Allowable structures of leptons.

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Abstract. There is no space without matter and there is no matter outside space. Space-matter is the same. Therefore, the mathematical truths of space correspond to the physical properties of matter. The main property of matter is movement; therefore space-matter is dynamic. Such dynamic space-matter has its geometric facts, as axioms that do not require proof. The limiting and special case of the axioms of dynamic space-matter is the Euclidean axiomatics and number system. And already in the real dynamic space-matter, the models of nucleons of the atomic nucleus are considered and the admissible structures of leptons are presented.

Key words: Space, Matter, Vacuum, Charge, Mass, Gravity, Bosons.

Content

1.Introduction.

The real dynamic space-matter is presented in its axioms as facts that do not require proof. We speak of a set of straight parallel lines passing through a point (O), outside the original straight-line AC, within the always dynamic $(\varphi \neq const)$angle of parallelism (Figure 1).

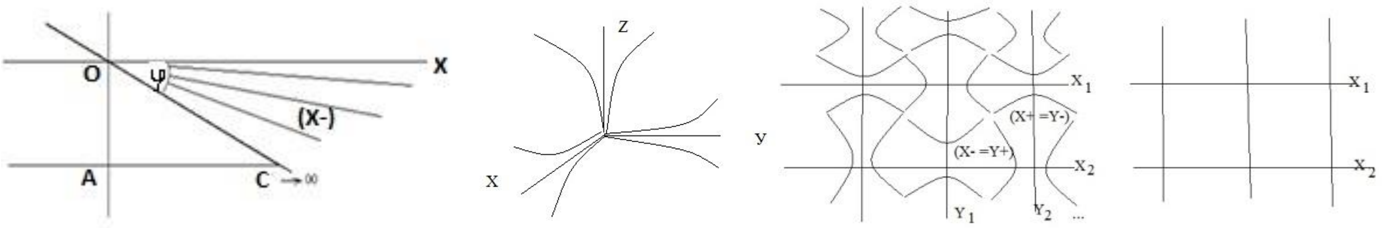

Figure 1. Dynamic space-matter.

In the Euclidean representation of space-time, we do not see everything and there is a space $(X-)$that we $(\triangle\, AOC)$cannot get into (Figure 1). But this$(X-)$ space exists, and it has its own physical properties of matter, which we do not see directly. Such space-matter has its own geometric facts, as axioms, which do not require proof.

<u>Axioms:</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_o)radius of the sphere-point "having no parts" in the Euclidean axiomatics.

3. A bundle of parallel lines with a zero angle of parallelism $(\varphi = 0)$, “equally located to all its points”, gives a set of straight lines in one “widthless” Euclidean straight line. (Mathematical Encyclopedia, Moscow, 1963, v4, p.13, p.14)

4. Internal $(X -), (Y -)$and external $(X +), (Y +)$fields of the trajectory lines are non-zero $X_0 \neq 0$ or $Y_0 \neq 0$ material sphere-points, form an Indivisible Area of Localization НОЛ$(X \pm)$orНОЛ$(Y \pm)$ dynamic space-matter.

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

6. Sequence of Indivisible Localization Regions $(X \pm), (Y \pm), (X \pm)$ ..., by radius $X_0 \neq 0$ or $Y_0 \neq 0$sphere-point 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: $НОЛ = КЭ(X- = Y +)КЭ(Y- = X +) = 1$and $НОЛ = КЭ(m)КЭ(n) = 1$, in a system of numbers equal by analogy of units.

8. Fixing the 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.

Infinity $(AC \to \infty)$cannot be stopped, therefore dynamic $(X-)$space-matter, along the axis (X), always exists (Figure 1). In this case, the Euclidean space in the axes (X, Y, Z) loses its meaning. On the plane, in the Euclidean axes (X_1, X_2 … X_n), (Y_1, Y_2 … Y_n), we do not see $(X- = Y+)$, $(Y- = X+)$ dynamic space-matter (Figure 1). Euclidean space is a special case $(\varphi = 0)$dynamic $(\varphi \neq 0) = const$ space-matter. Any point of fixed trajectory lines is represented by local basis vectors:

$$\boldsymbol{e_i} = \frac{\partial X}{\partial x^i}\boldsymbol{i} + \frac{\partial Y}{\partial x^j}\boldsymbol{j} + \frac{\partial Z}{\partial x^k}\boldsymbol{k}, \qquad \boldsymbol{e^i} = \frac{\partial x^i}{\partial X}\boldsymbol{i} + \frac{\partial x^j}{\partial Y}\boldsymbol{j} + \frac{\partial x^k}{\partial Z}\boldsymbol{k},$$

Riemannian space with the fundamental tensor: $\boldsymbol{e_i}(x^n) * \boldsymbol{e_k}(x^n) = \boldsymbol{g_{ik}}(x^n)$ (M. Korn , M. S. p.508) , and topology $(x^n = \boldsymbol{XYZ})$ 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. In this case, we obtain the usual$\boldsymbol{v_i}(x^n) * \boldsymbol{v_k}(x^n) = (v^2) = \boldsymbol{\Pi}$, the potential of space-matter, as a kind of acceleration (b)on the length (K), in the velocity space (v), that is: $(v^2 = bK)$. Riemannian space is a fixed $(\varphi \neq 0 = const)$state of a geodesic$(x^s = const)$ lines dynamic $(\varphi \neq const)$space-matter that has a variable geodesic line $(x^s \neq const)$. There is no such mathematics of Riemannian space, $\boldsymbol{g_{ik}}(x^s \neq const)$with variable geodesic. There is no geometry of Euclidean non-stationary sphere, no geometry of Lobachevsky space, with variable asymptotes of hyperbolas. These are deep and fundamental changes in the technology of theoretical research itself, which form our ideas about the world around us. We do not see it in Euclidean axiomatics.

will correlate НОЛ$(Y \pm)$the Indivisible Areas of Localization НОЛ$(X \pm)$with the indivisible quanta of space-matter: $(X\pm = p)$, $(Y\pm = e)$, $(X\pm = \nu_\mu)$, $(Y\pm = \gamma_0)$, $(X\pm = \nu_e)$,$(Y\pm = (\gamma)$ in a $(X- = Y+)$ single, $(Y- = X+)$ dynamic space-matter, as with the facts of reality:

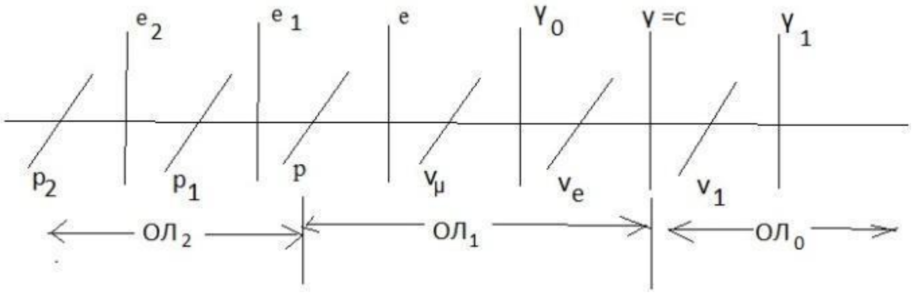

Figure 2. Indivisible quanta of space-matter.

Here $(X\pm = p)$the proton has the same charge as $(Y\pm = e)$the electron with the electron $(Y+ = X-)$ magnetic field, and the electron $(Y\pm = e)$ emits a photon $(Y\pm = \gamma)$, as facts. To maintain the continuity of a single $(X- = Y+)$, $(X+ = Y-)$space-matter $(Y\pm = \gamma_0)$, a photon is introduced, similar to $(Y\pm = \gamma)$ a photon. This corresponds to the analogy of the muon $(X\pm = \nu_\mu)$and electron $(X\pm = \nu_e)$neutrino. In this case, both neutrinos (ν_μ), (ν_e) and photons (γ_0), (γ), can accelerate, like a proton or electron, to speeds (γ_1), ($\gamma_{2...}$), according to the same Lorentz transformations, just as protons and electrons are accelerated. To the ultimate speed of light (γ = c). Having a standard, outside any fields, electron speed$W_e = \alpha * c$, emitting a standard photon outside any fields $V(\gamma) = c$, we have a constant $\alpha = \frac{W_e}{c} = \cos\varphi_Y = \frac{1}{137.036}$. An orbital electron, with an angle of parallelism to the $(\varphi(Y-) = 89{,}6^0)$ "straight " trajectory $(Y-)$ of the field in Lobachevsky geometry, with its uncertainty principle, such an electron does not emit a photon, as in rectilinear, without acceleration, motion. <u>**This postulate of Bohr, as well as the uncertainty principle of space-time and the equivalence principle of Einstein**</u> $(X+ = Y-)$<u>**, are axioms of dynamic space-matter.**</u> The dynamics of mass fields within the limits of $\cos\varphi_Y = \alpha$, $\cos\varphi_X = \sqrt{G}$, interaction constants, gives the charge isopotential of their unit masses.

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

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

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

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

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

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

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

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

$(Y\pm = \mathrm{e}^-) = (\boldsymbol{X}+= \nu_e^-)(Y-= \gamma^+)(\boldsymbol{X}+= \nu_e^-)$ electron, where NOL $(Y \pm)$= KE (Y +) KE(Y -), and (X$\pm$= $p^+) = (\boldsymbol{Y}-= \gamma_0^+)(\boldsymbol{X}+= \nu_e^-)(\boldsymbol{Y}-= \gamma_0^+)$a proton, where NOL $(X \pm)$= KE(X +)KE(X -),

We separate $(Y+ = X-)$electromagnetic 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 $2(m_{\gamma_0^+})c^2 = G\hbar(\nu_{\gamma_0^+})$.

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

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

with the mass of an indivisible electron:

$$(Y\pm= e) = (X-= \nu_e)(Y+= \gamma)(X-= \nu_e) = \left(\frac{2\nu_e}{\alpha^2} + \frac{\gamma*\alpha}{2G}\right) = \left(\frac{2*1{,}36*10^{-5}}{(1/137.036)^2} + \frac{9{,}1*10^{-9}/137.036}{2*6{,}67*10^{-8}}\right) = 0{,}511\ MeV$$

and similarly the mass of an indivisible proton:

$$(X\pm= p) = (Y-= \gamma_o)(X+= \nu_e)(Y-= \gamma_o) = \left(\frac{2\gamma_o}{G} - \frac{\nu_e}{\alpha^2}\right) = \left(\frac{2*3{,}13*10^{-5}}{6{,}67*10^{-8}} - \frac{1{,}36*10^{-5}}{(1/137.036)^2}\right) = 938{,}275\ MeV$$

Such coincidences also cannot be accidental. Similarly, in the unified fields of space-matter, the Bosons of the electro $(Y+) = (X-)$weak interaction:

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

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

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

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

and also new ones stable particles on colliding beams of muon antineutrinos (ν_μ^-)

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

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

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

These are indivisible quanta of the new substance. On colliding beams of antiprotons (p^-), the following takes place:

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

For counter-propagating particles НОЛ$(Y-) = (X+= p^\pm)(X+= p^\pm)$, the mass of the Higgs boson quantum is calculated:

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

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

and the mass of the tau lepton: $M(X) = (\boldsymbol{Y}-= e^-)(X+= v_t^+)(\boldsymbol{Y}-= e^-) = \frac{(Y-)(Y-)}{(X+)} = \frac{(e=0.511MeV)}{\sqrt{1.24}*\sqrt{G=6.67*10^{-8}}} = 1776.835MeV$

In a single $(Y+ = X -) = 1$, space - matter, Maxwell's equations [1] for the electro (Y+ =X -) magnetic field are derived. Inside the solid angle $\varphi_X(X-) \neq 0$ (Figure .1) of parallelism there is an isotropic stress of the A_n component flow (Smirnov, Course of Higher Mathematics, 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:

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

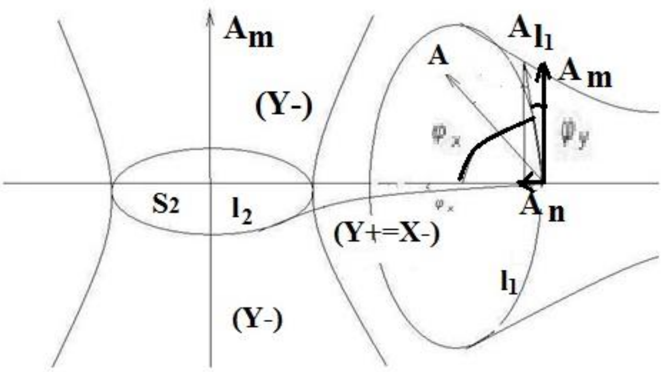

Figure 3. Electro $(Y+= X-)$magnetic and gravity $(X+= Y-)$mass fields.

Inside the solid angle $\varphi_X(X-) \neq 0$ of parallelism the 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.

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

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

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

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

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

the well-known Maxwell equations apply.

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

Induction of a vortex magnetic field $B(X-)$ occurs in an alternating electric $E(Y+)$ field and vice versa. 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 a conductor current, that Oersted discovered when he observed $(X-)$the magnetic field of moving $(Y+)$electrons of a conductor current. 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.

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 $(\text{Y-} = \text{X+})$ 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:

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

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

Such equations correspond to gravity $(X+= Y-)$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 $(Y+= X-)$electromagnetic 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. And here it is appropriate to dwell in more detail on the well-known formula $(E = mc^2)$. A body with a non-zero $(m \neq 0)$mass emits light with energy (L)in a (x_0, y_0, z_0, ct_0)coordinate system, 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.

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

Here ($\frac{\Delta\mathrm{L}}{c^2} = \Delta m$)the factor 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 of $\mathrm{E} = \mathrm{m}_0 c^2$the rest mass, or: $\mathrm{m}_0{}^2 = \frac{\mathrm{E}^2}{c^4} - p^2/c^2$, in relativistic dynamics. Here, a mass with zero momentum ($p = 0$)has energy: $\mathrm{E} = \mathrm{m}_0 c^2$, and a zero mass of a 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, this is not the energy of annihilation, 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 the 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. 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 ($\boldsymbol{m \neq 0}$)does not change)** , including stars in galaxies. Here Einstein went beyond the Euclidean ($\varphi = 0$)axiomatics of space-time. 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.

Such equations of dynamics are presented as 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 $\mathrm{E}'(Y+)$ 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 $rot_x E(Y +) \to B'(X-)$field and mass $rot_y G(X +) \to M'(Y-)$trajectories.

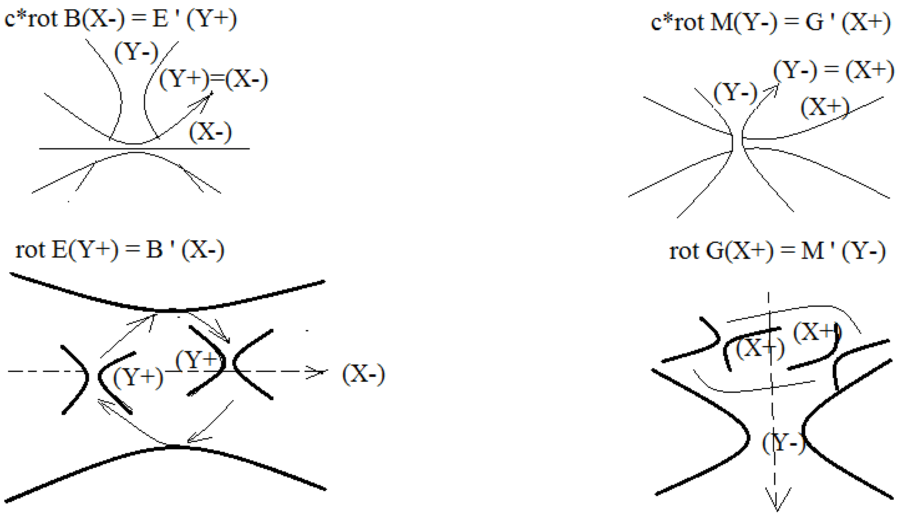

Figure 4. Unified fields of space-matter.

The model of the products of proton and electron annihilation corresponds to such calculations. We have mass fields (Y- = e) = (X+ = p) of the atom.

Figure 5. Models of the products of proton-electron annihilation

The geometric **fact** here is the presence of antimatter in the substance of the proton and electron. At the same time, there are electro $(Y+= X-)$magnetic interaction of an orbital electron and a proton of a nucleus, such as a hydrogen atom, as well as the symmetries of the proton annihilation products $(X\pm= p^{+}) = (\boldsymbol{Y}-= \gamma_0^{+})(\boldsymbol{X}+= \nu_e^{-})(\boldsymbol{Y}-= \gamma_0^{+})$and electron $(Y\pm = e-) = (X- = \nu_e^{-}) + (Y\pm = \gamma^{+}) + (X- = \nu_e^{-})$. There is no exchange photon in the charge attraction of an orbital electron with a (-) charge and a proton of the nucleus with a (+) charge. If the electron emits a photon, then the protons of the nucleus do not emit photons in the charge interaction with orbital electrons. As well as many orbital electrons with a (-) charge do not repel each other in orbits, although in theory they should be attracted to the (+) charges of the protons of the nucleus. This is a contradiction of such a model. As is known, the (+) charge of a proton is formed by quarks, but the same (+) charge of a positron does not have quarks. Such a model of (+) charge is contradictory.

2. Structural forms.

Let us consider the structures of indivisible quanta of dynamic $(\varphi \neq 0) \neq const$space-matter, which cannot be created in the Euclidean axiomatics of space-time as a private $(\varphi = 0)$case. In the models indicated, the atom is "covered" by the mass of $(Y- = e-)$"orbitals" of electrons in the field of the Strong Interaction $(X+ = p^{+})$of the proton. These are quantum fields that transform into Quantum Gravitational Fields. The equations of Quantum Gravitational Fields are derived from the equation of Einstein's General Theory of Relativity. The Einstein equation itself. In its full form, is derived as a mathematical truth in dynamic space-matter.

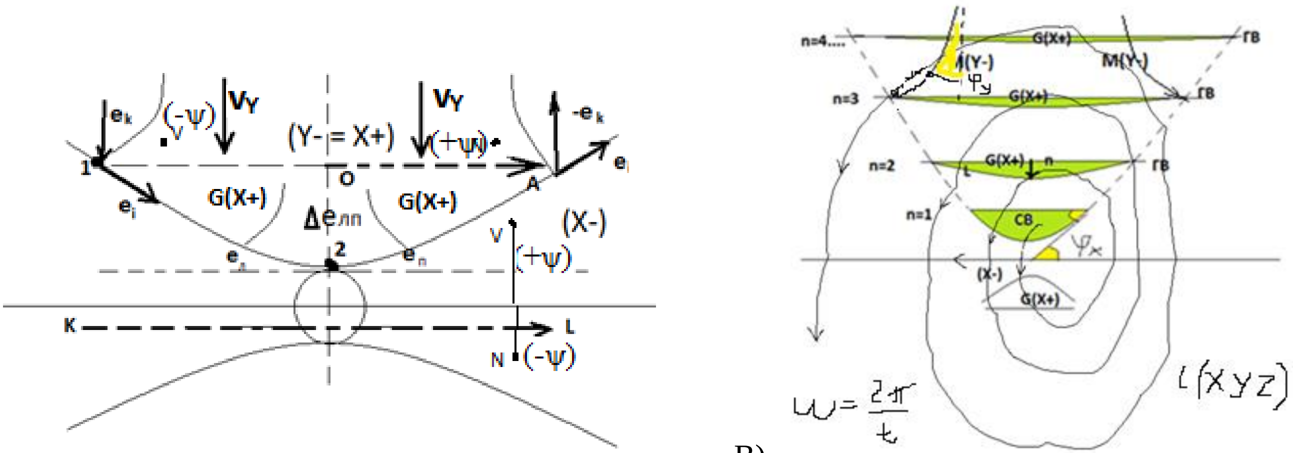

Figure 6. Strong and Gravitational Interaction

Figure 6A. The elements of the quantum gravitational (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 the conditions , $e_i(X-)$, $e_k(Y-)$the fundamental tensor $g_{ik}(x^n) = e_i(x^n)e_k(x^n)$, Riemannian space in $(x^n)$the coordinate system. The physical property of the gravity (X+ = Y-) mass field is the principle of equivalence of inertial and gravitational mass. This is the equality of the acceleration of $a = v_Y * M(Y-)$mass trajectories and the acceleration $g = G(X+)$of the gravitational field, $v_Y * M(Y-) = a = g = G(X+)$, in the space of velocities $e_i(X-) = e_i(x^n = X,Y,Z) = v_X\left[\frac{K}{T}\right]$ 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 zero. Point (2) is reduced to the Euclidean space of the sphere $(x^s_{2=п})$, where $(e_{\boldsymbol{i}} \perp e_{\boldsymbol{k}})$, $(e_{\boldsymbol{i}} * e_{\boldsymbol{k}} = 0)$. Therefore, in the neighborhood of point (2) we select parallel vectors $(e_л)$ and $(e_п)$ and take the average value $\Delta e_{лп} = e_2 = \frac{1}{2}(e_л + e_п)$. Taking $(e_2 = e_к)$and $(g_{ik}(1) - g_{ik}(2) \neq 0) = \frac{K^2}{T^2}$.

$\Delta e_{лп} = \frac{1}{2}(e_л + e_к) = \frac{1}{2}e_к(\frac{e_л}{e_к} + 1)$, we get: $g_{ik}(1)(X+) - g_{ik}(2)(X+) = kT_{ik}(Y-)$, or

$$g_{ik}(1) - \frac{1}{2}(e_{\boldsymbol{i}}e_{\boldsymbol{2}} = e_{\boldsymbol{i}}e_{\boldsymbol{k}} = g_{ik})\left(\frac{e_л}{e_к} + 1\right)(2) = kT_{ik}\,, \left(\frac{e_л}{e_к} = R\right).\ (e_л \neq e_к),\quad g_{ik}(x^s_{2=п=k})$$

For$(e_л = e_к)$ we have $(T_{ik} = 0)$. In 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$(e_л \neq e_2 \neq e_п = const)$ points $(e_п = \boldsymbol{\lambda}e_2)$. For dynamic $(\partial e_п/\partial t \neq 0)$,

$(\varphi \neq const)$ 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.

Einstein's General Theory of Relativity in its full form:

$$R_{ik} - \frac{1}{2} R g_{ik} - \frac{1}{2} \lambda g_{ik} = k\mathrm{T}_{ik}, \qquad \left(k = \frac{8\pi G}{c^4}\right)$$

The misconception of Einstein's General Theory of Relativity is that the energy-momentum tensor in the equation does not contain mass. Mass is zero $(M = 0)$, $(\mathrm{m_0}^2 = \frac{\mathrm{E}^2}{c^4} - \frac{p^2}{c^2} = 0)$, 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 Einstein's General Theory of Relativity, in the unified Criteria of Evolution, Newton's formula (law) is "embedded":

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

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

As we see, in the equation of Einstein's General Theory of Relativity, the force of gravity 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.

I must say that everything. The criteria for the evolution of dynamic space-matter are formed in the space of velocities of multidimensional space-time.

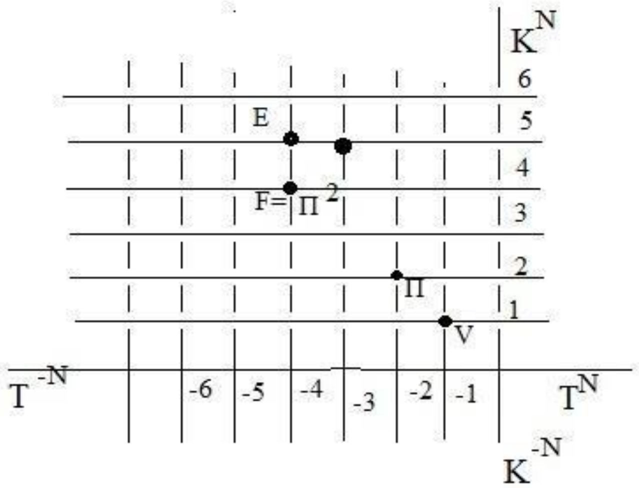

Figure 7. Criteria of Evolution in space-time.

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 gravit (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 $E = \Pi^2 K$, momentum $(p = \Pi^2 T)$, action $(\hbar = \Pi^2 KT)$, etc., of a single: NOL = (X + = Y -) (Y + = X -) = 1 space- matter. Every equation is reduced to these Criteria of Evolution 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, Einstein's energy $E = mc^2$, and Planck's energy $E = \hbar\nu$, have a direct relationship through mass and frequency, in the form: $m = \nu^2 V$, and so on. Let's define how this approach works.

Equations of quantum gravity. The average value of the local basis vector of the Riemannian space ($\Delta e_{лп}$), is defined as the uncertainty principle of mass $(Y-)$trajectories, but already for the entire wavelength $KL = \lambda(X +)$of the gravitational field (Figure 6A) . Here there are accelerations $G(X +) = v_Y M(Y-)$ of mass trajectories. This uncertainty in the form of a segment ($2 * 0A = 2r$), as a wave function $2\psi_Y(Y-)r = \lambda(X +)$of the mass $M(Y-)$trajectory of a quantum $(Y\pm)$in a gravitational field $G(X +)$ Interactions. Here $2\psi_Y$, the spin of $(\downarrow\uparrow)$the quantum gravitational field $\lambda(X +)$. The projection of the mass $(Y-)$trajectory of a quantum onto the plane of a circle (πr^2) gives the area of probability $(\psi_Y)^2$of the mass $M(Y-)$trajectory of a quantum ($Y \pm$) falling into the quantum gravitational $G(X +)$field $(Y- =$ X+)of

interaction. In the general case, the points V ; and N (Y -) of mass or V ; N (X-) of 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 view, quantum entanglement is a fact of reality that follows from the axioms of dynamic space-matter. The entropy of quantum entanglement of a set gives the gradient of the potential, but here Einstein's equivalence principle of inertial $v_Y\left[\frac{K}{T}\right]M(Y-)\left[\frac{1}{T}\right] = G(X+)\left[\frac{K}{T^2}\right]$ and gravitational mass is lost.

These are the initial elements of the quantum gravitational $G(X+) = v_Y M(Y-)$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 the Evolution of space-matter in the form of: Speed ; $v_Y\left[\frac{K}{T}\right]$potential $(\Pi = v_Y^2)\left[\frac{К^2}{Т^2}\right]$; acceleration $G(X+)\left[\frac{K}{T^2}\right]$; mass $m = \PiК(Y-= X+)$fields and charge $q = \PiК(X-= Y+)$fields, their densities $\rho\left[\frac{\Pi K}{К^3}\right] = \left[\frac{1}{T^2}\right]$; force $F = \Pi^2$; energy $\boldsymbol{\mathcal{E}} = \Pi^2К$; momentum $\mathrm{P} = \Pi^2Т$; action $\hbar = \Pi^2КТ$and so on.

Let us denote ($\Delta \mathrm{e}_{лп} = 2\psi \mathrm{e}_k$), $\mathrm{T}_{ik} = \left(\frac{\mathcal{E}}{\mathrm{P}}\right)_i \Delta\left(\frac{\mathcal{E}}{\mathrm{P}}\right)_{лп} = \left(\frac{\mathcal{E}}{\mathrm{P}}\right)_i 2\psi\left(\frac{\mathcal{E}}{\mathrm{P}}\right)_к = 2\psi\mathrm{T}_{ik}$, as an energy tensor $(\mathcal{E}-\mathrm{P})$ momentum with a wave function (ψ). From this follows the equation:

$$R_{ik} - \frac{1}{2}R\mathrm{e}_i \Delta \mathrm{e}_{лп} = к\left(\frac{\mathcal{E}}{P}\right)_i \Delta\left(\frac{\mathcal{E}}{P}\right)_{лп} \text{ or}$$

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

This is the equation of the quantum Gravitational potential with the dimension $\left[\frac{К^2}{Т^2}\right]$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 a potential П(X+) gravitational field.

Figure 6 B. 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:

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

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

The relation $G(\mathrm{X}+) = grad_l\Pi(\mathrm{X}+)$is equivalent to $G_{\mathrm{x}} = \frac{\partial G}{\partial x}$; $G_Y = \frac{\partial G}{\partial y}$; $G_z = \frac{\partial G}{\partial z}$; representation. Here the total differential is $G_{\mathrm{x}}dx + G_Y dy + G_z dz = d\Pi$. It has an integrating factor of the family of surfaces $\Pi(\mathrm{M}) = \mathrm{C}_{1,2,3\ldots}$, 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:

$$t_T(G_{\mathrm{x}}dx + G_Y dy + G_z dz) = d\Pi\left[\frac{К^2}{Т^2}\right], \qquad \text{And} \qquad G(\mathrm{X}+) = \frac{1}{t_T}grad_l\Pi(\mathrm{X}+)\left[\frac{K}{Т^2}\right].$$

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:

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

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

This is a fixed in the section, selected direction of the normal $n \perp l$. The addition of all such quantum fields of a set of quanta $rot_X G(\mathrm{X}+)\left[\frac{K}{Т^2}\right]$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 $rot_X G(\mathrm{X}+)\left[\frac{K}{Т^2}\right]$of fields on closed $rot_{\mathrm{X}}M(Y-)$trajectories. Here is a 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 $(cos\varphi(Y-)_{MAX} = \alpha = \frac{1}{137.036})$.

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

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.

How does this work. From the standard equation of Einstein's General Theory of Relativity: $R_{ik} - \frac{1}{2}Rg_{ik} = \frac{8\pi G}{c^4}T_{ik}$, 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: ($R_{ik} = e_i e_k(1) = U_1)\frac{1}{2}Rg_{ik} = e_i e_k(2) = U_2$ 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: $\Delta U = \frac{8\pi G}{(c^4=U^2=F)}(T_{ik} = \frac{(U^2K)^2}{U^2T^2} = \frac{U^2(UK=m)^2}{U^2T^2} = \frac{Mm}{T^2})$, 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.

<u>For $n = 1$,</u> (Figure 6B) the gravitational field $G(X+)\left[\frac{K}{T^2}\right] = \frac{\psi * T}{\Delta t}G * grad_n(Rg_{ik})(X+)\left[\frac{K}{T^2}\right]$of the gravity source is $G(X+)$the field of the $(X+)$Strong Interaction. Quantum dynamics in time Δtwithin the period of dynamics $T$is represented by the relation:

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

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

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

Here $G = 6.67 * 10^{-8}$, $\hbar = \Pi^2\lambda T$, is the flow of quantum energy $\varepsilon = \Pi^2\lambda = \Delta mc^2$of the field of inductive mass $(\Delta m)$of the exchange quantum $(Y- = \frac{p}{n})$of the Strong Interaction, as well as $(Y- = 2n)$nucleons $(p \approx n)$nuclei of atoms.

<u>For $n \neq 1$,</u> (Figure 6B) and $n = 2,3,4 \dots \to \infty$, we obtain the quasipotential $G(X+)$acceleration fields $G(X+)$of the quantum gravitational field, as a source of gravity $G(X+)\frac{\psi}{t_T}G * grad_n\left(\frac{1}{2}Rg_{ik}\right)(X+)$, with the limit $(cos^2\varphi(X-)_{MAX} = G)$- the angle of parallelism of the quantum $G(X+)$field of the Strong Interaction in this case and the period $T = \frac{\lambda}{c}$of quantum dynamics. Quasi-potential $G(X+)$fields of the quantum gravitational field of accelerations, at distances $c * t = r$have the form:

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

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. For example:
For Mercury, at perihelion $r_м = 4,6 * 10^{12}$см, with an average speed of $4,736 * 10^6$см$/c$, there is a centrifugal acceleration of $a_м = \frac{(v_м)^2}{r_м} = \frac{(4,736 * 10^6)^2}{4,6*10^{12}} = 4,876$ 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 $G(X+)$of the gravitational field with $(\psi = 1)$in the form of.

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

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.

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

From the equation of gravitational (X+= Y−)mass fields $rot_y G(X+) = \omega M(Y-)$, it follows

$\frac{\Delta(Y-)}{\sqrt{2}} = \frac{2\pi^r}{T} M(Y-)$, the rotation of Mercury's perihelion in time (T). For $100лет = 6.51 * 10^{14}с$, 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. Such calculations correspond to the facts.

Thus, the fields of the Strong Interaction $(X+ = p^+)$of a proton in a single $(X+ = Y-)$ and dynamic $(\varphi \neq 0) \neq const$space-matter can form $(X+)(X+) = (Y-)$ mass fields of structures. But two protons cannot form a nucleus due to the repulsion of identical "charges". And here the neutron plays a key role. In the models of neutron decay products, the structures of quanta $(X+ = p^+)(X+ = p^+) = (Y- = 2p^+)$ and the Strong Interaction of nucleons of the atomic nucleus $(Y\pm = 2n)$are already admissible $(Y\pm = p/n)$.

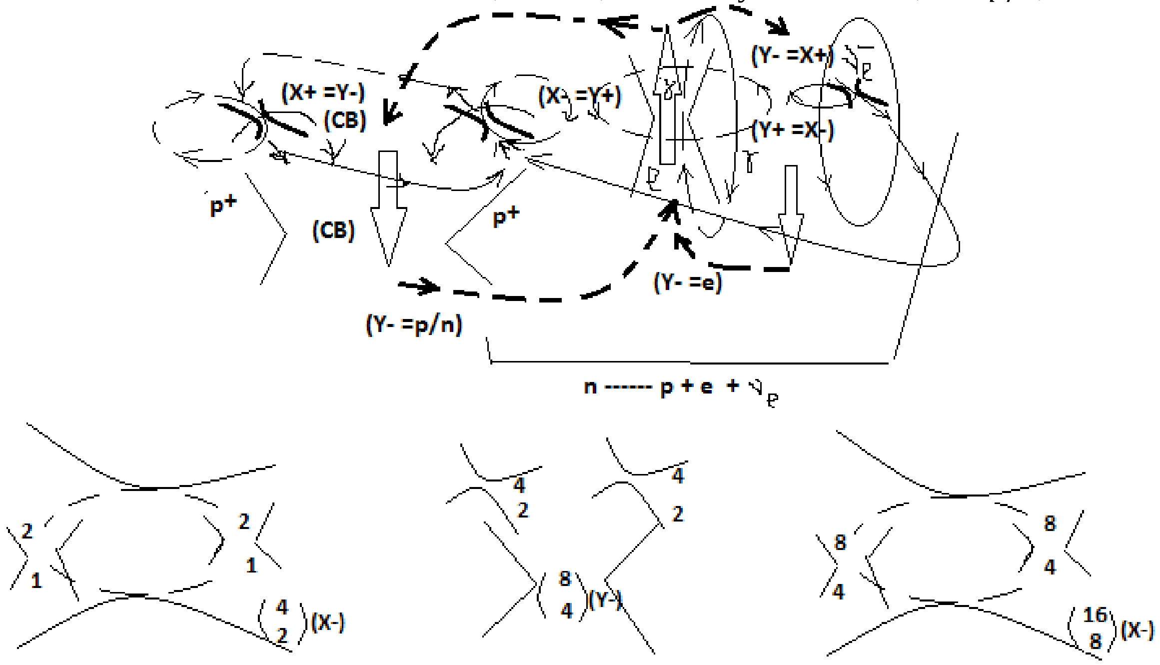

Figure 8. Quanta s $(Y- = p/n)$And$(Y- = 2n)$ Strong Interaction

These charged $(Y- = p/n)$and neutral $(Y- = 2n)$quanta of the Strong Interaction of the nucleons of the nucleus form charged and neutral structures of the nucleus of atoms. In the general case, 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, with a minimum specific binding energy $\left(\alpha * p = \frac{938{,}28}{137} = 6.8\ MeV\right)$. Such boson quanta $(Y- = 2 * \alpha * p \equiv (14 - 17)\ MeV)$, can emit and absorb $(Y- = p/n)$and$(Y- = 2n)$ quanta of the Strong Interaction of nucleons of excited nuclei with the maximum specific binding energy $(8{,}5\ MeV)$of nucleons of excited nuclei of transuranium elements. 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 $(Y\pm = \mathrm{p}/n)$ 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:

$$(X\mp = {}^{12}_{6}X)\,(Y\pm = 2n)(X\mp = {}^{12}_{6}X)(Y\pm = 2n)(X\mp = {}^{12}_{6}X) = (X\pm = {}^{40}_{18}Ar(4n)).$$

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. And here we answer the questions "why is it so?"

3. Permissible structures of leptons.

We talked about potentials $(\varphi(X+) = v^2)$ fields$(X+ = p)$ Strong Interaction as acceleration along the length(K) waves in which mass is formed $(m(X+ = Y-) = v^2K)$. That is, this is an acceleration field, which, like mass, forms quasi-potential gravitational fields, and also accelerations. In the same way, an electric field$(Y+ = e)$ electron has a potential $(\varphi(Y+) = v^2)$in which, at (K)its wavelength, the charge of the electromagnetic field is formed $(q(Y+ = X-) = v^2K)$. $(Y+ = X-)$We speak of the electron:

$(Y\pm = e) = (X- = \nu_e)(Y+= \gamma)(X- = \nu_e) = \left(\frac{2\nu_e}{\alpha^2} + \frac{\gamma*\alpha}{2G}\right) = 0{,}511\ MeV$as a structure of leptons, in the form of products of electron annihilation. Maxwell's equations$(Y+ = X-)$ electromagnetic dynamics and the equations of gravitational dynamics $(X+ = Y-)$mass fields are derived in dynamic space-matter in one mathematical truth.

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

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

Therefore, two electrons $(Y+ = e^-)(Y+ = e^-) -= (X- = 2e^-)$ cannot form a structure in exactly the same way, due to the repulsion of identical "charges". And here a structure similar to a neutron is needed, which would remove the charge of the electron. We have a spectrum of masses of elementary particles.

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.

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

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

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

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

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

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

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

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

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

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

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

Similarly, hadrons

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

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

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

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

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

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

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

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

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

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

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

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

Like a neutron: $(Y\pm= n^0) = (X-= p^+)(Y+= e^-)(X-= \nu_e^-) \ = (T = 878{,}77) \exp\left(\frac{\nu_e}{\sqrt{G}} + \frac{e}{2} - p\sqrt{G}\right) = 938{,}57\ MeV,$ exactly the same way, the structure of leptons in the form of the same symmetry is physically admissible: $(X\pm= e^0) = (Y- = e^-)(X+= \nu_e^+)(Y- = \gamma^+)$. And the physically admissible structure of leptons is similar to the quanta of quanta $(Y\pm = p/n)$and$(Y\pm= 2n)$ Strong Interaction of nucleons of the nucleus in the form: "charged" $(X\pm = e/e^0)$ and "neutral" $(X\pm = 2e^0)$quanta. They don't have a name yet. But they exist:

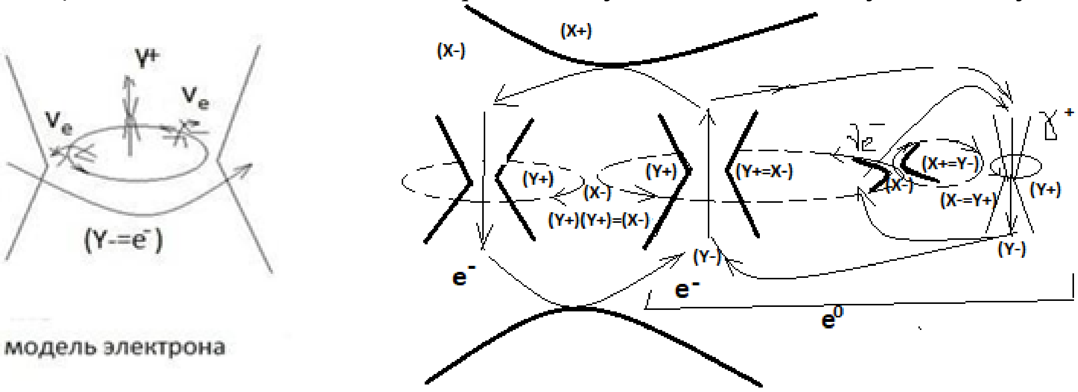

Figure 9. Allowable structures of leptons.

The peculiarity of such structures is that they have photons in their "orbits" $(Y- = \gamma^+)$. It is easy to calculate their wavelength and compare it with the wavelength of optical photons:

$(\alpha * e) = \frac{0{,}511}{137} = 3730\ eV, \quad 1eV = 1.6 * 10^{-12}$эрг, $\lambda = \frac{\hbar c}{E} = \frac{3.1647*10^{-17}}{3730*1.6*10^{-12}} = 5.3 * 10^{-9}$ см. Or 530 nm.

Optical photons, as is known, have: $\lambda = 400 - 700$ нм. In other words, such photons in lepton structures are in the optical range. As we can see, such lepton structures are physically admissible in all mathematical truths and correspond to their calculated characteristics. And in fact, such photons of the optical range are in the orbits of lepton structures. Such "charged" $(X\pm = e/e^0)$ and "neutral" $(X\pm = 2e^0)$quanta can be formed when atoms are irradiated, for example, by a laser. And similarly to the structures of charged and neutral quanta $(Y\pm= p/n)$And$(Y\pm= 2n)$ Strong Interaction of the nucleons of the atomic nucleus, such structures of "charged" $(X\pm = e/e^0)$ and "neutral" $(X\pm = 2e^0)$leptons, can form "lepton nuclei" in the form of bright spots between atoms. These are physically possible possibilities.

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