Structures of stellar matter.

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Abstract .

In this Universe, there is no matter outside of space, and no space without matter. In other words, space-matter are one and the same. This fact is fundamental in the Universe. And precisely because of this, the mathematical properties of space correspond to the physical properties of matter. This is the answer to the question WHY this is so. Mathematics considers many types of spaces. One way or another, they are based on Euclidean axiomatics and a number system. We proceed from the fundamental property of matter: motion. Therefore, here we present a dynamite space-matter, with a non-stationary Euclidean space. And within the framework of dynamic space-matter, the structures of stellar matter are considered.

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

1.Properties of space-matter.

The Euclidean axiomatics itself, which underlies all mathematics, has its own insoluble contradictions. For example,

1. A set of points in a single "partless" point yields another point. Is this a point or a set of points, defined by their elements and their relationships?

2. A set of lines with a single "length without width" again yields a line. Is this a line or a set of lines, defined similarly?

Euclidean axiomatics provides no answers to such questions. While these axioms were generally accepted in BC times, for measuring areas, volumes, and so on, they simply don't work in modern research. This, and many other fundamental contradictions, remain unresolved in theories. For example: In Newton's law $F = \frac{GMm}{(R\to 0)^2} \neq \infty$, where (R) The distance between the centers of the spheres. Neither physics nor mathematics apply here. If a small ball is dropped into the diametrical hole of a large, massive sphere, $(R \to 0)$the force does not increase indefinitely.

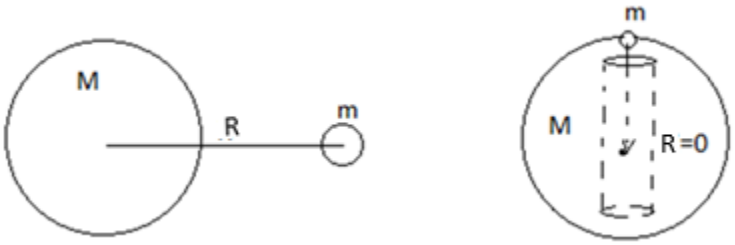


Figure 1. Newton's law

And we have no reason to believe that protons are located in the center of the galactic core . No one knows what kind of substance is there. On the contrary, mathematics suggests the existence of $(R < R_0) = \frac{2GM}{(v_i > c)^2}$superluminal velocity space: $(v_i > c)$inside $(R < R_0)$such "black spheres (R_0)," called "black holes." A photon cannot enter superluminal velocity space. It will orbit around such a (R_0)"black sphere."

The same applies to questions of zeros in division. $\frac{0}{0} = \frac{0=12-12}{0=15-15} = \frac{4(3-3)}{5(3-3)} = \frac{4}{5}$A zero-point physical vacuum can contain anything we don't see. This concerns the mathematical truths of "black holes," it concerns the various energy levels of the physical vacuum into which a photon cannot fall. This is what mathematics says. The main property of matter, motion, is represented by dynamic space-matter, with non-stationary Euclidean space. This follows from the properties of Euclidean axiomatics. Straight lines of dynamic $(\varphi \neq const)$ beam, do not intersect the original line $(AC \to \infty)$at infinity (Figure 1), that is, they are parallel.

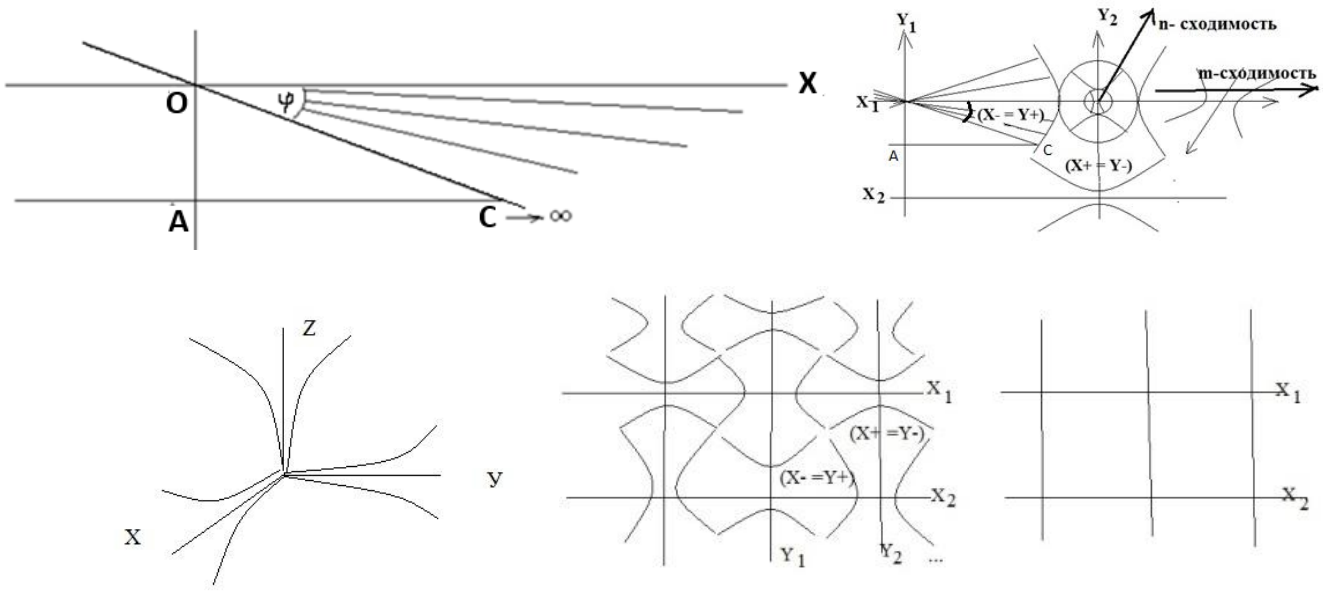


Figure 2. Dynamic space-matter .

This means that when moving along the line AC, there is always a space (X-) that we cannot enter. 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 Domains of Localization $(X\pm)$. $(Y\pm)$ 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 real (X-), along the (X) axis, is the space of a dynamic bundle of straight lines, which we do not see in Euclidean space.

In two-dimensional space, a zero angle of parallelism (φ = 0) for the (X-) and (Y-) lines yields Euclidean straight lines. In the limiting case of a zero angle of parallelism (φ = 0) in each axis, dynamic space-matter transforms into Euclidean space, as a special case of dynamic space-matter. These are profound and fundamental changes in the very technology of theoretical research that shapes our understanding of the world around us. As we can see, in the Euclidean representation of space, we do not see everything.

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

Axioms of dynamic space-matter

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 Y_0-zero 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. The internal $(X-),(Y-)$ and external $(X+),(Y+)$ fields of the 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 $(X- = Y+)$ of $(Y- = X+)$ orthogonal 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-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 Evolution Criteria – 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 to units.

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

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

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

With the fundamental tensor $e_i(x^n) * e_k(x^n) = g_{ik}(x^n)$ and topology $(x^n = X, Y, Z)$ in Euclidean space. That is, Riemannian space is a fixed $(\varphi \neq 0) = const)$ state of dynamic $(\varphi \neq const)$ space-matter. A special case of negative curvature $(K = -\frac{Y^2}{Y_O} = \frac{(+Y)(-Y)}{Y_O})$ (Smirnov, Vol. 1, p. 186) of Riemannian space is the space of Lobachevsky geometry (Mathematical Encyclopedia). (Mathematical Encyclopedia, Vol. 5, p. 439). There are nine distinguishing features of Lobachevsky geometry from Euclidean geometry (Figure 1.2).

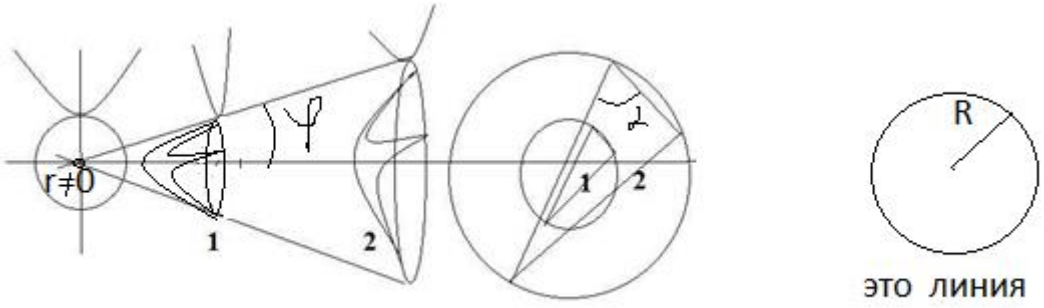


Figure 3 Isotropic dynamics.

One of the characteristics of Lobachevsky geometry is the sum $(0^0 < \sum \alpha < 180^0)$of 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, or equal triangles in the space of Lobachevsky geometry, at equal angles of parallelism $\varphi_1 = \varphi_2$of a pencil of parallel straight lines, yield 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, a Euclidean line, "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 the set of straight lines in the universe. In our case, the Euclidean sphere is also dynamic. These axioms already solve the problems of the Euclidean axiomatics of a set of points at a single point "having no parts" and a set of lines at a single point "length without width."

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

All the Criteria of Evolution of dynamic space-matter are formed in multidimensional (mn) convergences, space-time, as in the multidimensional space of velocities: $W^N = K^{+N} T^{-N}$.

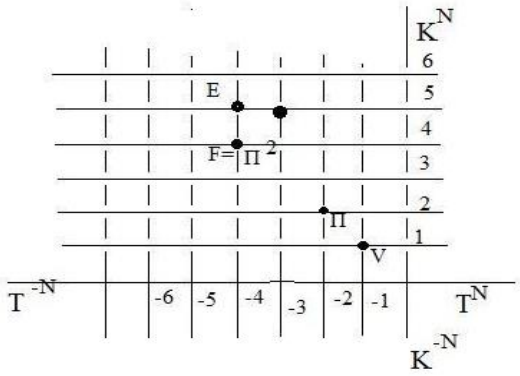


Figure 4. Criteria of Evolution in space-time.

Here for (N=1), $V = K^{+1} T^{-1}$ velocity, $W^2 = П$ potential, $П^2 = F$ force…, 2nd quadrant. Their projection onto coordinate (K) or time (T) space-time gives: charge ПК=q (Y+ =X -) in electro

(Y+ =X -) magnetic fields, or mass PK=m (X+=Y-) in gravitational (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=П ^{2} K, momentum (p =П ^{2} T), action (ħ=П ^{2} KT), etc., of a single space-matter NOL= (X+=Y-) (Y+ =X -) =1. 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, which we do not use yet. All this is discussed in detail in the work: " **Quantum gravity in a unified theory (viXra :2010.0069)** ".

5 Spectrum of indivisible quanta of space-matter.

The indivisible regions of localization of quanta $(X\pm)$ in $(Y\pm)$ dynamic space-matter correspond to stable quanta of space-matter. In both cases, we are talking about **facts** of reality. A 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 $(X - = Y+)$ space-matter $(ОЛ_1)$, they form the first $(X + = Y-)$ region of localization of indivisible quanta at their $m-n$ convergences (Fig.).

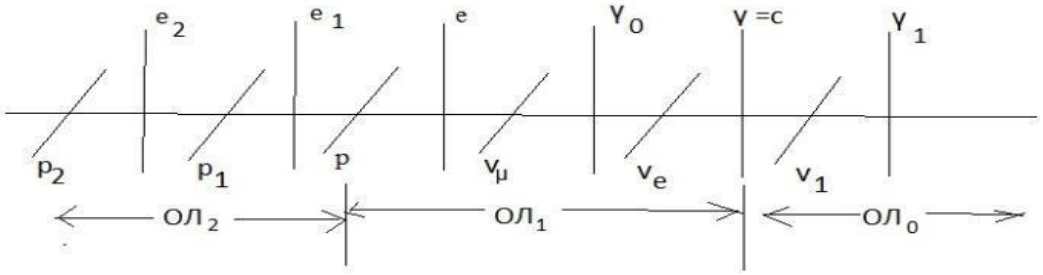


Figure 5. Indivisible quanta of space-matter.

To maintain the continuity of the single $(X - = Y+)$, $(X + = Y-)$ space-matter $(Y\pm = \gamma_0)$, a photon is introduced, analogous $(Y\pm = \gamma)$ to the photon. This corresponds to the analogy of the muon $(X\pm = \nu_\mu)$ and electron $(X\pm = \nu_e)$ neutrinos. Moreover, both neutrinos (ν_μ), (ν_e) and photons (γ_0), (γ), can be accelerated, like a proton or electron, to speeds (γ_1), ($\gamma_{2...}$), according to the same Lorentz transformations. Having a standard, field-free speed of an electron $(W_e = \alpha * c)$ emitting a standard, field-free 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, field-free 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 motion without acceleration. **This postulate of Bohr, as well as the uncertainty principle of space-time and Einstein's equivalence principle, are axioms of dynamic space-matter.** 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.

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

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

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

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

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

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

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

In one $(Y\pm = X\mp)$ 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 the electric and $(Y+ = X-)$magnetic fields from the 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: $\frac{(\boldsymbol{X}+=\nu_e^-/2)(\sqrt{\boldsymbol{2}}*\boldsymbol{G})(\boldsymbol{X}+=\nu_e^-/2)}{(Y-=\gamma^+)} = q_e(Y+)$

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

$(Y+)(Y+) = (X-)$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 random. 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 determined by the frequency(γ_0^+) quanta, with mass $2(m_{\gamma_0^+})c^2 = G\hbar(\nu_{\gamma_0^+})$.

$1\text{г} = 5{,}62 * 10^{26} MeV$, 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:

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

Such coincidences also cannot be accidental.

At the same time , subatoms (ν_μ/γ_0) are held by the gravitational field of the planets, and subatoms (ν_e/γ) are held by the gravitational field of stars. This follows from calculations of the atomic structures (p/e), subatomic particles 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 $p_2^- = \frac{2e_1^-}{G} = 3{,}06 * 10^5 TeV$, and (p_2/n_2), $(p_2 \approx n_2)$the Sun's (star's) nuclei, generate nuclei of "stellar uranium", $(2\alpha p_2^- = 290p_1^+ = {}^{290}U^*)$, with their exothermic decay into a spectrum of "stellar" atoms (p_1^+/e_1^-)in the solid surface of the star (Sun). They do not interact with ordinary atoms (p^+/e^-) hydrogen and the spectrum of atoms. The emission $(p_1^+ \to \nu_\mu^-)$of muon antineutrinos by the Sun, similar to the emission $(e \to \gamma)$ 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, etc.). These are the calculations and physically acceptable possibilities.

In the general properties of space-matter, the Universe disappears into infinity in time, in the depths of the physical vacuum. The density of mass fields $(\rho_i(Y-) \to 0)$tends to zero . The length of such quanta $\lambda_i(Y- = X+) = R_j \to \infty$, in our measurements, $\left(R_j\right) = 6{,}2 * 10^{32} sm$follows from $\left(R_j\right) * (R_i = 1{,}616 * 10^{-33} sm) = 1$. Indeed, the Universe is a single whole, with a common dynamic. This is at the visible levels of the physical vacuum . We do not see the superluminal velocity space in which the nuclei of galaxies are immersed with photons. Nor do we see the galactic nuclei themselves, with superluminal velocities inside a sphere: $(v_\text{i} > c)$, $(R < R_0) = \frac{2GM}{(v_\text{i} > c)^2}$, called a "black hole."

If mass density $(\rho_i(Y-) \to 0)$is in the infinite $\lambda_i(Y- = X+) = R_j \to \infty$depths of the physical vacuum, then the density of space $\rho_i(X-) = \frac{1}{(T_i \to 0)^2} \to \infty$increases. This is like the "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 unified $(X\pm = Y\mp)$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, just as the universe vanishes in time at $\lambda_i(Y- = X+) = R_j \to \infty$infinite radii. These are mathematical truths. Based on this, in the spectrum of indivisible quanta of space-matter, the neutrino space density is higher than $\rho_i(X- = \nu_e^-)$the proton space density $\rho_{i-1}(\text{X}- = p^+)$. Neutrinos pass through the proton freely. We discussed the calculation of the mass spectrum . Let us cite some of them.

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

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

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

Unstable particles already in accordance with the products and decay time. $G\alpha = 4.8673 * 10^{-10}$

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

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

These calculations correspond to the model of the products of proton-electron annihilation. The mass fields (Y- = e) = (X+ = p) of the atom.

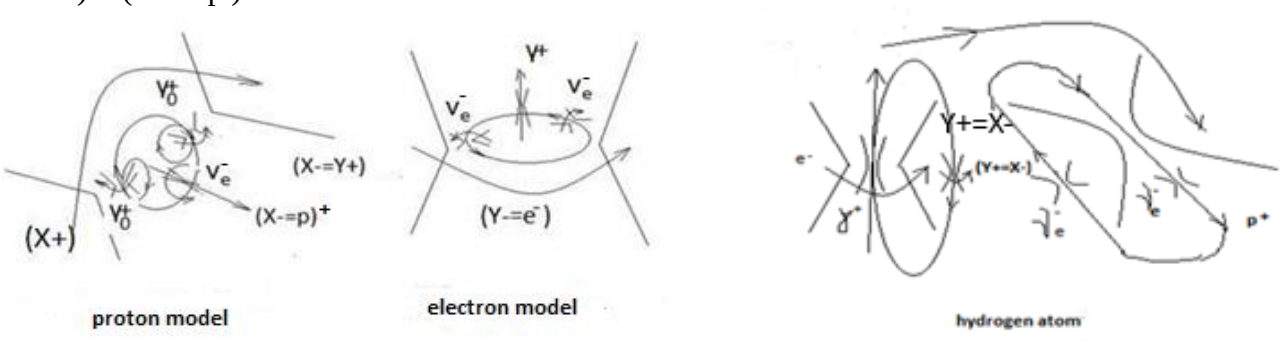


Figure 6. Model of the products of proton-electron annihilation

In the proton model, a denser neutrino pierces the less dense space-matter of the proton. But $(X+= \nu_e)$ or $(X+= \nu_\mu)$ neutrino fields interact with the $(X+= \nu_e)$neutrino field of an electron in an electro $(Y\pm= X\mp)$ weak interaction. And also the space-matter of the neutron, in the quantum of the Strong Interaction of the atomic nucleus.

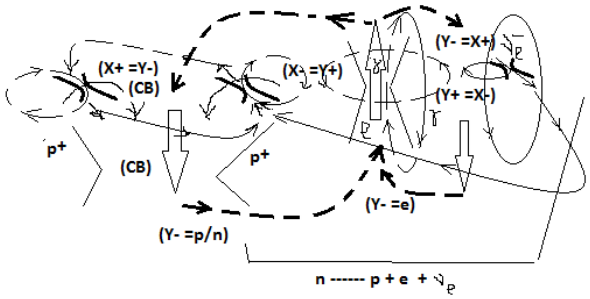


Figure 7. Model of a proton and a neutron in a quantum $(Y- = p/n)$ Strong Interaction

In this model, we will clarify some of the subtleties of the neutron structure.

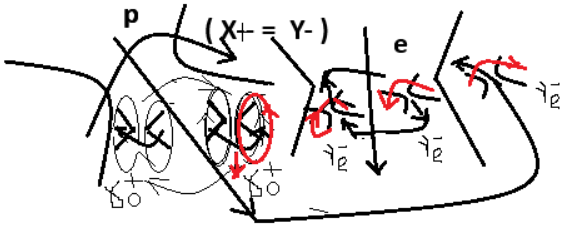


Figure 8: Model of neutron decay products

As we can see, all flows of mass and charge fields coincide in accordance with the equations. Maxwell's equations for electromagnetic fields

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

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

And exactly such equations for gravitational-mass fields, in strict mathematical truth.

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

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

Returning to the scale of indivisible quanta

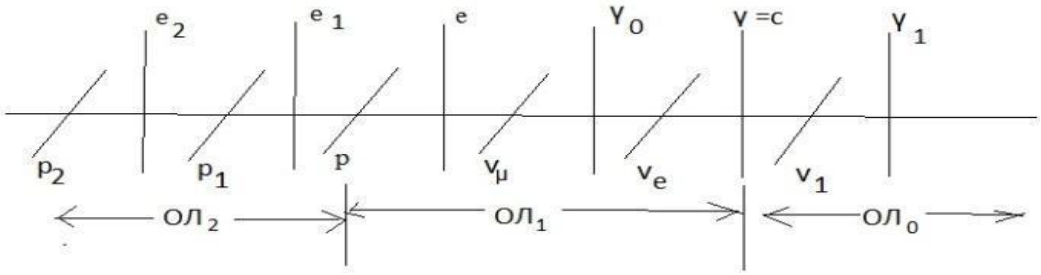


Figure 9. Scale of indivisible quanta

We can speak with precision . Thus, the proton forms the structures of the neutron, the quanta of the Strong Interaction of the nucleus, and an ordinary atom on Earth . The protons themselves are generated by the quanta of the planet's core: $(2\alpha p_1^- = 238p^+ = {}^{238}_{92}U)$in the form of a uranium nucleus, with subsequent decay into a spectrum of atoms . Similarly, the quanta of the stellar core $p_2^- = \frac{2e_1^-}{G} = 3{,}06 * 10^5 TeV,$ and the Sun (p_2/n_2)'s core generate the nuclei of "stellar uranium," $(2\alpha p_2^- = 290p_1^+ = {}^{290}U^*)$with their exothermic decay into a spectrum of "stellar" atoms (p_1^+/e_1^-)in the solid surface of the star. The quanta of the stellar core $(p_2^- \rightarrow p^+)$themselves$(p_2 \approx n_2)$ emit ordinary protons as hydrogen nuclei together with$(e_2^+ \rightarrow e^-)$ electrons . It turns out that the core of the star generates nuclei $(2\alpha p_2^- = 290p_1^+ = {}^{290}U^*)$of atoms $(p_1^+/e_1^-)$of the solid surface of the star and emits nuclei$(p_2^- \rightarrow p^+)$ hydrogen, p^+/e^-like the atmosphere of a star . The equations for the interaction fields are the same . High temperatures for terrestrial atoms are quite acceptable for atoms of stellar matter.

How to check? In such a model of interactions, a "heavy proton" of stellar matter in a solid surface should emit$(p_1^+ \rightarrow \nu_\mu^-)$ Muon neutrino. The flux of such muon neutrinos can be detected from the Sun in electroweak interactions of the Earth's electrons in an atom . The second point is similar to the structure of the proton: $(\mathrm{X}\pm= p^+) = (Y-= \gamma_o)(X+= \nu_e^-)(Y-= \gamma_o)$with an electron antineutrino, during the formation of a muon in the atmosphere,$(Y\pm= \mu^-) = (X-= \nu_\mu)(Y+= e^+)(X-= \nu_e)$ as a substance, when it decays, a positron is necessarily produced (e^+), which can be fixed.

Further, we can hope that over billions of years, atomic and molecular structures may emerge on the Sun, reproducing into living forms. This is physically permissible under unified laws . This could be life forms of a different level, including structures of neutrinos and photons in the form of subatomic particles . Moreover, subatomic particles (ν_μ/γ_0) are held by the gravitational field of the planets, and subatoms (ν_e/γ) are held by the gravitational field of the stars . Planets НОЛ $= e_1 * 3{,}13 * \gamma_0 = 1$and stars hold them: НОЛ $= e_2 * 3{,}13 * \gamma = 1.$