations for electromagnetic $(Y+ = \text{X}-)$fields and gravity $(\text{X}+ = \text{Y}-)$ mass fields of quanta $(Y- = p/n)$and $(Y- = 2n)$the Strong Interaction of nucleons of the nucleus,

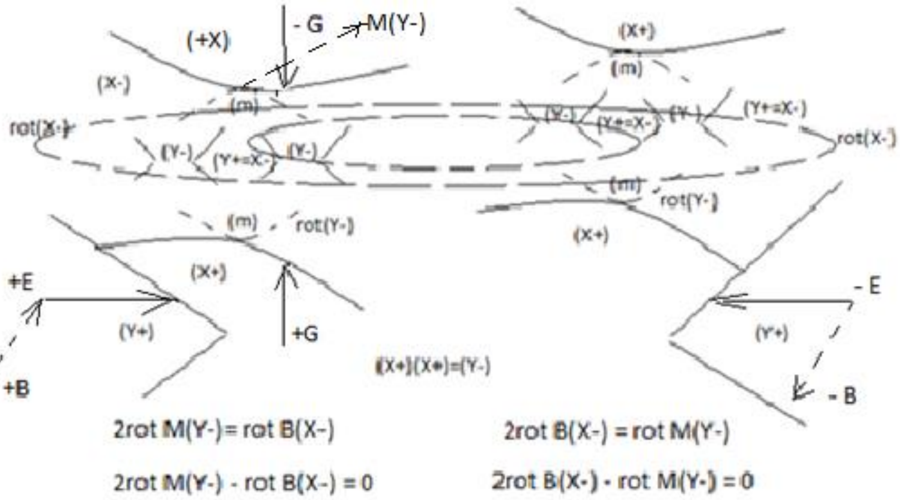
$c * rot_Y B(X-) = \varepsilon_1 \frac{\partial E(Y+)}{\partial T} + \lambda E(Y+);$ $rot_X E(Y+) = -\mu_1 \frac{\partial H(X-)}{\partial T} = -\frac{\partial B(X-)}{\partial T};$	$c * rot_X M(Y-) = \varepsilon_2 * \frac{\partial G(X+)}{\partial T} + \lambda * G(X+)$ $rot_Y G(X+) = -\mu_2 * \frac{\partial N(Y-)}{\partial T} = -\frac{\partial M(Y-)}{\partial T};$

suggest the presence in the nucleus of closed $rot_Y B(X-)$vortex shells, magnetic fields and vortex $rot_X M(Y-)$mass $(Y-)$trajectories of exchange quanta, as $(\Delta E = \Delta m(Y-)c^2)$the binding energy of the nucleus $\Delta m = 2\alpha m(p) = \frac{2*938,28}{137,036} = 13,694\ MeV$, with a minimum specific binding energy of the nucleons of the nucleus $\Delta E = 6,85\ MeV$, that is, a mass defect(m) on the diagram. Let us represent the quanta $(Y- = p/n)$and $(Y- = 2n)$the Strong Interaction of nucleons in the form of models in the levels and shells of the atomic nucleus.



Quantum $(Y- = p/n)$and similar$(Y- = 2n)$ Strong Interaction

Based on these properties $(X- = p^+)$and$(X- = \nu_e^-)$, the decay time of a neutron in a strong $(X-)$magnetic field should increase. This is verified in an experiment.



Such quanta$(Y- = p/n)$ and $(Y- = 2n)$the Strong Interaction of the nucleus form structures $(X\pm)$And$(Y\pm)$ quanta of the nucleus. At the same time, in the nucleus there is really a general state of the equations of the dynamics of a single $(X\pm = Y\mp)$ space-matter. Let us sum up these equations for closed vortex

$rot(Y-)$ And$rot(X-)$ fields in the "standing waves" of the core, without their densities$\lambda_1 E(Y+)$ And $\lambda_2 G(X+)$ in the form: $c * rot_Y B(X-) + c * rot_X M(Y-) = \varepsilon_1 \frac{\partial E(Y+)}{\partial T} + \varepsilon_2 * \frac{\partial G(X+)}{\partial T}$, and we will reduce these fields to $(X\pm)$and$(Y\pm)$ quanta of the nucleus of one frequency $\frac{\partial}{\partial T} = \omega$, oscillations of all quanta in the structure of the nucleus. $c * rot_X M(Y-) - \varepsilon_1 \omega\, E(Y+) = \varepsilon_2 \omega G(X+) - c * rot_Y B(X-) = 0$, with zero densities outside the vortices. The fact is that the "+" substance of the mass $(Y- = X+)$fields corresponds to the "-" charge of the electric $(Y+)$ fields$(Y\pm)$ quanta, and vice versa for antimatter. A single frequency of oscillations of all quanta in the structure of the nucleus in a single$(X\pm = Y\mp)$ space-matter has the form:

$\omega = \frac{c*rot_X M(Y-)}{\varepsilon_1 E(Y+)} = \frac{c*rot_Y B(X-)}{\varepsilon_2 G(X+)}$ or $\varepsilon_2 G(X+) * c * rot_X M(Y-) = \varepsilon_1 E(Y+) * c * rot_Y B(X-)$,
for gravity $(X+ = Y-)$ mass and electromagnetic $(Y+ = X-)$fields of nuclear quanta.

The unified fields for the orbital electrons external to the nucleus are summed in exactly the same way.$(X\pm = Y\mp)$,

$rot_X E(Y+) + rot_Y G(X+) = \omega B(X-) + \omega M(Y-), rot_Y G(X+) - \omega B(X-) = \omega M(Y-) - rot_X E(Y+) = 0$,

$\omega = \frac{rot_Y G(X+)}{B(X-)} = \frac{rot_X E(Y+)}{M(Y-)}$, or $rot_Y G(X+) * M(Y-) = rot_X E(Y+) * B(X-)$ in united$(X\pm = Y\mp)$ fields.

It should be noted that the wave function of a quantum field has a material essence.$\pm\psi_E \equiv \pm E(Y+)$ electric field strength or $\pm\psi_B \equiv \pm B(X-)$magnetic vector field induction. Then $(\psi_E)^2 \sim (\varepsilon\varepsilon_0 E^2 = \frac{W_E}{V})$ the energy density of the electric and $(\psi_B)^2 \sim (\frac{B^2}{\mu\mu_0} = \frac{W_B}{V})$magnetic fields with the total energy density $\psi^2 = (\psi_E)^2 + (\psi_B)^2$ electromagnetic vector field. In this case, in the $S = \pi r^2 \equiv \psi^2$cross-sectional area of interactions with probability $\frac{\psi^2}{\psi^2_{MAX}=1} \leq 1$, has the form $(i\psi)^2 = (+\psi)(-\psi)$superposition of the wave function of the quantum field. But when fixing the energy, we fix either $(+\psi)(+\psi) = \psi^2$, or $(-\psi)(-\psi) = \psi^2$, always positive $(\frac{W}{V} = \psi^2) > 0$, energy density. We are talking about the collapse of the wave function. We can talk about the electric field $(+E(Y+))$of the electron and$(-E(Y+))$ positron in a superposition of the wave function $(i\psi)^2 = (+\psi)(-\psi) = -\frac{W}{V} < 0$, which is what Dirac did. But exactly such wave functions have $\pm\psi_G \equiv \pm G(X+)$ quantum gravity fields and $\pm\psi_M \equiv \pm M(Y-)$ quanta of the mass field, with exactly the same mathematical apparatus of representation. We are talking about nuclear fields or in the cross-sections of interactions of mass particles, quantum gravitational $G(X+) = M(Y-)$mass fields.

In general, quanta $(Y\pm = \frac{p}{n} = {}^2_1H)$and $(X\pm = 2\frac{p}{n} = {}^4_2\alpha)$shells of the nucleus form level and shells of electrons in the spectrum of atoms. In unified models of decay products of the spectrum of masses of elementary particles, in unified fields $(Y- = X+)$, $(Y+ = X-)$space-matter, it is possible to represent the nuclei of the spectrum of atoms. Based on the calculations of the masses of the proton and neutron:

$(X\pm = p) = (Y- = \gamma_o)(X+ = \nu_e)(Y- = \gamma_o) = \left(\frac{2\gamma_o}{G} - \frac{\nu_e}{\alpha^2}\right) = 938{,}275\ MeV$,

$(Y\pm = n) = (X- = \nu_e)(Y+ = e)(X- = p) = (T = 878{,}77)\exp\left(\frac{\nu_e}{\sqrt{G}} + \frac{e}{2} - p\sqrt{G}\right) = 938{,}57\ MeV$,

we talk about the quanta of the Strong Interaction in the structures of the nucleus in the form of models of charged $\left(Y\pm = \frac{p}{n}\right) = (X+ = p) + [(X+ = p)(e)(\nu_e) = n]$and neutral quanta of the Strong Interaction $(Y\pm = 2n) = [n = (\nu_e)(e)(X+ = p)] + [n = (X+ = p)(e)(\nu_e)]$, when fields $(X+)(X+) = (Y-)$form mass $(Y-)$trajectories. Such$\left(Y\pm = \frac{p}{n}\right)$ And $(Y\pm = 2n)$ quanta and form the structures of the nucleus in a single $(X\pm = Y\mp)$ its space-matter, with closed vortex$(X-)$ magnetic fields and$(Y-)$ mass fields. Let us represent the structures of the nucleus in the form of such models of charged$\left(Y\pm = \frac{p}{n}\right)$ quanta of the Strong Interaction. For example:

$(Y\pm = \frac{p}{n} = {}^2_1H)$, $(X\pm) = \left(Y+ = \frac{p}{n}\right)\left(Y+ = \frac{p}{n}\right) = (X- = {}^4_2\alpha)$, $(Y- = {}^1_0n)(X+ = {}^1_1H)(Y- = {}^1_0n) = (X\pm = {}^3_1H)$,

$(X+ = {}^3_1H)(X+ = {}^4_2H) = (Y- = {}^7_3Li)$, and so on $(X- = {}^4_2\alpha)(Y+ = {}^1_0n)(X- = {}^4_2\alpha) = (Y- = {}^9_4Be)$.

$(X+ = {}^4_2\alpha)(Y-)(X+ = {}^4_2\alpha)(Y-)(X+ = {}^4_2\alpha) = (X+ = {}^{12}_6C)$,

$(X+ = {}^4_2\alpha)(Y-)(X+ = {}^4_2\alpha)(Y- = {}^2_1H)(X+ = {}^4_2\alpha) = (X+ = {}^{14}_7N)$.

New structure inside the kernel $(X+ = {}^4_2\alpha)(X+ = {}^4_2\alpha) = ({}^8_4Y-)$ gives kernels: $({}^8_4Y+)({}^8_4Y+) = (X- = {}^{16}_8O)$, $(Y- = {}^8_4Y+)(X+ = {}^3_1H)(Y- = {}^8_4Y+) = (X\pm = {}^{19}_9F)$, and similarly, further.

We can say that for the core ${}^A_ZX(N)$, "free"$(A - 2Z = N)$ neutrons in the form of neutral $(Y\pm = 2n)$quanta of the Strong Interaction also form their structures inside the structures of charged$(Y\pm = p/n)$ quanta of the Strong Interaction. Structures of charged quanta $(Y\pm = p/n)$ Strong Interaction forms the structures of electron shells of atoms, as a reason. For example: neutral structure $(Y\pm = 2n)(Y\pm = 2n) = (X\mp = 4n)$, is inside the nucleus $(X\pm = {}^{40}_{18}Ar(4n))$in the form:

$$(X\mp = {}^{12}_6X)\ (Y\pm = 2n)(X\mp = {}^{12}_6X)(Y\pm = 2n)(X\mp = {}^{12}_6X) = (X\pm = {}^{40}_{18}Ar(4n)).$$

In such structures, equations and electrons work. $(Y+ = X-)$ magnetic fields and gravity equations $(X+ = Y-)$mass fields simultaneously, in the form of fields $(Y+)(Y+) = (X-)$and $(X+)(X+) = (Y-)$.
Similarly, further: ${}^{75}_{33}As(9n) = (X- = 4n)(Y+ = 1n)(X- = 4n) = (Y\pm = 9n)$.

Note that in 100% of the states of the core, ${}^9_4(1n)$, ${}^{19}_9(1n)$, ${}^{23}_{11}(1n)$, ${}^{27}_{13}(1n)$, ${}^{31}_{15}(1n)$, ${}^{40}_{18}(4n)$, ${}^{45}_{21}(3n)$, ${}^{51}_{23}(5n)$, ${}^{55}_{25}(5n)$, , ${}^{59}_{27}(5n)$, ${}^{75}_{33}(9n)$, ${}^{89}_{39}(11n)$, ${}^{93}_{41}(11n)$, ${}^{103}_{45}(13n)$, ${}^{127}_{53}(21n)$, ${}^{133}_{55}(23n)$, ${}^{139}_{57}(25n)$, ${}^{141}_{59}(23n)$,${}^{159}_{65}(29n)$

${}^{165}_{67}(31n)$, ${}^{169}_{69}(31n)$, ${}^{175}_{71}(33n)$, ${}^{181}_{73}(35n)$, ${}^{197}_{79}(39n)$, ${}^{209}_{83}(43n)$, we obtain the final stable structure of "standing waves" of neutral $(Y\pm= 2n)$quanta of the Strong Interaction in the nucleus of an atom ${}^{209}_{83}Bi(43n)$.

$(X\mp = 4n)(Y\pm= 9n)(X\mp = 4n)(Y\pm= 9n)(X\mp = 4n)(Y\pm= 9n)(X\mp = 4n) = (43n) = {}^{209}_{83}Bi(43n)$, inside the structure of charged$(Y\pm= \mathrm{p}/n)$ quanta of the Strong Interaction of the nucleus, which form the structures of the electron shells of atoms, as the cause.

Such neutral quantum structures $(Y\pm= 2n)$are in the corresponding shells of charged $(Y\pm= \mathrm{p}/n)$quantum structures of the Strong Interaction in self-consistent fields closed in a figure eight, a chain of vortex fields. All this corresponds to the equations of dynamics, can be modeled, calculated and predicted. By saturating these $(Y\pm)$, $(X\pm)$ quanta of the nucleus shells with the energy of the quanta of $(Y-= 14-17)\ MeV$"dark matter ", it is possible to cause "ionization" of the nucleus shells. In such artificial radioactivity, it is possible, for example, from the nuclei of atoms $({}_{80}Hg - {}^{2}_{1}H)$or $({}_{81}Tl - {}^{4}_{2}He)$, to obtain $({}^{197}_{79}Au)$gold. As in the case of a controlled thermonuclear reaction at a collider, a trial experiment is needed here. In the most general case, the dynamics of $\mathrm{rot_x M(Y-)}$inductive mass fields (" hidden masses ") is determined by the dynamics of the gravity source.

$$\mathrm{c} * \mathrm{rot_x M(Y-)} = \frac{1}{r}G(\mathrm{X+}) + \varepsilon_2\frac{\partial G(\mathrm{X+})}{\partial \mathrm{t}}.$$

<u>For $n \neq 1$,</u> and $n = 2,3,4 \ldots \to \infty$, we obtain the quasipotential $G(\mathrm{X+})$acceleration fields $G(\mathrm{X+})$of the quantum gravitational field as a source of gravity

$G(\mathrm{X+})\frac{\psi}{t_T}G * grad_n\left(\frac{1}{2}Rg_{ik}\right)(\mathrm{X+})$, with the limit $(cos^2\varphi(\mathrm{X-})_{MAX} = G)$- the angle of parallelism of the quantum $G(\mathrm{X+})$field of the Strong Interaction in this case and the period $T = \frac{\lambda}{c}$of quantum dynamics. Quasi-potential $G(\mathrm{X+})$fields of the quantum gravitational field of accelerations, at distances $\mathrm{c} * t = r$ have the form:

$$G(\mathrm{X+}) = \frac{\psi*\lambda}{r}\left(G * grad_n\left(\frac{1}{2}Rg_{ik}\right)(\mathrm{X+}) + \alpha * grad_n(T_{ik})(\mathrm{Y-})\right), r \to \infty.$$

This is the equation of the quantum gravitational field **of accelerations** $G(X+) = v_Y M(Y-)$, mass trajectories with the principle of equivalence of inertial and gravitational mass. It has a fundamental difference with the equation of gravitational **potentials** of the General Theory of Relativity. The component of the gravitational quasi-potential field and the energy-momentum tensor (T_{ik}) in the equation $G(\mathrm{X+}) = \frac{\psi*\lambda}{r} * grad_l(T_{ik})(\mathrm{Y-})$relate to inductive mass fields in the physical vacuum. In brackets we have the gradient of the potentials of the gravitational $(\mathrm{X+= Y-})$mass field.

$$G * grad_n\left(\frac{1}{2}Rg_{ik}\right)(\mathrm{X+}) + \alpha * grad_n(T_{ik})(\mathrm{Y-}) = G * \alpha * grad_\lambda\frac{1}{2}\Pi(\mathrm{X+= Y-}).$$

It follows from this $G(\mathrm{X+}) = \frac{\psi(\lambda=1)}{r} * G * \alpha * grad_\lambda(\frac{1}{2}\Pi(\mathrm{X+= Y-}))$.

The general gravitational potential $\Pi(\mathrm{X+= Y-})$in general form includes both the potential of the gravitational source $(\frac{1}{2}Rg_{ik})(\mathrm{X+})$and the quasi-potential $(T_{ik})(\mathrm{Y-})$fields of inductive masses. We will write the same equation in other quantum parameters, namely:

$$G(\mathrm{X+}) = \frac{\psi*(Tc=\lambda)}{(t=nT)c}G\alpha(\frac{1}{2\lambda}\Pi(\mathrm{X+= Y-}))\text{or } G(\mathrm{X+}) = \frac{\psi*\left(\frac{1}{T}=\nu=\frac{\mathcal{E}}{\hbar}\right)}{nc}G\alpha\left(\frac{1}{2}\Pi\right), G(\mathrm{X+}) = \frac{\psi*\mathcal{E}}{n\hbar c}G\alpha(\frac{1}{2}\Pi).$$

Here the gradient of the general gravitational mass $\Pi(\mathrm{X+= Y-})$potential is taken over the entire wavelength (λ). We are talking about the quantum levels of the mass trajectories of the orbital electrons of the atom, in the form:

$n\hbar = m_e Vr)$. And further: $\frac{mV^2}{r} = \frac{ke^2}{r^2}$, $V = \sqrt{\frac{ke^2}{mr}}$, $(m_e r\sqrt{\frac{ke^2}{r}} = n\hbar)$, $n\hbar = \sqrt{m_e rke^2}$, $r = \frac{n^2\hbar^2}{m_e ke^2}$,

for energy, $\mathcal{E} = \frac{ke^2}{r} = \frac{m_e k^2 e^4}{n^2\hbar^2}$, during radiation, $\Delta\mathcal{E} = \frac{m_e k^2 e^4}{\hbar^2}\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right) = \hbar\nu$, of an atom.

These are the unified mathematical truths of the unified equations of the unified $(Y\mp = \mathrm{X}\pm)$space-matter.

Examples.

For the angular velocity $(\omega = \frac{2\pi^r}{T} = \frac{1^r}{t})\left[\frac{r}{s}\right]$of inductive mass $M(Y-)$trajectories in orbits (r)around the Sun in its $G(\mathrm{X+})$gravitational field, there is a rotation of this field.

$$rot_y G(\mathrm{X+}) = -\mu_2 * \frac{\partial N(Y-)}{\partial t} = -\frac{\partial M(Y-)}{\partial t}, \text{ or } \ rot_y G(\mathrm{X+}) = \omega M(Y-).$$

For Mercury, at perihelion $r_{\text{м}} = 4{,}6 * 10^{12}$см, with an average speed of $4{,}736 * 10^6$см$/c$, there is a centrifugal acceleration of $a_{\text{м}} = \frac{(v_{\text{м}})^2}{r_{\text{м}}} = \frac{(4{,}736*10^6)^2}{4{,}6*10^{12}} = 4{,}876$ см/с^2. The mass of the Sun $M_s = 2 * 10^{33}$г, and the radius of the Sun $r_0 = 7 * 10^{10}$см, create an acceleration $G(\mathrm{X}+)$of the gravitational field with $(\psi = 1)$in the form of.

$$g_м = G(\mathrm{X}+) = \frac{1*(\lambda=1)}{r_м} * G * \frac{M_S}{2r_0} * \alpha \text{or } g_м = \frac{6.67*10^{-8}*2*10^{33}}{2*4{,}6*10^{12}*7*10^{10}*137} = 1{,}511 \text{ см/с}^2.$$

From the relation of general relativity, $R_{ik}(X+) = 2\psi\left(\frac{1}{2}Rg_{ik}(X+) + кT_{ik}(Y-)\right)$, follow analogous relations in the space of accelerations, inductive mass $M(Y-)$trajectories around the Sun of the space-matter itself at the average radius $r_м = 5{,}8 * 10^{12}$смin the form.

$$a_м(\mathrm{X}+) - g_м(\mathrm{X}+) = \Delta\,(Y-) = 4{,}876 - 1{,}511 = 3{,}365 \text{ см/с}^2.$$

From the equation of gravitational (X+= Y−)mass fields $rot_yG(\mathrm{X}+) = \omega M(Y-)$, it follows $\frac{\Delta\,(Y-)}{\sqrt{2}} = \frac{2\pi^r}{T}M(Y-)$, the rotation of Mercury's perihelion in time (T). For $100лет = 6.51 * 10^{14}$c, this rotation of mass $M(Y-)$trajectories is $\frac{\Delta\,(Y-)*6.51*10^{14}}{r_м*2\pi\sqrt{2}}(57{,}3^0) = 42{,}5''$. We are talking about the rotation of all space-matter around the Sun. Similarly, further.

For the Earth, at the distance of the Earth's orbit and the speed of the Earth $v_3 = 3 * 10^6$см/cin orbit $r_3 = 1.496 * 10^{13}$ см, the centrifugal acceleration is equal to:

$$a_3 = \frac{(v_3)^2}{r_3} = \frac{(3*10^6)^2}{1.496*10^{13}} = 0{,}6 \text{ см/с}^2.$$

acceleration $G(\mathrm{X}+)$of the gravitational field of the Sun $r_0 = 7 * 10^{10}$см, with mass $(M_s)$and $(\psi = 1)$, is

$$g_3 = G(\mathrm{X}+) = \frac{1}{r_3} * G * \frac{M_S}{2r_0} * \alpha = \frac{6.67*10^{-8}*2*10^{33}}{2*1.496*10^{13}*7*10^{10}*137} = 0.465 \text{ см/с}^2.$$

Similarly, $a_3(\mathrm{X}+) - g_3(\mathrm{X}+) = \Delta\,(Y-) = 0{,}6 - 0{,}465 = 0{,}135$ см/с^2. From this acceleration of inductive mass $M(Y-)$trajectories of space-matter around the Sun, the rotation of the perihelion of the Earth's orbit follows, by analogy, and is

$$\frac{\Delta\,(Y-)*6.51*10^{14}}{r_3*2\pi}(57{,}3^0) = 5{,}8''.$$

For Venus, according to the same calculation scheme, the rotation of the perihelion of Venus $r_в = 1.08 * 10^{13}$ см, and the speed $v_в = 3{,}5 * 10^6$см/с, the centrifugal acceleration of Venus in orbit is

$$a_в = \frac{(v_в)^2}{r_в} = \frac{(3{,}5*10^6)^2}{1.08*10^{13}} = 1{,}134 \text{ см/с}^2.$$

Similarly, the acceleration of the Sun's $G(\mathrm{X}+)$gravitational field in the orbit of Venus is.

$$g_в = G(\mathrm{X}+) = \frac{1}{r_в} * G * \frac{M_S}{2r_0} * \alpha = \frac{6.67*10^{-8}*2*10^{33}}{2*1.08*10^{13}*7*10^{10}*137} = 0.644 \text{ см/с}^2.$$

Acceleration of inductive mass $M(Y-)$trajectories of space-matter around the Sun,

$$a_в(\mathrm{X}+) - g_в(\mathrm{X}+) = \Delta\,(Y-) = 1{,}134 - 0.644 = 0{,}49 \text{ см/с}^2.$$

From this follows the rotation of the perihelion of Venus: $\frac{\Delta\,(Y-)*6.51*10^{14}}{r_3*\pi}(57{,}3^0) = 9{,}4''$seconds per 100 years.

These calculated values are close to the observed values. It is significant that from Einstein's formula for the shift of Mercury's perihelion,

$$\delta\varphi \approx \frac{6\pi GM}{c^2A(1-\varepsilon^2)} = 42{,}98'' \text{for 100 years.}$$

$$c^2A(1-\varepsilon^2) * \delta\varphi \approx 6\pi GM, (c^2A - c^2A\varepsilon^2)\delta\varphi \approx 6\pi GM$$

there is no apparent reason for such a shift, except for the curvature of space from the equation of General Relativity. The idea is that the difference in the rate of relativistic time on the orbit causes its rotation and is proportional to the eccentricity. At the same time, the slowing down of the rate of time (Δt_{21}^2)in the gravitational $(\mathrm{X}+)$field at perihelion gives a relativistic contraction of $(-\Delta x_{21}^2)$the mass $(Y-)$trajectory in Einstein's equation. Formally, this is $(rot_yG(\mathrm{X}+) = \frac{\Delta G(\mathrm{X}+)}{(-\Delta\bar{x}_{21})}) = (\frac{\partial M(Y-)}{\partial T} = \frac{\Delta M(Y-)}{(\Delta t_{21})})$a mathematical truth. The physical reason is that the planet is pushed along the mass $(Y-)$trajectory action of gravity $G(\mathrm{X}+)$fields, when it rotates around the star. We are talking about the presence of inductive mass $M(Y-)$fields of space-matter, and their rotation around the Sun, as a cause, in accordance with the equations of dynamics. In other words, space- matter itself rotates around the Sun. For the same reasons, we will consider **the movement of the Sun around the core of the Galaxy.**

Initial data. The speed of the Sun in the Galaxy $v_S = 2{,}3 * 10^7$см/с, the mass of the Galactic core $M_я = 4{,}3$ млн.$M_S = 4{,}3 * 10^6 * 2 * 10^{33}$г, the distance to the center of the Galaxy 8,5 кпкor $r = 2{,}6 * 10^{22}$см. The centrifugal acceleration of the Sun in the galactic orbit:

$$a_s = \frac{(v_s)^2}{r} = \frac{(2{,}3*10^7)^2 = 5{,}29*10^{14}}{2{,}6*10^{22}} = 2*10^{-8}\ \text{см}/\text{с}^2.$$

Using this calculation technology, we will estimate the radius of the core of our Galaxy $r_я$. In exactly the same calculation formula we will get ($r_я$.) the radius of the core of our Galaxy $g_s = G(\text{X}+)$.

$$a_s = G(\text{X}+) = \frac{1}{r} * G * \alpha * \frac{M_я}{2r_я},\ \text{where}$$

$$r_я = \frac{1}{r} * G * \alpha * \frac{M_я}{2a_s} = \frac{6.67*10^{-8}*4{,}3*10^6*2*10^{33}\text{г}}{2*137*2{,}6*10^{22}*2*10^{-8}} = 4*10^{15}\text{см} \approx 267\ \text{а.е.},$$

$1\text{а.е.} = r = 1{,}496*10^{13}\text{см}$, or, $1\text{пк} = 3*10^{18}\text{см}$, then $r_я \approx 1{,}3*10^{-3}$ пк.Such a radius in our Galaxy corresponds to the gradient of all mass fields of the gravity source,

$$G(\text{X}+) = \frac{\psi(\lambda=1)}{r} * G * \alpha * grad_\lambda(\frac{1}{2}\Pi(\text{X}+=\text{Y}-)),\ \text{with radius}\ r_я \approx 1{,}3*10^{-3}\ \text{пк}.$$

Limits of the measurable radius $r_{0я} \approx 10^{-4}$ пк.Their ratio corresponds to the ratio of their masses.

$$\frac{r_{0я}}{r_я} * 100\% = \frac{10^{-4}}{1{,}3*10^{-3}} * 100\% = 7{,}69\ \%\ .$$

This means that the mass of the galactic core is made up of $7{,}69\ \%$ hidden mass $M(Y-)$fields.

Parameters of the Moon. It is well known that in the position of the Moon between the Sun and the Earth, according to Newton's law, the Sun attracts the Moon 2.2 times stronger than the Earth.

For $M_S = 2*10^{33}g$, $m_E = 5{,}97*10^{27}g$, $r_E = 6{,}371*10^8 cm$, $m_M = 7{,}36*10^{25}g$, $r_M = 3{,}844*10^{10}cm$, $G = 6{,}67*10^{-8}$, $\alpha = 1/137$, $(\Delta A = 1{,}496*10^{13} - r_M = 1{,}49215*10^{13}cm)$,

$$F_1 = \frac{GM_S m_M}{(\Delta A)^2} = \frac{6{,}67*10^{-8}*2*10^{33}*7{,}36*10^{25}}{(1{,}49215*10^{13})^2} = 4{,}41*10^{25},$$

$$F_2 = \frac{Gm_E m_M}{(r_M)^2} = \frac{6{,}67*10^{-8}*5{,}97*10^{27}*7{,}36*10^{25}}{(3{,}844*10^{10})^2} = 1{,}98*10^{25},\ (F_1/F_2 = 2{,}2).$$

The difference in forces $(F_1 - F_2) = (\Delta F) = (4{,}41 - 1{,}98)*10^{25} = 2{,}43*10^{25}$is compensated by the gravity of the (“hidden”) mass fields of space around the Earth, with acceleration:

$$g_E(\text{X}+) = \frac{\pi}{r_M} * G * \frac{M_E}{r_E} * \alpha = \frac{3{,}14*\sqrt{2}*6{,}67*10^{-8}*5{,}97*10^{27}}{137*3{,}844*10^{10}*6{,}371*10^8} = 0{,}372\ cm\ /s^2.$$

The gravitational force of the mass field corresponds within the measurement accuracy.

$$(\Delta F) = m_M * g_E(\text{X}+) = 7{,}36*10^{25}*0{,}372 = 2{,}74*10^{25}.$$

Thus, solutions of the equations of quantum gravitational fields give results within measurable limits.

Deflection of photons in the gravitational field of the Sun. A photon "falls" in the gravitational field of the Sun with acceleration $g(X+) = \frac{2GM_S}{R_S^2}$. During the flight time of the Sun's diameter $t = \frac{2R_S}{c}$, tangentially to the sphere of the Sun, the vertical "fall" speed is $v = g*t$. The angle of deflection of the photon, for $R_S = 6{,}963*10^{10}cm$, is defined as:

$$\varphi = arcsin\frac{v}{c},\ \text{or}\qquad \frac{v}{c} = \frac{2GM_S}{R_S^2} * \frac{2R_S}{c} * \frac{1}{c} = \frac{4*6{,}67*10^{-8}*2*10^{33}}{6{,}963*10^{10}*(3*10^{10})^2} = 8{,}515*10^{-6},$$

$$\varphi = arc\sin(8{,}515*10^{-6}) = 0{,}000488^0 = 1{,}75''\text{arc seconds}.$$

This angle corresponds to the calculations in the equations of Einstein's General Theory of Relativity. From these same equations, the slowing down of the course of time $(\Delta t \downarrow)$gives additional acceleration $(\Delta g \uparrow)$in the field of gravity, or centrifugal $(\Delta a \uparrow)$acceleration, with the principle of their $(\Delta g = \Delta a)$ equivalence at a constant speed of light $c = (\Delta g \uparrow)(\Delta t \downarrow)$. This concerns the course of time in the orbit of Mercury, from Einstein's calculations. And the course of time of one electron in various discrete orbits of an atom, in the mass fields of an atom, changes in exactly the same way. The change in the course of time of an electron in discrete orbits is associated with a change in its frequency $(\Delta\nu)$, which is accompanied by the emission or absorption of a photon $(\Delta E = \hbar\Delta\nu)$, in Planck's theory. And the deeper the "gap" in $(X+)$the field of the Strong, gravitational field near the nucleus, the greater the wavelength and the period $(Y-)$of the mass quantum trajectory$(Y- = e)$ orbital electron in a single$(X+= Y-)$ space-matter, the slower its time flow. Here we are talking about the discrete dynamics of the time flow in the quantum relativistic dynamics of any quantum of space -time, the physical vacuum near "black holes" similarly.

7. Dynamics of the Universe.

Let us consider the mathematical truths of the dynamics of the selected Criteria of Evolution. In other Criteria this will be a different representation. If $(R)$is the radius of the non-stationary Euclidean space of the sphere of the visible Universe, then from the classical Special Theory of Relativity, where $(b = \frac{K}{T^2})$ acceleration,$(c^4 = F)$ force, follows:

$$R^2 - c^2t^2 = \frac{c^4}{b^2} = \bar{R}^2 - c^2\bar{t}^2;\qquad \text{or}\qquad b^2(R\uparrow)^2 - b^2c^2(t\uparrow)^2 = (c^4 = F)\text{force}.$$

In the unified Criteria, $\left(b = \frac{K}{T^2}\right)(R = K) = \frac{K^2}{T^2} = \Pi$, we speak of the potential in the velocity space $(\frac{K}{T} = \overrightarrow{e})$ of a vector space in any $\vec{e}(x^n)$coordinate system, where we take $\Pi = g_{ik}(x^n)$, the fundamental tensor of the Riemannian space. Then in the general case we have:

$$\Pi_1^2 - \Pi_2^2 = (\Pi_1(X+) - \Pi_2(Y-))(\Pi_1(X-) + \Pi_2 * (Y+)) = (\Delta\Pi_1(X+= Y-)) \downarrow (\Delta\Pi_2(X-= Y+)) \uparrow = F$$

This force, over the entire radius $(R = K)$of the visible sphere of the unified $(X\pm= Y\mp)$space-matter of the Universe, gives (dark) energy $(U = FK)$to the dynamics of the entire Universe.

$$(\Pi_1^2 - \Pi_2^2)K = (\Pi_1 - \Pi_2)K(\Pi_1 + \Pi_2) = (\Delta\Pi_1)(X+= Y-) \downarrow K(\Delta\Pi_2)(X-= Y+) \uparrow = FK = U$$

What is its nature? On the radius $(R = K)$of the dynamic sphere of the Universe there is a simultaneous dynamic of a single $(X\pm= Y\mp)$space-matter. Considering the dynamics of potentials in gravitational mass $(X+= Y-)$ fields, as is already known, $(\Pi_1 - \Pi_2) = g_{ik}(1) - g_{ik}(2) \neq 0$, we are talking about the equation of "gravity" $R_{ik} - \frac{1}{2}Rg_{ik} - \frac{1}{2}\lambda g_{ik} = k\mathrm{T}_{ik}$, General Theory of Relativity, in any $g_{ik}(x^m \neq const)$coordinate system, and at various levels of singularity $ОЛ_j$, $ОЛ_i$ the physical vacuum of the entire Universe.

We are talking about a sphere ($x^m = \mathrm{X, Y, Z, ct} \neq const$)non-stationary Euclidean space-time, in the form: $(x^m = \mathrm{X, Y, Z, ct}) * \{\left(ch\frac{X(X+=Y-)}{Y_0=R_0(X-)}\right)(\mathrm{X}+= \mathrm{Y}-) * \cos\varphi_{\mathrm{X}}(\mathrm{X}-= \mathrm{Y}+) = 1\}$. The gradient of such $(\Delta\Pi_1)$a potential, also known, gives the equations of quantum gravity with inductive $M(Y-)$(hidden) mass fields in the gravitational field. We are talking about $(\Delta\Pi_1 \sim T_{ik}) \downarrow (X+= Y-)$the energy-momentum of the gravitational $(X+= Y-)$mass fields of the expanding Universe, with a decrease in the density of mass $(Y-)$trajectories

$$\Pi K = \frac{(K_i \to \infty)^3}{(T_i \to \infty)^2} = \left(\frac{1}{(T_i \to \infty)^2} = (\rho_i \to 0) \downarrow\right)(K_i{}^3 = V_i \uparrow)(X+= Y-) = (\rho_i \downarrow V_i \uparrow)(X+= Y-),$$

$$(R_j) * (R_i = 1{,}616 * 10^{-33} sm) = 1, \qquad (R_j) = 6{,}2 * 10^{32} sm \qquad (\rho_i(Y-) \to 0).$$

On the other hand, the very "expansion" of the physical vacuum of the Universe is caused$(\Delta\Pi_2)(X-= Y+) \uparrow$ fragmentation of the general$(X-)$ fields of the Universe, with the formation of new and new $(\Pi_1 + \Pi_2)$ quantum potentials, with densities$(\rho_i(\mathrm{X}-) \to \infty)$ pushing each other apart (in expansion),$(X-)$ fields. In the overall picture, in the expanding$(X-)$ field of the Universe, mass $(Y-)$trajectories are drawn into structures. We are talking about the properties of a dynamic, unified $(X\pm= Y\mp)$space-matter, in which from: $cos\varphi(X-)cos\varphi(Y-) = 1$, and $\lambda_i(X-)\lambda_i(Y-) = 1$, for velocities $v_i = const$, follows the period of dynamics $T_i(Y-) \to \infty$, mass $(Y-)$trajectories of quanta of $\gamma_i(Y-)$the physical vacuum at infinite radii $\lambda_i(Y-= X+) = R_j \to \infty$, the Universe. In this case, for vanishing densities $\rho_i(Y-) = \frac{1}{(T_i \to \infty)^2} \to 0$, mass trajectories, there is $(T_i \to \infty)(t_i \to 0) = 1$, proper $(t_i \to 0)$, disappearing time dynamics of the entire Universe. In other words, at infinite radii, the Universe disappears in time. On the other hand, in the depths of the physical vacuum $\lambda_i(X-) \to 0$, and the velocities $v_i = const$, we obtain the period $T_i(X-) \to 0$, quanta of the physical vacuum, with the densities of its fields $\rho_i(X-) = \frac{1}{(T_i \to 0)^2} \to \infty$. It is like a "solid bottom" of the physical vacuum, to which we will descend. $(T_i \to 0)(t_i \to \infty) = 1$, infinitely long $(t_i \to \infty)$, in a single $(X\pm= Y\mp)$space-matter. And here, the infinity of motion in time is reduced to zero $(R_i = 1{,}616 * 10^{-33} sm) \to 0$, in space-time, as is the Universe disappearing in time on $\lambda_i(Y-= X+) = R_j \to \infty$, infinite radii. Such are the mathematical truths.

Resume.

There is no space without matter and there is no matter outside space. The main property of matter is motion. The paper considers the properties of dynamic space that have the properties of matter. Dynamic space-matter follows from the properties of Euclidean axiomatics. Geometric facts of dynamic space define axioms that do not require proof. Within the framework of the axioms of dynamic space, physical properties of matter are determined. Maxwell's equations for the electromagnetic field and the equations of the dynamics of the gravitational mass field are derived in a single mathematical truth. Inductive mass fields, similar to inductive magnetic fields, follow from these equations. These are two mathematical truths and two physical realities. Further. The equations of the Special Theory of Relativity and the equations of quantum relativistic dynamics are derived in a single mathematical truth. Such equations are impossible in Euclidean axiomatics. Einstein's tensor is also a mathematical truth of the difference in relativistic dynamics at two points of Riemannian space. The principle of equivalence of inertial and gravitational masses is an axiom of the dynamic space of mass trajectories in a gravitational field. The full equation of the General Theory of Relativity is derived as a mathematical truth of dynamic space-matter with elements of quantum gravity.

Unlike Einstein's equation, in the full equation of the General Theory of Relativity, the gravitational constant follows as a mathematical truth. The equations of acceleration of the quantum gravitational quasi-potential field are derived within the framework of field theory. Within the framework of this equation, calculations of the perihelion of Mercury, the core and hidden masses of the Galaxy are performed. There are insoluble contradictions in the physics of elementary particles. For example, the fractional charge of quarks that form the charge of a proton and exactly the same charge of a positron, but without quarks. In the properties of dynamic space-matter, the charges of a proton and an electron are calculated in a single way. There are limits of applicability of the Euclidean axiomatics, which are determined by the uncertainty principle, the wave function. A scalar field is introduced into the gauge field to preserve relativistic invariance in quantum fields. There is no quantum relativistic dynamics. In turn, the Quantum Theory of Relativity is impossible in the Euclidean axiomatics. Already in the artificially created scalar field, in the model of Spontaneous Symmetry Breaking, the theory of the Higgs boson and the theory of Electro weak interaction are constructed. In both cases, the masses of these bosons are calculated within the framework of dynamic space-matter without artificially created scalar bosons. In general, the Euclidean axiomatics is a special case of a fixed state of dynamic space-matter. This reflects the reality of the properties of dynamic space-matter recorded in experiments. This is the technology of modern theories. Within the framework of the axioms of dynamic space-matter, a fundamentally new technology of the theories themselves is considered. We cannot simply take a line. It is necessarily either (X-) or (Y-) trajectories. And we cannot take simply a point ($r_0 \neq 0$), "having no parts" in Euclidean axiomatics. Such objects do not exist in Nature.

Literature.

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