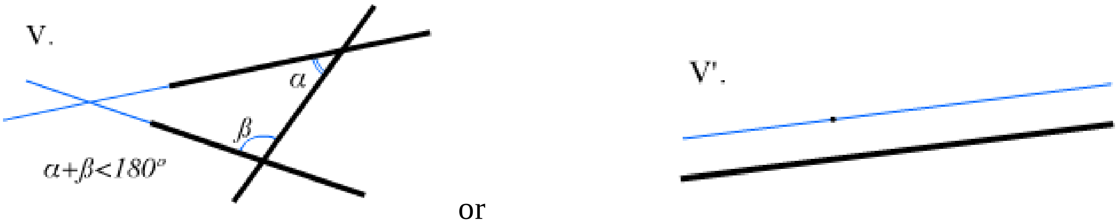
Space-matter of the Universe https://vixra.org/abs/2302.0022

Abstract: Calculated parameters and characteristics of objects of the Universe are presented in dynamic space-matter. A model of an intergalactic apparatus is presented.

Content

1. Introduction

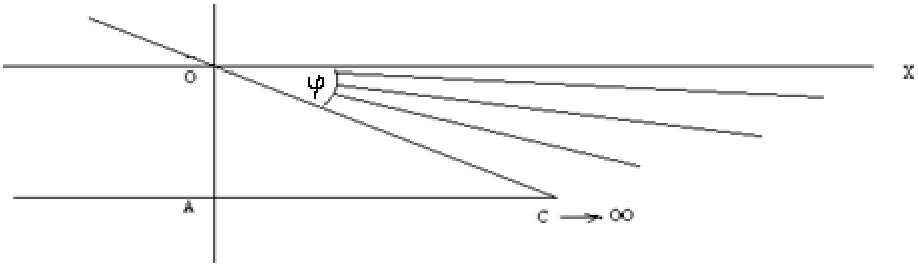
All theories about the Universe are presented within the framework of Euclidean definitions and postulates.
1. “A point is that, part of which is nothing”) (“Beginnings” of Euclid). or a point is that which has no parts,
2. Line - length without width, and the 5th postulate about parallels that do not intersect.
5. If a line intersecting two lines forms interior one-sided angles less than two lines, then, extended indefinitely, these two lines will meet on the side where the angles are less than two lines.



or

Figure 1 Euclidean axiomatic

That is, through a point outside a line, only one line can be drawn parallel to the line. In the "Unified Theory 2" there are contradictions that are unresolvable in the Euclidean axiomatic. That is, many lines in one line (length without width), again a line. Is it a line or multiple lines? Similarly, the set of points in one point is again a point. Is it a point or multiple points? The Euclidean Elements do not provide answers to such questions. The problems of the 5th postulate are also well known.



There are real facts of the dynamic space of a bunch of straight lines that do not intersect, that is, parallel to the original line AC at infinity, presented in the "Unified Theory 2". And moving along the line (AC), there will be a dynamic space nearby, which we will not be able to get into.

Infinity cannot be stopped, so this already dynamic space always exists. And already the properties of this dynamic $(\varphi \neq const)$space are presented as the properties of matter, the main property of which is movement. There is no matter outside such space, and there is no space without matter. Space-matter is one and the same.

In such a dynamic space-matter, Euclidean axiomatics is presented as a special case of zero $(\varphi = 0)$angle of parallelism. At the same time, the problem of a multitude of exactly straight lines in one straight parallel line is solved, as “length without width”.

The main property of a dynamic space-matter is a dynamic $(\varphi \neq const)$ angle of parallelism. In this case, the Euclidean space in the XYZ axes loses its meaning.

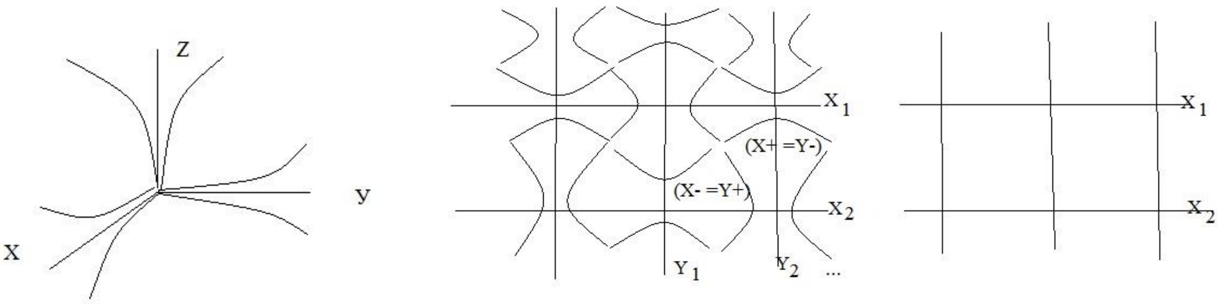


Fig.3 dynamic space-matter

Within the grid of Euclidean $(\varphi = 0)$ axes, we do not see dynamic$(X{+}{=}\,Y{-})$, $(X{-}{=}\,Y{+})$ space-matter, and we cannot imagine it. Therefore, the axioms of dynamic space-matter are introduced as facts that do not require proof. Already in these axioms the problem of the Euclidean axiomatic of a point is solved, as a set of indivisible points-spheres, in one indivisible point-sphere, but already on (n) convergence, dynamic space-matter.

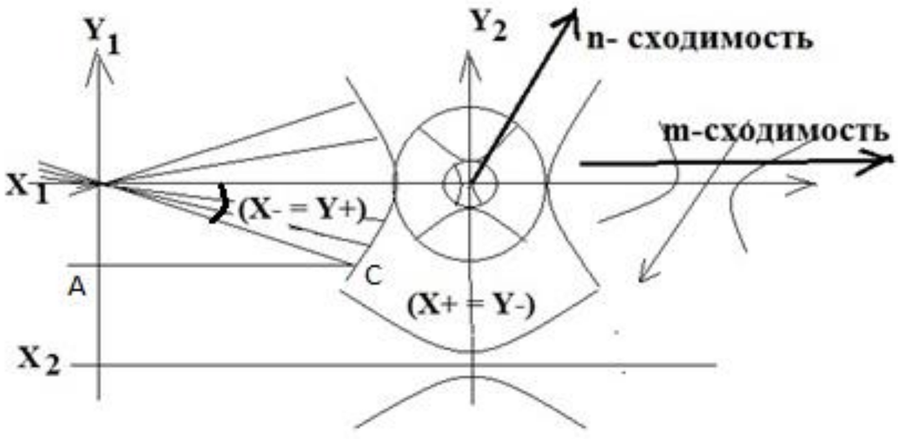


fig.3a - dynamic space-matter

Any fixation (in experiments) of a non-zero $(\varphi \neq 0)$ angle of parallelism gives a multi-sheeted Riemannian space. Now, within the framework of the axioms of dynamic space-matter in the form:

1. Non-zero, dynamic angle of parallelism, of a beam of parallel lines, determines orthogonal fields $(X-) \perp (Y-)$ of parallel lines - trajectories, as isotope characteristics of space-matter.

2. Zero angle of parallelism$(\varphi = 0)$, gives «length without width» with zero or non-zero (Y_0) - radius of sphere-point «That does not have parts» in Euclid $(\varphi \neq 0) \neq const$ e an axiomatic.

3. A beam of parallel lines with zero angle of parallelism$(\varphi = 0)$, «equally located to all its points», gives variety of straight lines in one «without width» Euclidean straight line.

4. Inside $(X -), (Y-)$ and outside $(X +), (Y+)$ fields of lines-trajectories non-zero$(X_0 \neq 0)$ or $(Y_0 \neq 0)$ of physical sphere-point, form Undivided Region of Localization $НОЛ(X \pm)$ or $НОЛ(Y \pm)$of dynamic space-matter.

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

6. Sequence of Undivided Regions of Localization $НОЛ(X \pm), (Y \pm), (X \pm)\dots$ on radius $X_0 \neq 0$ or $(Y_0 \neq 0)$ of sphere-point on one line-trajectory gives (n) convergence, and on different trajectories (m) convergence.

7. To each Undivided Region of Localization НОЛ of space-matter corresponds the unit of all its Criterion of Evolution (КЭ), in single $(X -= Y+)$, $(Y -= X+)$ space-matter on $(m - n)$convergences,
$НОЛ = КЭ(X -= Y +)КЭ(Y -= X +) = 1$, $НОЛ = КЭ(m)КЭ(n) = 1$,
In the system of numbers that are equal by analogy of numbers 1.

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

Any point of fixed lines-trajectories is presented by local basic vectors Rimanov's space:

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

With 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, Rimanov's space is fixed $(\varphi \neq 0) = const$) state of dynamic $(\varphi \neq const)$ space-matter. Particular case of negative curvature $\left(K = -\frac{Y^2}{Y_0} = \frac{(+Y)(-Y)}{Y_0}\right)$ (Smirnov b.1, p.186) Rimanov's space is space of Lobachevski's geometry (Math encyclopedia b.5, p.439).

These axioms already solve the problems of the Euclidean axiomatic of a set of points at one point "without parts" and a set of lines in one "length without width" of a line. Space-time is a particular case of a fixed $(\varphi \neq 0) = const$) state of dynamic $(\varphi \neq const)$ space-matter. At the same time, all the Criteria of the Evolution of matter are formed in the multidimensional $W^N = K^{+N}T^{-N}$ space-time. They are presented in the "Unified Theory 2" in the form: $(\Pi = W^2)$ - potential, $(F = \Pi^2)$ - force....

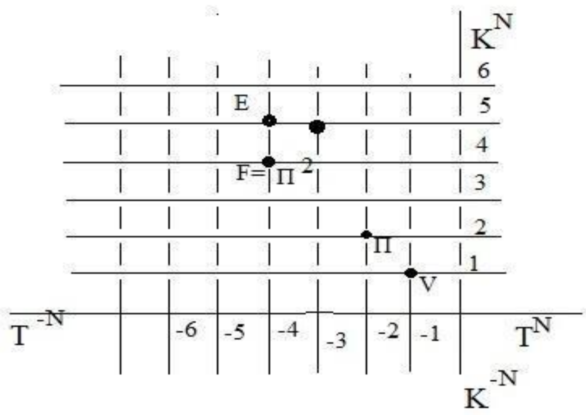


Fig.4 uniform Criteria of Evolution of space-matter.

In physical theories, we are talking about electro $(Y+=X-)$magnetic fields of charge: $q(Y+=X-)=ПK$, and gravite $(G+=Y-)$ mass fields with mass: $m(G+=Y-)=ПK$, and the corresponding equations of dynamics (which are derived) as mathematical truths. These are Maxwell's equations

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

and equations of dynamics of gravitational-mass fields.

Indivisible Areas of Localization, $(X\pm)$ and $(Y\pm)$, as facts of reality, we correlate with indivisible quanta $(X\pm=p)$ of a proton, $(Y\pm=e)$of an electron, $(X\pm=\nu_\mu)$, $(Y\pm=\gamma_0)$, $(X\pm=\nu_e)$, $(Y\pm=\gamma=c)$ photon. These quanta form the first Localization Area $(ОЛ_1)$. And like Cartesian, spherical, cylindrical, any other coordinate system in Euclidean axiomatic, it is already possible to represent the quantum coordinate system on (m) and (n) convergences, indivisible quanta of space-matter, in full.

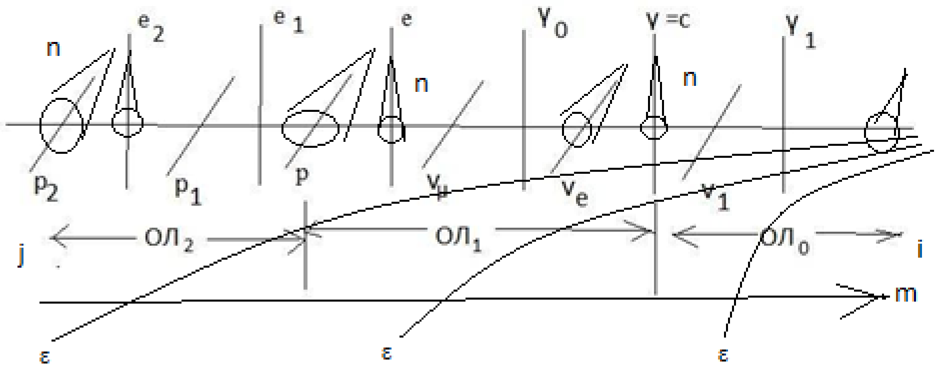


Fig.5 quantum coordinate system

Already in such a quantum coordinate system, one can consider the properties of the space-matter of the Universe, visible and invisible for photons and neutrinos of the $(ОЛ_1)$ level.

2. Properties of space-matter of the Universe

The visible space of the Universe is represented by a sphere with Euclidean isotropy. In fact, such a Euclidean sphere is expanding, that is, non-stationary. The reason for this non-stationary is considered to be dark energy, in the presence of observable dark masses. Extension conditions are calculated from the conditions of the 2-nd space

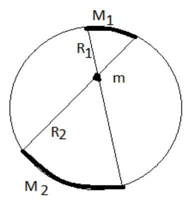


Fig.6. to the conditions of expansion of space-matter

velocity of the masses (M_1) and (M_2), relative to the mass of the observer (m):

$$\frac{mv^2}{2}=\frac{GMm}{R},\quad v^2=\frac{2GM}{R}=П,\quad \text{for}\quad \frac{2GM_1}{R_1^2}=\frac{2GM_2}{R_2^2}\quad \text{or:}\quad \frac{M_1}{M_2}=\frac{R_1^2}{R_2^2},\ R^2\sim(M=\rho V).$$

As a result of transformations: $v^2=\frac{2G(\rho V)}{R}=\frac{2G\rho 4\pi R^3}{3R}=\frac{8\pi G\rho R^3}{3R}$, or: $(\frac{v}{R}=H)^2=\frac{8\pi G\rho}{3}$, we get:

$\rho_к = \frac{3H^2}{8\pi G} \approx 10^{-29} \left[\frac{г}{см^3}\right]$, critical density of irreversible expansion. (H) is the Hubble constant.

We are talking about the visible expansion, fixed $(Y \pm = \gamma = c)$ by photons $(ОЛ_1)$ of the level of indivisible quanta of space-matter $(p,\ e, \nu_\mu,\ \gamma_{0,}\ \nu_e, \gamma)$ in the quantum system coordinates. Now let's represent the indivisible quanta of space-matter, in the form $ОЛ_{ji}(m)$ of their (m) convergence.

$$ОЛ_j \ldots ОЛ_3 \ldots (p_3\ e_3\ p_2\, e_2\, p_1\, e_1\ = ОЛ_2)(p, e, \nu_\mu,\ \gamma_{0,}\, \nu_e, \gamma = ОЛ_1)(\nu_1\gamma_1\, \nu_2\gamma_2\, \nu_3\gamma_3\ = ОЛ_0) \ldots ОЛ_{-1} ОЛ_{-2} \ldots ОЛ_i$$

In this case, the electron speed $(ОЛ_1)$ level: $\left(w = \left(\alpha = \frac{1}{137}\right) * c\right.$, or $\left(w = \alpha^{(N=1)} * c\right.$. Einstein's Theory of Relativity and quantum relativistic dynamics, allow superluminal speeds in space-time.

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

Here $(\uparrow a_{11} \downarrow)(\downarrow a_{22} \uparrow) = 1$ are the cosines of the angles of parallelism in the form: $\cos(\varphi_X) * \cos(\varphi_Y) = 1$. Then the sub photon velocities $(\gamma_i\,)$ of the physical vacuum are equal to: $(w_i = \alpha^{(-N=-1,-2\ldots)} * c)$ superluminal velocities in $(ОЛ_i)$ levels of the physical vacuum. Similarly, the space of velocities in $(ОЛ_j)$ levels in the form: $(w_j = \alpha^{(+N=1,2,3\ldots)} * c)$ provided that $(w_j * w_i = \alpha^{+N}c * \alpha^{+N}c = П = c^2)$ potentials in Einstein's postulates for the $(ОЛ_1)$ level. In the same potentials, the mass spectrum of indivisible quanta of the entire quantum coordinate system $ОЛ_{ji}(m)$ at (m) convergence is calculated, similarly to the calculations of the masses $(ОЛ_1)$ level:

$$m(X+= Y -) = ПК,$$

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

$$m = \frac{F=П^2}{X''} = \left[\frac{П^2T^2}{X} = \frac{П}{(X/K^2)}\right] = \frac{ПX=m_X}{\left(\frac{X^2}{K^2}=\frac{\propto^2}{2}\right)}\,, \qquad \text{where} \qquad 2m_X = \propto^2 m_Y\,; \quad \text{and:} \qquad m_X = \propto^2 m_Y/2$$

The full calculation of the mass spectrum in: $ОЛ_j$ and: $ОЛ_i$ _i levels of the physical vacuum, is performed by a simple program in TP7, and looks like.

"heavy": $e_j = 2 * p_{j-2}/\alpha^2$, $p_j = 2 * e_{j-1}/G$,	"sub particles": $\nu_i = \alpha^2 * \gamma_{i-2}/2$, $\gamma_i = G * \nu_{i-1}/2$

program a1;
uses crt;
const a2=1/(137.036*137.036);
G=6.67e-8; n=12;
Var p,p1,p2,e1,e,e2:Real;
i,j,m:Integer;
begin clrscr;
p:=938.28; e:=0.511;
p1:=0.271;
e:=e; p:=p; p1:=p1;
for i:=1 to n do
begin
WriteLn('n=',i);
e1:=2*p1/a2; WriteLn('e1=',e1);
p2:=2*e/G; WriteLn('p=', p2);
e2:=2*p/a2; WriteLn('e2=',e2);
p1:=2*e1/G; WriteLn('p1=',p1);
e:=2*p2/a2;
WriteLn('e=',e);
p:=2*e2/G;
WriteLn('p1=',p);
end ;
ReadLn;
end.
	program a1;
	uses crt;
	const a2=1/(137.036*137.036);
	G=6.67e-8; n=12;
	Var p,p1,p2,e1,e,e2:Real;
	i,j,m:Integer;
	begin clrscr;
	p:=938.28; e:=0.511;
	p1:=0.271;
	e:=e; p:=p; p1:=p1;
	for i:=1 to n do
	begin
	WriteLn('n=',i);
	e1:=G*p/2; WriteLn('e1=',e1);
	p2:=a2*e/2; WriteLn('p=', p2);
	e2:=G*p1/2; WriteLn('e2=',e2);
	p1:=a2*e1/2; WriteLn('p1=',p1);
	e:=G*p2/2;
	WriteLn('e=',e);
	p:=a2*e2/2;
	WriteLn('p1=',p);
	end ;
	ReadLn;
	end.

Each $ОЛ_j$, and $ОЛ_i$ level contains two mass and three charge isopotentials.

Table 1.

	Quanta of the nucleus	$2\alpha * p_j = N * p_{j-1}$	N	$(X\pm) = p^+_J$ (M eV)	$(Y\pm) = e_J$ (M eV)
OL $_{+1\,1}$				$p^+_{27} = 2e_{26}/G$ p^+_{27} =2.7 E111 M eV	$e_{27} = 2\,p_{25}/\alpha^2$ e_{27} = 1.48 E108 MeV
	○ Exaquasar	$2\alpha * p^-_{26} = 290 p^+_{25}$	14	$p^-_{26} = 2e_{25}/G$ p^-_{26} = 7.9 E107 MeV	$e_{26} = 2\,p_{24}/\alpha^2$ e_{26} = 9.1 E103 MeV
		$2\alpha * p^-_{25} = 238 p^+_{24}$		$p^-_{25} = 2e_{24}/G$	$e_{25} = 2\,p_{23}/\alpha^2$

				$p^-_{25} = 3.96$ E103 MeV	$e_{25} = 2.6$ E100 MeV
OL $_{+10}$	Superquasar . ● Galact . 1st kind	$2\alpha * p^+_{24} = 25 p^-_{23}$	13	$p^+_{24} = 2e_{23} / G$ $p^+_{24} = 2.4$ E99 MeV	$e_{24} = 2\ p_{22} / \alpha^2$ $e_{24} = 1.32$ E96 MeV
	black spheres	$2\alpha * p^+_{23} = 290 p^-_{22}$		$p^+_{23} = 2e_{22} / G$ $p^+_{23} = 7.04$ E95 MeV	$e_{23} = 2\ p_{21} / \alpha^2$ $e_{23} = 8.1$ E91 M eV
	○ superquasar 1st kind	$2\alpha * p^-_{22} = 238 p^+_{21}$	12	$p^-_{22} = 2e_{21} / G$ $p^-_{22} = 3.5$ E91 MeV	$e_{22} = 2\ p_{20} / \alpha^2$ $e_{22} = 2.35$ E88 MeV
OL $_{+8}$		$2\alpha * p^-_{21} = 25 p^+_{20}$		$p^-_{21} = 2e_{20} / G$ $p^-_{21} = 2 , 16$ E87 M eV	$e_{21} = 2\ p_{19} / \alpha^2$ $e_{21} = 1 , 17$ E84 M eV
	●● Superquasar . Galact . 2 kinds	$2\alpha * p^+_{20} = 290 p^-_{19}$	11	$p^+_{20} = 2e_{19} / G$ $p^+_{20} = 6 , 25$ E83 M eV	$e_{20} = 2\ p_{18} / \alpha^2$ $e_{20} = 7 , 2$ E79 M eV
	black spheres	$2\alpha * p^+_{19} = 238 p^-_{18}$		$p^+_{19} = 2e_{18} / G$ $p^+_{19} = 3 , 13$ E79 M eV	$e_{19} = 2\ p_{17} / \alpha^2$ $e_{19} = 2 , 08$ E76 M eV
OL $_{+7}$	○○ superquasars 2 genera	$2\alpha * p^-_{18} = 25 p^+_{17}$	10	$p^-_{18} = 2e_{17} / G$ $p^-_{18} = 1 , 9$ E75 M eV	$e_{18} = 2\ p_{16} / \alpha^2$ $e_{18} = 1 , 04$ E72 M eV
		$2\alpha * p^-_{17} = 290 p^+_{16}$		$p^-_{17} = 2e_{16} / G$ $p^-_{17} = 5 , 55$ E71 M eV	$e_{17} = 2\ p_{15} / \alpha^2$ $e_{17} = 6 , 38$ E 6 7 MeV
	● megastar galaxies	$2\alpha * p^+_{16} = 238 p^-_{15}$	9	$p^+_{16} = 2e_{15} / G$ $p^+_{16} = 2 , 77$ E 6 7 MeV	$e_{16} = 2\ p_{14} / \alpha^2$ $e_{16} = 1, 85$ E 6 4 MeV
OL $_{+6}$	black spheres	$2\alpha * p^+_{15} = 25 p^-_{14}$		$p^+_{15} = 2e_{14} / G$ $p^+_{15} = 1 ,7$ E 6 3 MeV	$e_{15} = 2\ p_{13} / \alpha^2$ $e_{15} = 9.26$ E 59 MeV
	○ megastars	$2\alpha * p^-_{14} = 291 p^+_{13}$	8	$p^-_{14} = 2e_{13} / G$ $p^-_{14} = 4.93$ E 59 MeV	$e_{14} = 2\ p_{12} / \alpha^2$ $e_{14} = 5.67$ E 55 MeV
	Superplanets	$2\alpha * p^-_{13} = 238 p^+_{12}$		$p^-_{13} = 2e_{12} / G$ $p^-_{13} = 2.46$ E 55 MeV	$e_{13} = 2\ p_{11} / \alpha^2$ $e_{13} = 1.64$ E 52 MeV
OL $_{+5}$	● quasar galaxies of the 1st type	$2\alpha * p^+_{12} = 25 p^-_{11}$	7	$p^+_{12} = 2e_{11} / G$ $p^+_{12} = 1 , 12$ E 51 MeV	$e_{12} = 2\ p_{10} / \alpha^2$ $e_{12} = 8 , 2 2$ E 47 MeV
	black spheres	$2\alpha * p^+_{11} = 290 p^-_{10}$		$p^+_{11} = 2e_{10} / G$ $p^+_{11} = 4 ,4$ E 47 MeV	$e_{11} = 2\ p_{9} / \alpha^2$ $e_{11} = 5 , 03$ E 43 MeV
	○ quasars 1st kind	$2\alpha * p^-_{10} = 238 p^+_{9}$	6	$p^-_{10} = 2e_{9} / G$ $p^-_{10} = 2, 19$ E 43 MeV	$e_{10} = 2\ p_{8} / \alpha^2$ $e_{10} = 1, 46$ E 40 MeV
OL $_{+4}$		$2\alpha * p^-_{9} = 25 p^+_{8}$		$p^-_{9} = 2e_{8} / G$ $p^-_{9} = 1.3\ 4$ E 39 MeV	$e_{9} = 2\ p_{7} / \alpha^2$ $e_{9} = 7.3$ E 35 MeV
	●● quasar galaxies of type 2	$2\alpha * p^+_{8} = 290 p^-_{7}$	5	$p^+_{8} = 2e_{7} / G$ $p^+_{8} = 3.88$ E 35 MeV	$e_{8} = 2\ p_{6} / \alpha^2$ $e_{8} = 4.47$ E 31 MeV
	black spheres	$2\alpha * p^+_{7} = 238 p^-_{6}$		$p^+_{7} = 2e_{6} / G$ $p^+_{7} = 1.94$ E 31 MeV	$e_{7} = 2\ p_{5} / \alpha^2$ $e_{7} = 1.3$ E2 8 MeV
OL $_{+3}$	○○ quasars 2 genera	$2\alpha * p^-_{6} = 25 p^+_{5}$	4	$p^-_{6} = 2e_{5} / G$ $p^-_{6} = 1.19$ E2 7 MeV	$e^+_{6} = 2\ p_{4} / \alpha^2$ $e^+_{6} = 6.48$ E 23 MeV
	Intergalactic black spheres	$2\alpha * p^-_{5} = 290 p^+_{4}$		$p^-_{5} = 2e_{4} / G$ $p^-_{5} = 3.45$ E 23 MeV	$e_{5} = 2\ p_{3} / \alpha^2$ $e_{5} = 3.97$ E1 9 MeV
	● star Galactics	$2\alpha * p^+_{4} = 238 p^-_{3}$	3	$p^+_{4} = 2e3 / G$ $p^+_{4} = 1.7$ E1 9 M eV	$e^-_{4} = 2\ p_{2} / \alpha^2$ $e^-_{4} = 1.15$E+1 6 M eV
OL $_{+2}$	Galactic black spheres	$2\alpha * p^+_{3} = 25 p^-_{2}$		$p^+_{3} = 2e2 / G$ $p^+_{3} = 1.057$ E 15 MeV	$e3 = 2\ p_{1} / \alpha^2$ $e_{3} = 5.7\ 55$ E 11 MeV
	○ Stars	$2\alpha * p^-_{2} = 290 p^+_{1}$	2	$p^-_{2} = 2e_{1} / G$ $p^-_{2} = 3.0\ 5$ E 11 MeV	$e2 = 2\ p / \alpha^2$ $e2 = 3{,}524$ E7 M eV
	Planets	$2\alpha * p^-_{1} = 238 p^+$		$p^-_{1} = 2e / G$ $p^-_{1} = 1 , 532$ E7 M eV	$e_{1} = 2\ \nu_{\mu} / \alpha^2$ $e_{1} = 10216$ MeV
OL $_{+1}$	level	$2\alpha * p^+ = 25 \nu^-_{\mu}$	1	$p^+ = 2\ \gamma_{0} / G$ $p^+ = 938.28$ MeV	$e^- = 2\ \nu_{e} / \alpha^2$ $e^- = 0.511$ MeV
		$2\alpha * \nu^+_{\mu} = 292 \nu^-_{e}$		$\nu_{\mu} = \alpha^2 e_{1}/2$ $\nu_{\mu} = 0.27\ 1$ MeV	$\gamma_{0} = G\ p/2$ $\gamma_{0} = 3.13*10^{-5}$ M eV
			0	$\nu_{e} = \alpha^2 e/2$ $\nu_{e} = 1.36*\ 10^{-5}$ MeV	$\gamma = G\ \nu_{\mu}/2$ $\gamma^+ = 9.07*10^{-9}$ MeV
OL $_{0}$	Physical vacuum level			$\nu_{1} = \alpha^2 \gamma_{0}/2$ $\nu_{1} = 8.3*10^{-10}$ M eV	$\gamma_{1} = G\ \nu_{e}/2$ $\gamma_{1} = 4.5*\ 10^{-13}$ MeV
			-1	$\nu_{1} = \alpha^2 \gamma/2$ $\nu_{2} = 2.4*\ 10^{-13}$ MeV	$\gamma_{2} = G\ \nu_{1}/2$ $\gamma_{2} = 2.78*\ 10^{-17}$ MeV
				$\nu_{3} = \alpha^2 \gamma_{1}/2$ $\nu_{3} = 1.2*\ 10^{-17}$ MeV	$\gamma_{3} = G\ \nu_{2}/2$ $\gamma_{3} = 8.05*\ 10^{-21}$ MeV
	Physical		-2	$\nu_{4} = \alpha^2 \gamma_{2}/2$	$\gamma_{4} = G\ \nu_{3}/2$

OL - $_1$	vacuum level			$\nu_4 = 7.4 * 10^{-22}$ MeV	$\gamma_4 = 4.03* 10^{-25}$ MeV
				$\nu_5 = \alpha^2 \gamma_3/2$ $\nu_5 = 2.14* 10^{-25}$ MeV	$\gamma_5 = G \nu_4/2$ $\gamma_5 = 2.47* 10^{-29}$ MeV
			-3	$\nu_6 = \alpha^2 \gamma_4/2$ $\nu_6 = 1.07* 10^{-29}$ MeV	$\gamma_6 = G \nu_5/2$ $\gamma_6 = 7.13* 10^{-33}$ MeV
OL $_{-2}$	Physical vacuum level			$\nu_7 = \alpha^2 \gamma_5/2$ $\nu_7 = 6 , 57 *10^{-34}$ MeV	$\gamma_7 = G \nu_6/2$ $\gamma_7 = 3.5 8 * 10^{-37}$ MeV
			-1	$\nu_8 = \alpha^2 \gamma_6/2$ $\nu_8 = 1 . 898 *10^{-37}$ MeV	$\gamma_8 = G \nu_7/2$ $\gamma_8 = 2.2 * 10^{-41}$ MeV
				$\nu_9 = \alpha^2 \gamma_7/2$ $\nu_9 = 9 . 5 *10^{-42}$ MeV	$\gamma_9 = G \nu_8/2$ $\gamma_9 = 6 , 33 * 10^{-45}$ MeV
OL $_{-3}$	Physical vacuum level		-2	$\nu_{10} = \alpha^2 \gamma_8/2$ $\nu_{10} = 5 , 8 * 10^{-46}$ MeV	$\gamma_{10} = G \nu_9/2$ $\gamma_{10} = 3 , 2 * 10^{-49}$ MeV
				$\nu_{11} = \alpha^2 \gamma_9/2$ $\nu_{11} =1. 685 * 10^{-49}$ MeV	$\gamma_{11} = G \nu_{10}/2$ $\gamma_{11} = 1.9* 10^{-53}$ MeV
			-3	$\nu_{12} = \alpha^2 \gamma_{10}/2$ $\nu_{12} =8.46* 10^{-54}$ MeV	$\gamma_{12} = G \nu_{11}/2$ $\gamma_{12} = 5 , 62 * 10^{-57}$ MeV
	Physical vacuum OL $_{-2}$ levels			$\nu_{13} = \alpha^2 \gamma_{11}/2$ $\nu_{13} = 5 . 2 *10^{-58}$ MeV	$\gamma_{13} = G \nu_{12}/2$ $\gamma_{13} = 2 , 8 * 10^{-61}$ MeV
			-4	$\nu_{14} = \alpha^2 \gamma_{13}/2$ $\nu_{14} = 1.5 * 10^{-61}$ MeV	$\gamma_{14} = G \nu_{13}/2$ $\gamma_{14} = 1.7* 10^{-65}$ MeV
				$\nu_{15} = \alpha^2 \gamma_{10}/2$ $\nu_{15} =7.5* 10^{-66}$ MeV	$\gamma_{15} = G \nu_{14}/2$ $\gamma_{15} = 5* 10^{-69}$ MeV
	Physical vacuum OL - $_1$ level		-1	$\nu_{16} = \alpha^2 \gamma_{14}/2$ $\nu_{16} =4 . 6 * 10^{-70}$ MeV	$\gamma_{16} = G \nu_{15}/2$ $\gamma_{16} = 2.5 * 10^{-73}$ MeV
				$\nu_{17} = \alpha^2 \gamma_{15}/2$ $\nu_{17} = 1.33 * 10^{-73}$ MeV	$\gamma_{17} = G \nu_{16}/2$ $\gamma_{17} = 1.5* 10^{-77}$ MeV
			-2	$\nu_{18} = \alpha^2 \gamma_{16}/2$ $\nu_{18} =6.7 * 10^{-78}$ MeV	$\gamma_{18} = G \nu_{17}/2$ $\gamma_{18} = 4.4^{3} *10 -^{81}$ MeV
	Physical vacuum OL $_{-2}$ levels			$\nu_{19} = \alpha^2 \gamma_{17}/2$ $\nu_{19} =4 .1 * 10^{-82}$ MeV	$\gamma_{19} = G \nu_{18}/2$ $\gamma_{19} = 2 . 2 * 10^{-85}$ MeV
			-3	$\nu_{20} = \alpha^2 \gamma_{18}/2$ $\nu_{20} =1. 18 * 10^{-85}$ MeV	$\gamma_{20} = G \nu_{19}/2$ $\gamma_{20} = 1.36* 10^{-89}$ MeV
				$\nu_{21} = \alpha^2 \gamma_{19}/2$ $\nu_{21} =5.9*10^{-90}$ M eV	$\gamma_{21} = G \nu_{20}/2$ $\gamma_{21} = 3.94 * 10^{-93}$ MeV
	Physical vacuum OL $_{-2}$ levels		-4	$\nu_{22} = \alpha^2 \gamma_{20}/2$ $\nu_{22} = 3 . 6 *10^{-94}$ MeV	$\gamma_{22} = G \nu_{21}/2$ $\gamma_{22} = 1 . 975 *10^{-97}$ M eV
				$\nu_{23} = \alpha^2 \gamma_{21}/2$ $\nu_{23} =1 . 0 5 * 10^{-97}$ MeV	$\gamma_{23} = G \nu_{22}/2$ $\gamma_{23} = 1 , 2 * 10^{-101}$ MeV
			-4	$\nu_{24} = \alpha^2 \gamma_{22}/2$ $\nu_{24} =. 5.26 * 10^{-102}$ MeV	$\gamma_{24} = G \nu_{23}/2$ $\gamma_{24} = 3.494 *10^{-105}$ M eV

3. Parameters of the space-matter of the Universe in the quantum coordinate system.

Let us consider the properties of the classical representations of the Criteria for the Evolution of Matter. In the presented table of masses of indivisible (stable) quanta $(Y\pm)$ and $(X\pm)$ of space-matter, we are talking about the inert $m(Y-)$ mass, for example, $\gamma(Y-)$ of a photon, and the gravitational mass $m(\mathrm{X}+)$ e.g. $p(\mathrm{X}+)$ proton or $\nu_e(\mathrm{X}+)$ neutrino. We are talking about: $p(\mathrm{X}-) = e(Y+)$, $\nu_\mu(\mathrm{X}-) = \gamma_0(Y+)$, $\nu_{\mathrm{e}}(\mathrm{X}-) = \gamma(Y+)$ three charge and two: $(m = \Pi К)$ mass $e(Y-) = \nu_\mu(\mathrm{X}+)$, $\gamma_0(Y-) = \nu_{\mathrm{e}}(\mathrm{X}+)$ isopotentials in each $ОЛ_j$, and $ОЛ_i$ level of physical vacuum. We are talking about the energy $E = (\Pi_1\Pi_2 * K)$ of the interaction of the potentials of two points at a distance(K) , with a force$(F = \Pi^2 = \Pi_1\Pi_2)$. The potential itself is: $\Pi = (K * b)$, this is the acceleration (b) at a distance (K). Energy $E = mc^2$, or $E = \hbar\nu$, where $m = \nu^2 * V$, and so on.

In classical relativistic dynamics: $R^2 - c^2t^2 = \frac{c^4}{b^2} = \overline{R}^2 - c^2\overline{t}^2$, space-time space-time itself experiences acceleration:$b^2(R\uparrow)^2 - b^2\overline{c}^2(t\uparrow)^2 = (c^4 = F)$. In the same Criteria,$\left(b = \frac{K}{T^2}\right)(R = K) = \frac{K^2}{T^2} = \Pi$, we are talking about the potential in the velocity space $(\frac{K}{T} = \overrightarrow{e)}$ of a vector space in any $\vec{e}(x^n)$ coordinate system, where $\Pi = g_{ik}(x^n)$ is the fundamental tensor of the Riemannian space. Then in general 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 on the entire radius $(R = K)$ of the visible sphere of a single $(X\pm= Y\mp)$ space-matter of the Universe, gives (dark) energy $(U = FK)$ to the dynamics of the Universe, in gravity $(X+= Y-)$ mass and in electro$(Y+ = X-)$magnetic fields. Therefore, this is the energy of the relativistic dynamics of the 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 dynamics of a single $(X\pm=Y\mp)$ space-matter. Considering the dynamics of potentials in gravitational mass $(X+=Y-)$ fields, as already known, $(\Pi_1-\Pi_2)=g_{ik}(1)-g_{ik}(2)\neq 0$, we are talking about the "gravity" equation $R_{ik}-\frac{1}{2}Rg_{ik}-\frac{1}{2}\lambda g_{ik}=kT_{ik}$ of the General Theory of Relativity, in any system $g_{ik}(x^m=\mathrm{X,Y,Z,ct}\neq const)$ of coordinates, of non-stationary Euclidean space-time , in the form: $(x^m=\mathrm{X,Y,Z,ct})*\{\left(ch\frac{X(X+=Y-)}{Y_0=R_0(X-)}\right)(\mathrm{X+=Y-})*\cos\varphi_X(\mathrm{X-=Y+})=1\}$, and in various $ОЛ_j$, and $ОЛ_i$ levels of the physical vacuum of the entire Universe. At the same time: $\left(R_{ik}-\frac{1}{2}Rg_{ik}=\Delta\Pi_1=kT_{ik}+\frac{1}{2}\lambda g_{ik}\right)(X+=Y-)$, in addition to the space-matter curvature caused by the energy-momentum tensor (kT_{ik}), we are also talking about dynamics physical vacuum: $\frac{1}{2}\lambda(g_{ik}=4\pi a^2*\rho)$, where from $(a(t)\to\infty)$ and $(\rho=\frac{1}{(T\to\infty)^2}\equiv H^2)$, and $НОЛ=(T_i\to\infty)(t_i\to 0)=1$, the Universe disappears in time $(t_i\to 0)$, at infinite radii $(a(t)\to\infty)$, with the Hubble parameter $(H=\frac{\dot a}{a})$ of the inflationary model and $(a(t)=cT*ch\frac{ct}{cT})$. The gradient of such a $(\Delta\Pi_1)$ potential is also known to give quantum gravity equations with inductive $M(Y-)$ (hidden) mass fields in the gravitational field. We are talking about $(\Delta\Pi_1{\sim}T_{ik})\downarrow(X+=Y-)$ energy-momentum: $T_{ik}=\left(\frac{E=\Pi^2K}{p=\Pi^2T}\right)_i\left(\frac{E=\Pi^2K}{p=\Pi^2T}\right)_k=\frac{K^2}{T^2}\equiv(\Pi)$, gravity $(X+=Y-)$ of the mass fields of the entire Universe, with a decrease in the density of mass $(Y-)$ trajectories on the Planck scale.

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

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

In quantum relativistic dynamics, we are talking about the non-stationary Euclidean space of a sphere, which in space-matter has the form of a dynamic ellipsoid. Moreover, the photon comes to the surface from the center of the ellipsoid at the same time. This is due to the dynamics of the speed of light, when: $(c=\frac{\downarrow\lambda\uparrow}{\downarrow T\uparrow})$, the scale of the period (photon frequency $\uparrow\nu\downarrow=\frac{1}{\downarrow T\uparrow}$) and the wavelength $(\downarrow\lambda\uparrow)$ change. This is analogous to classical relativistic dynamics, using the example of two observers. A (on the platform) and B (in the car), when simultaneous flashes of light for A in front and behind the car will not be simultaneous for B, who will see blue light in front and red light behind the car. The light wave itself does not change, but the period of interaction for the forward (approaching) wave decreases, and for the back (receding) wave increases, which changes the color of the wave. And the passage of time slows down in the "red" interaction, and accelerates in the "blue" interaction. Similarly, the light at a larger diameter will be "red", with the passage of time slowing down, at a smaller one "blue".

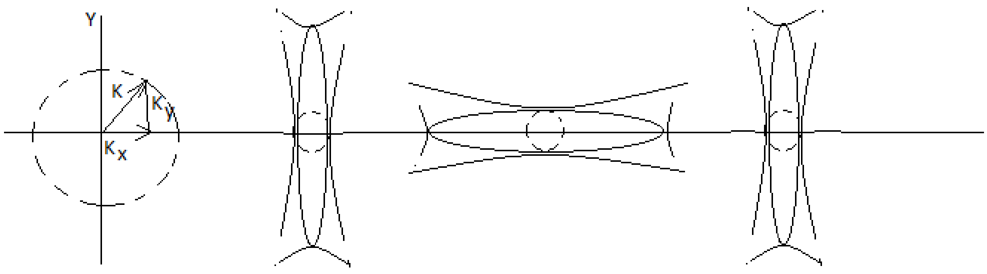


Fig.7. quantum relativistic dynamics

And the same relativistic quantum dynamics $e(Y-)_j\to\gamma(Y-)_i$ in the levels $ОЛ_j$, and $ОЛ_i$ of the physical vacuum of the entire Universe.

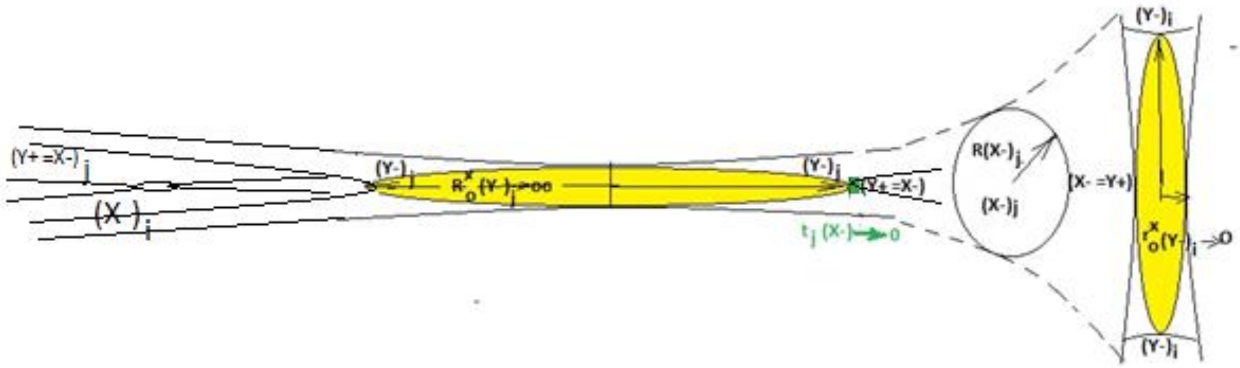


Fig.7a. quantum relativistic dynamics

In quantum gravity, we are talking about quantum dynamics: $e(Y-)_j \rightarrow \gamma(Y-)_i$ in ОЛ_j, and ОЛ_i physical vacuum levels at the (m) convergence of the entire Universe. In the unified Criteria of the Evolution of space-matter, the density $(\rho = \frac{\text{ПК}}{\text{К}^3} = \frac{1}{\text{Т}^2} = \nu^2)$, give $\text{c} = \frac{\lambda(Y-)_j \rightarrow 0}{T(Y-)_j \rightarrow 0}$ about zero parameters of the instantaneous "Explosion" infinitely large $(\rho(Y-)_J = \frac{1}{T(Y-)_J{}^2} \rightarrow \infty)$ density of dynamic masses in $(Y+ = X-)_J$ field of the Universe. At infinitely small $(T(Y-)_J \rightarrow 0)$ periods of dynamics, in dynamic space-matter: $\text{НОЛ} = (T(Y-)_J \rightarrow 0) * (t(Y+= X-)_J \rightarrow \infty) = 1$, in the $(X-)_J$ field of the Universe, an infinite number of events occur, in "compressed time" $(t(Y+= X-)_J \rightarrow \infty)$, at the level ν_i/γ_i quanta and with the origin $\big(T(Y -)_J = 1\big) * \big(t(Y+= X -)_J = 1\big) = 1$, time $\big(t(X -)_J = 1\big)$. From the axioms $\text{НОЛ} = \text{КЭ}(m = j) * \text{КЭ}(n = i) = 1$, or $(\rho(Y+= X-)_J \rightarrow 0)(\rho(X-)_i \rightarrow \infty) = 1$ united space-matter of the initial Universe, quanta $(\rho(X-= Y+)_i \rightarrow \infty)$ are born immediately. And already in such a physical vacuum in $(\rho(X+= Y-)_i \rightarrow 0)$, quanta $(\gamma(Y-)_i = (\rho(Y-)_i \rightarrow 0)$ with near zero mass density. And we are talking about the radius of the sphere of a non-stationary Euclidean expanding space, $R(X-)_J \rightarrow \infty$, on (m) convergence, and $r(X-)_i \rightarrow 0$, on (n) convergence, i.e. superluminal speeds: $(w_i = \alpha^{(-N=-1,-2\dots)} * c)$, in (ОЛ_i) levels of physical vacuum.

In the axioms of dynamic space-matter $\text{НОЛ} = \text{КЭ}(m = j) * \text{КЭ}(n = i) = 1$, there are Indivisible Areas of Localization: $(X \pm)_{ji} = p_j(X^n)\nu_i(X^n)$and $(Y \pm)_{ji} = e_j(Y^n)\gamma_i(Y^n)$states of quanta, with mutually orthogonal $(X^n) \perp (Y^n)$coordinate systems. This means that if there is $\big(Y- = e_j\big)$, then there are always $(Y- = \gamma_i)$quanta. Likewise $\big(X- = p_j\big)$with $(X- = \nu_i)$quanta. This implies a quadratic form of the dynamics of quantum energy: $(\Delta E^2 = \hbar^2\Delta(\rho = \nu^2)$.

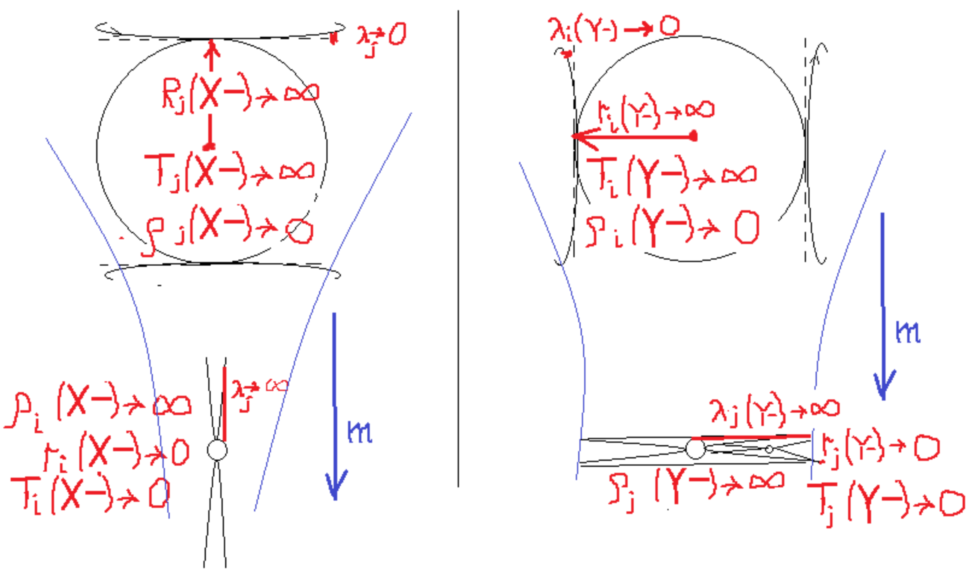


Fig.8a. to the dynamics of the space-matter of the Universe

The larger the radius of the dynamic sphere $(r \to R)$ the less curvature$(\lambda_\infty \to \lambda_0)$ space-matter and vice versa, in accordance with the properties НОЛ $= (r\lambda_\infty) = (R\lambda_0) = 1$, of space-matter itself.
Here: $\lambda(X-) = (r \to R)tg\ \varphi(X-)$, and $\lambda(Y-) = (r \to R)tg\ \varphi(Y-)$ respectively. Exactly the same, density ratios НОЛ $= (\rho_\infty\lambda_\infty) = (\rho_0\lambda_0) = 1$, at constant field potentials. And exactly the same properties (T)- the period of the dynamics of the quanta and (t)– their relative time of events, НОЛ $= (T_0 t_\infty) = (t_0 T_\infty) = 1$. At infinitely large radii, the Universe disappears in time(t_0) and the density of space-matter is reduced to zero (ρ_0)in all cases. The opposite picture in hyperbolic properties occurs in the depths of the physical vacuum of the Universe. This state of dynamic space-matter is represented by quanta:

$$(X\pm)_{ji} = p_j\begin{pmatrix} R_j(X-) \to \infty \\ \rho_j(X-) \to 0 \end{pmatrix} \nu_i \begin{pmatrix} r_i(X-) \to 0 \\ \rho_i(X-) \to \infty \end{pmatrix} = 1, \quad (Y\pm)_{ji} = e_j\begin{pmatrix} r_j(Y-) \to 0 \\ \rho_j(Y-) \to \infty \end{pmatrix} \gamma_i \begin{pmatrix} R_i(Y-) \to \infty \\ \rho_i(Y-) \to 0 \end{pmatrix} = 1$$

Properties of dynamic spheres$(r \to R)$ in velocity space:

$\big(W_j(X-) = \alpha^N c \to 0\big)\big(v_i(X-) = \alpha^{-N} * c \to \infty\big) = 1$: The following relations hold:

НОЛ $= \big(R_j(X-) \to \infty\big)\big(\lambda_j(X-) \to 0\big) = 1$, НОЛ $= \big(r_i(X-) \to 0\big)\big(\lambda_i(X-) \to \infty\big) = 1$, and

$$\big(W_j(Y-) = \alpha^N c \to 0\big)\big(v_i(Y-) = \alpha^{-N} * c \to \infty\big) = 1$$

НОЛ $= \big(R_i(Y-) \to \infty\big)\big(\lambda_i(Y-) \to 0\big) = 1$, НОЛ $= \big(r_j(Y-) \to 0\big)\big(\lambda_j(Y-) \to \infty\big) = 1$.

The selected states of the physical vacuum determine the modality of the properties of matter, for example, proton, electron and antimatter, respectively. Quanta of space-matter have the properties of emitting and absorbing. Electron $(Y\pm= e)$ emits and absorbs $(Y\pm= \gamma)$ a photon. Therefore we can say that $(Y\pm= e_j)$ quanta of higher density of mass $\rho(Y-)$fields, successively emit quanta $(Y\pm= e_{j-2})$of lower density, and then $(Y\pm= \gamma)$the quanta emit $(Y\pm= \gamma_{i-2} \dots . \gamma_{i-22})$ quanta into the full depth of the physical vacuum, with near zero density. On the contrary, quanta $(X\pm= p)$ higher density mass $\rho(X-)$fields are absorbed sequentially by quanta $(X\pm= p_{j+2})$lower density. At the same time, conditions are formed: $\rho_j(X-) \to \infty$, and $R_j(X-) \to \infty$, a new cycle of the dynamics of the Universe. Various densities $(\rho_\infty)$and (ρ_0)in different $(X- = Y+)$ And $(X- = Y+)$ fields, give a difference in densities $(\Delta(\rho = \nu^2) \neq 0)$. It is this $(\Delta\rho = \frac{\Delta E^2}{\hbar^2})$ difference in densities that causes the radiation and (or) absorption of the energy of space-matter quanta. We are talking about quantum (non-vanishing) dynamics

$$(R_j(X-) \to \infty) \to (R_i(X-) \to 0)\text{And}(R_i(Y-) \to \infty) \to (R_j(Y-) \to 0)$$

space-matter, in quantum $(m-n)$ coordinate system. The argument for such dynamics is the "dark energy" of expansion $(R_i(Y-) \to \infty)$ space-matter. Such dynamics of accelerations:

$(b = \rho R)$, $(\rho_j(X-) \to 0)(R_j(X-) \to \infty) =$ НОЛ, And$(\rho_i(Y-) \to 0)(R_i(Y-) \to \infty) =$ НОЛ quanta of dynamic space-matter, is determined and has the property of the uncertainty principle. In other words, in these $(X\pm)_{ji}$and$(Y\pm)_{ji}$ levels $R_j(X-)$,$R_i(Y-)$ physical vacuum, the properties of any point, are the properties of the space-matter of the entire Universe. This is the space of velocities in which all the Criteria of the Evolution of matter are formed. Let's call them the Background Criteria of the Evolution of charge and mass $(X-)_j$and$(Y-)_i$ trajectories, with their quantum dynamics. And already on this background $(\rho_j(X-) \to 0)$, $(\rho_i(Y-) \to 0)$that is: $(\rho \equiv \nu^2)$the dynamics of the Dominant, any Criteria of Evolution, in the multidimensional space of speeds, goes towards increasing frequencies $(\uparrow \rho \equiv \uparrow \nu^2)$, as well as the densities of quanta of dynamic space-matter on their (m) convergence.

On the other hand, such properties give quantum entanglement of the entire dynamic space-matter of the Universe as a whole. We are talking about the simultaneous and opposite dynamics of any Evolution Criteria on infinite $R_j(X-)$,$R_i(Y-)$ radii of spheres-points in each level $(m-n)$of convergence of the physical vacuum. To understand, this is similar to a tablecloth on a table, where "lie, say, two objects A and B" at any distances. If you "pull the tablecloth" (the background quantum of space-matter), then objects A and B with opposite properties (say, the wave function $i\psi = \sqrt{(+\psi\ (-\psi\ )}$of convergence quanta (m)) will change simultaneously at any distances. In this case, object A does not interact with object B. And this happens in all $(m-n)$ levels of spheres-points of space-matter of the entire Universe.

In the big picture, we have the dynamics of quanta (m) convergence $(\uparrow \nu^2)$, in one sphere-point, but already $(n)$the convergence $(\downarrow \nu^2)$of spheres-points of the entire Universe, with the indicated quantum entanglement and the uncertainty principle at each $(m-n)$level of the physical vacuum. And such dynamics are accompanied by radiations ("explosions") of quanta $\big(Y\pm= e_j\big) \dots (Y\pm= \gamma_{i-2} \dots . \gamma_{i-22})$, into the full depth of the physical vacuum, with the subsequent generation of structural forms similar to the generation nuclei $(Y\pm= e_{+}^{*}) = 238p^{+}$, with their decay into a spectrum of atoms. And this happens everywhere.

As is known, density itself is a unit of measurement of physical quantities in the unified Criteria, equations of dynamics in electromagnetic (Maxwell) and gravitational fields, in the field of the Universe.

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

These are the properties of space-matter itself. Moreover $\lambda(X-)_J \to \infty$, and $\lambda(X-)_i \to 0$, $c = \frac{\lambda(X-)_i{\to}0}{T(X-)_i{\to}0}$, with density $(\rho(X-)_i = \frac{1}{T(X-)_i{}^2} \to \infty)$ at the limit level $(OЛ_i)$, as the "bottoms" of the physical vacuum **.**

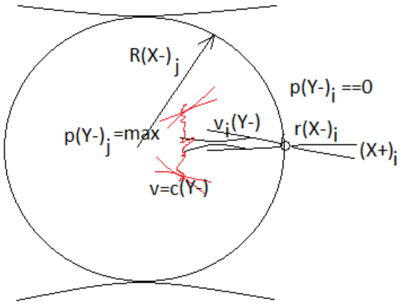


Fig.8b. to the dynamics of the space-matter of the Universe

In quantum gravity, the acceleration of mass trajectories $(Y- = X+)$ in a gravitational field $G(X+)\left[\frac{K}{T^2}\right] = \psi \frac{\hbar}{П^2\lambda} G \frac{\partial}{\partial t} grad_n Rg_{ik}(X+)\left[\frac{K}{T^2}\right]$ maximum, for $\lambda(X-)_i \to 0$, in $(OЛ_i)$ levels of the physical vacuum. We are talking about the superluminal velocity space $(w_i = \alpha^{(-N=-1,-2\ldots)} * c)$, $\gamma_i(Y-)$ photons of the $(OЛ_i)$ level, with their dynamics period: $c = \frac{\lambda(Y-)_i{\to}\infty}{T(Y-)_i{\to}\infty}$, $T(Y-)_i \to \infty$.This means that at infinite radii $R(X-)_J \to \infty$ “at the bottom” of the physical vacuum, at each of its points $r(X-)_i \to 0$, at (n) convergences, the Universe “disappears” in time: $t = (n \to 0) * T(Y-)_i = 0$. "At the bottom" of the physical vacuum, in $(OЛ_i)$ levels, we cannot fix events by photon $\gamma_i(Y-)$ with dynamics period $T(Y-)_i \to \infty$. At the same time , any density: $(\rho(Y-)_J = \frac{1}{T(Y-)_J{}^2} \to \infty)$ dynamic masses “falls” into the depths $(\rho(Y-)_i \to 0)$ of the physical vacuum$(OЛ_i)$ levels, at (n)convergence at every point of space-matter of all $(R(X-)_J \to \infty)$ Universe. The masses themselves

$e(Y-)_J = (X+ = p_j)(X+ = p_j)$, have the structural form of “black spheres” with “ jets ”$e(Y-)_J \to \gamma_i(Y-)$ decays. And every time there is a generation $2\alpha\left(X+ = p_j\right) = e(Y-)_{J-1}$ quanta in mass trajectories. This creates the effect of an “expanding Universe” with the effect of the primary $(T(Y-)_J \to 0)$ “Big Bang”. At the same time, the speed of light, $\gamma(Y-)$ photon $(OЛ_1)$ level, remains unchanged in any level of physical vacuum:

$c = \frac{\lambda(Y-)_i{\to}\infty}{T(Y-)_i{\to}\infty} = c = \frac{\lambda(Y-)_j{\to}0}{T(Y-)_j{\to}0} = c = \frac{\lambda(X-)_i{\to}0}{T(X-)_i{\to}0}$. For $\gamma(Y-)$ photons of the $(OЛ_1)$ level, “falling” into near-zero mass densities $(\rho(Y-)_i = \frac{1}{T(Y-)_i{}^2} \to 0)$, with acceleration $G(X+)\left[\frac{K}{T^2}\right] = \upsilon * H\left[\frac{K}{T^2}\right]$, where (H) fixed Hubble constant: $H = \frac{\upsilon}{R}$. The wavelength $\gamma(Y-)$ of photons $\cos(\varphi_Y)\uparrow * \cos(\varphi_X)\downarrow = 1$, increases $\lambda_Y(\varphi_Y)\uparrow * \lambda_X(\varphi_X)\downarrow = 1$, when “falling into near zero density” at the limiting radii $(R(X-)_J \to \infty)$ of the Universe, in the limiting depth of the physical $(r(X-)_i \to 0)$ vacuum. These "relic $\gamma(Y-)$ photons" $(OЛ_1)$ level (red in the figure) are seen in experiments. Further we speak about superluminal $\gamma_i(Y-)$ photons. The mathematical truth is that on the infinite radii of the entire space-matter of the Universe $R_j(X-) \to \infty$ with its mass $\lambda_i(Y-) \to \infty$ trajectories, the density of matter $(\rho_j(X-) \to 0)$, $(\rho_i(Y-) \to 0)$, tends to zero. At any point of the sphere $R_j(X-) \to \infty$ of the Universe, the non-locality (simultaneity) of the dynamics of the set of points chosen in symmetries is valid at the energy level

$(X- = Y+)_j$ of the electromagnetic field of the physical vacuum. The proper time of dynamics t is reduced to zero in the axioms НОЛ $= (t_i(Y+) \longrightarrow 0)T_i(Y-) \longrightarrow \infty) = 1$ dynamic space-matter, as well as acceleration dynamics:

$(b=(R_j(X-)\to\infty)(\rho_j(X-)\to 0)\ = const)$, $(b=(\lambda_i(Y-)\to\infty)(\rho_i(Y-)\to 0)=const)$ mass trajectories. In other words, the mathematical truth is the disappearance of the dynamic space-matter mass density at infinity, and the Universe disappears in time $t_i(Y+=X-)\longrightarrow 0$ with the acceleration same $(b=const)$ of the entire space-matter. On the other hand, $r_i(X-)\to 0$ takes place $(\rho_i(X-)\to\infty$, and the beginning $(\lambda_j(Y-)\to 0)$, $(\rho_j(Y-)\to\infty)$, such ("Explosion"), "instantaneous" $T_j(Y-)\to 0$, period of the Universe dynamics.

In this case, we have:

1. Energy of radiation and (or) absorption $\Delta E^2=\hbar^2\Delta\rho$, quanta of space-matter, in the form known to us: $E=mc^2$, or $E=\hbar\nu$, where $m=\nu^2V$, and so on, but already at$ОЛ_{ji}(m-n)$ spectrum of the quantum coordinate system of space-matter of the entire Universe. It's about radiation$(\rho_\infty(Y-=\mathrm{e_j})\to\rho_0(Y-=\gamma_i)$ mass and $(\rho_\infty(X-=\mathrm{p_j})\to\rho_0(X-=\nu_i)$charge fields.
2. We always have a vortex:$rot_Y B(X-)$ And$rot_Y M(Y-)$ quantum dynamics $(X\pm)$and $(Y\pm)$ in a single space - matter $(X-=Y+)$, $(Y-=X+)$.
3. The dynamics $(\Delta\rho)$of densities themselves are due to the "stepwise (quantum) failure" of densities (ρ_∞), into the "endless void" $(\rho_\infty\to\rho_0)$.
4. Combination of densities: $\rho(X-)\rho(Y-)=1$, this is an Indivisible Area of Localization of a single and dynamic space - matter $(X-=Y+)$, $(Y-=X+)$. Quantum $\rho(X-)$field dynamics $(X\pm)$, always generates $\rho(X+=Y-)$a field, and quantum dynamics $\rho(Y-)$of the field $(Y\pm)$, always generates $\rho(Y+=X-)$a field.
5. Emission $\rho(Y-)$and absorption $\rho(X-)$of densities $(\rho_\infty\to\rho_0)$occurs simultaneously with their quantum dynamics $\rho(Y-)\ \to\rho(Y+=X-)$and $\rho(X-)\to\rho(X+=Y-)$. This is a multi-stage and multi-level process in quantum$ОЛ_{ji}(m-n)$ coordinate system.
6. It is necessary to take into account the scale of $(r=10^{-33}sm)(R=10^{33}sm)=1$such dynamics of each such $(R\lambda=1)$, $(r\lambda=1)$quantum of them$ОЛ_{ji}(m-n)$ spectrum.

The quantum dynamics of the space-matter of the Universe in the quantum coordinate system, during the expansion of the Universe, is due to the primary "failure" of the densities $\rho_j(Y-=e_j)$ to near-zero mass $\downarrow(\rho_\mathrm{i}(Y-=\gamma_i)\ \approx 0)$ density of the physical vacuum . In the axioms of dynamic space-matter: $НОЛ=КЭ(X-=Y+)КЭ(Y-=X+)=1$, and $НОЛ=КЭ(m)КЭ(n)=1$, each $(X\pm)$ and $(Y\pm)$ quantum $ОЛ_{ji}(m)$ of the spectrum corresponds to the dynamic conditions $cos^2\varphi_X cos^2\varphi_Y=1$ and $0\le\varphi<\varphi_{max}$, $\varphi\ne 90^0$, $ch(Y/X_0)*cos\varphi_Y=1$, $ch(X/Y_0)*cos\varphi_X=1$, with Interaction constants: $cos^2\varphi_X=G=6{,}672*10^{-8}$, and $cos\varphi_Y=\alpha=1/137{,}036$. This means that with a decrease in the angles of parallelism $\varphi_i(Y-)\to 0$ with the disappearance of fields, the angles of quanta $\varphi_i(X-)\to\varphi_{MAX}(X-)$ increase, and vice versa. In this case, matter does not disappear, but passes from one type to another, in the form of a change in dominant fields along their $ОЛ_{ji}(m)$ spectrum.

4.Properties of indivisible quanta in the quantum coordinate system.

We can determine the limiting parameters of the space-matter dynamics of the entire Universe, in a quantum coordinate system. Speaking about the space of velocities $e_j(Y-)$ and $\gamma_i(Y-)$ of quantum's $ОЛ_{ji}(m)$ of the quantum coordinate system, by analogy with the velocities of an electron and a photon: $w_e=\alpha^{N=1}*c$, we can say about the speeds $w(e_j)=\alpha^N*c$, macro electrons $(ОЛ_j)$ levels and $w(\gamma_i)=\alpha^{-N}*c$, already superluminal sub photons $(ОЛ_i)$ physical vacuum levels. We will define limit values (N). For the $(ОЛ_1)$ level $(p,e,\nu_\mu,\gamma_0,\nu_e,(\gamma=c))$ the Planck length and time are defined:

$$l_{pl}=\sqrt{\frac{Gh}{c^3}}=\sqrt{G}K=\sqrt{\frac{6.67*10^{-8}*6.62*10^{-27}}{(3*10^{10})^3}}=4*10^{-33}sm$$

$$T_{pl}=\sqrt{\frac{Gh}{c^5}}=\sqrt{G}T=\sqrt{\frac{6.67*10^{-8}*6.62*10^{-27}}{(3*10^{10})^5}}=1.35*10^{-43}s\text{ , где }\quad\sqrt{G}=\cos\varphi_X$$

These limit values of length (l_{pl}) and time (T_{pl}) are calculated with the constant $\sqrt{G}$, and refer to the limit quantum $(X\pm=\nu_i)$ of the level $(ОЛ_\mathrm{i})$ of the physical vacuum. From the relation $T_{pl}=\sqrt{\frac{Gh}{c^5}}=\sqrt{G}T_i=1.35*10^{-43}s$, for the period (T_i) of the quantum dynamics (ν_i) , we get:

$$(\sqrt{G})^N*1=1.35*10^{-43}s\text{ , or }\ N=log_{\sqrt{G}}(T_{pl}=10^{-43})\text{ , and }\ N=-43\frac{ln10}{ln\sqrt{G}}\approx 12.$$

In the spectrum of $(ОЛ_\mathrm{i})$ levels, $N=12$ corresponds to the sub neutrino quantum (ν_{24}) with the isopotential of the sub photon quantum $(\gamma_{24}^{+}=\alpha^{-12}*c)$. By analogy with the emission of a photon by an electron

$(e \to \gamma)$ similarly to a neutrino $(p \to \nu_e[N=0])$ proton, we are talking about radiation in (ОЛ_{i}) levels of the physical vacuum:

$(\gamma \to \gamma_2[N=1])$, $(\gamma_2 \to \gamma_4[N=2])$, $(\gamma_4 \to \gamma_6[N=3])$, $(\gamma_6 \to \gamma_8[N=4])$,… $(\gamma_{22} \to \gamma_{24}[N=12])$… and $(\nu_e \to \nu_2[N=1])$, $(\nu_2 \to \nu_4[N=2])$, $(\nu_4 \to \nu_6[N=3])$, $(\nu_6 \to \nu_8[N=4])$,… $(\nu_{22} \to \nu_{24}[N=12])$.

In the axioms of dynamic space-matter, $\text{НОЛ} = \text{КЭ}(m)\text{КЭ}(n) = 1$, we obtain for the masses (M) of indivisible quanta in (ОЛ_{ji}) levels:

$$\text{НОЛ} = M(e_1 = 1{,}15\text{ E4 })(k = 3.13)M(\gamma_0 = 3.13.\text{E} - 5\ ) = 1$$
$$\text{НОЛ} = M(e_2 = 3{,}524\text{ E7 })(k = 3.13)M(\gamma = 9{,}07\text{ E} - 9\ ) = 1$$
$$\text{НОЛ} = M(e_3 = 5{,}755\text{ E11 })(k = 3.86)M(\gamma_1 = 4.5.\text{E} - 13\ ) = 1$$
$$\text{НОЛ} = M(e_4 = 1{,}15\text{ E16 })(k = 3.13)M(\gamma_2 = 2{,}78\text{ E} - 17\ ) = 1$$
$$\text{НОЛ} = M(e_5 = 3{,}97\text{ E19 })(k = 3.13)M(\gamma_3 = 8.05.\text{E} - 21\ ) = 1$$
$$\text{НОЛ} = M(e_6 = 6{,}48\text{ E23 })(k = 3.83)M(\gamma_4 = 4{,}03\text{ E} - 25\ ) = 1$$
$$\text{НОЛ} = M(e_8 = 4{,}47\text{ E31 })(k = 3.14)M(\gamma_6 = 7{,}13\text{ E} - 33\ ) = 1$$
$$\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots$$
$$\text{НОЛ} = M(e_{26} = 9{,}1\text{ E103 })(k = 3.14)M\big(\gamma_{24} = 3{,}5\text{ E} - 105\ \big) = 1$$

Obviously, we are talking about vortex mass $(Y-)$trajectories:

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

equations of dynamics in a circle $(k = 3.14 = \pi = \frac{2\pi R = l}{2R})$ in each (ОЛ_i) level of the physical vacuum. Therefore, we are talking about exactly such radiations already in (ОЛ_{j}) levels of the physical vacuum: $(e \to \gamma[N=0])$, because: $w(\gamma) = \alpha^{N=0} * c) = c$, $w(e) = \alpha^{N=1} * (\gamma = c)$ and further:

$(e_2 \to e[N=2])$, $(e_4 \to e_2[N=3])$, $(e_6 \to e_4[N=4])$… $(e_{26} \to e_{24}[N=14])$, likewise:
$(p_2 \to p[N=2])$, $(p_4 \to p_2[N=3])$, $(p_6 \to p_4[N=4])$… $(p_{26} \to p_{24}[N=14])$.

We are talking about the space-matter of the entire Universe, defined by constants: $(\hbar,\ \text{c},\ G,\ \alpha)$. The radiation itself in (ОЛ_{j}) levels of the physical vacuum is caused by acceleration (b) in the relativistic dynamics of the entire space-matter: $b^2(R\uparrow)^2 - b^2c^2(t\uparrow)^2 = (c^4 = F)$ giving the potentials:

$$\left(b = \frac{K}{T^2}\right)(R = K) = \frac{K^2}{T^2} = \Pi \text{ , "dark" energy:}$$
$$(\Pi_1^2 - \Pi_2^2)K = (\Pi_1 - \Pi_2)K(\Pi_1 + \Pi_2) = (\Delta\Pi_1)(X+=Y-)\downarrow K(\Delta\Pi_2)(X-=Y+)\uparrow = FK = U$$

For all quanta $\text{ОЛ}_{ji}(m)$ of the spectrum, the period of dynamics $(0 \leftarrow T \to \infty)$ takes place has a different “scale”, but always for $(T = 1)$ the wavelength $\lambda(e_j)\downarrow = w(e_j) * (T = 1) = \alpha^N * c * (T = 1)$ for macro electrons, and $\lambda(\gamma_i)\uparrow = w(\gamma_i) * (T = 1) = \alpha^{-N} * c * (T = 1)$ for sub photons. In the Planckian length limits in the axioms of dynamic space-matter: $(R_j) * (R_i = 4 * 10^{-33} sm) = 1$ we have limiting $(R_j) = 2.5 * 10^{32} sm$, sizes with near zero mass densities: $(\rho_i(Y-) \to 0)$, in (ОЛ_i) levels of the physical vacuum.

The dynamics of matter $(\varphi \neq const)$ is fixed in the Euclidean $(\varphi = 0)$, $(\varphi = const)$, axiomatic of the Evolution Criteria formed in the space $(K^{\pm N}T^{\mp N})$ of time. To each $(\varphi = const)$ fixed state corresponds to its own space-time, as well as the Criteria of Evolution, in accordance with the Theories of Relativity. In the Indivisible Area of Localization,

$$\text{НОЛ} = M(e_{26} = 9{,}1\text{ E103 })(k = 3.14)M(\gamma_{24} = 3{,}5\text{ E} - 105\ ) = 1 \ ,$$

the exoquasar quantum $(Y\pm = e_{26})$ corresponds to the speed $w(e_{26}) = \alpha^{N=14} * c$. In the coordinate system of atomic (p/e) structures ОЛ_1 of the level of ordinary atoms, where $(w_e = \alpha * c)$ is the electron velocity, there is a relation relative to the electron $N = 13$ in the form:

$$\text{НОЛ} = w_j(e_{26}) * w_i(\gamma_{24}) = (\alpha^{13} w_e) * (\alpha^{-13} w_e) = w_e^2 = \Pi_e = 1$$

In this case, the wavelength $\lambda(e_{26}) = \alpha^{13}(\lambda(e) = w_e(T_j = 1))$ is calculated, through the electron wavelength,

$$\lambda(e) = \frac{h}{m_e \alpha * c} = \frac{6.626 * 10^{-27} * 137.036}{9.1 * 10^{-28} * 3 * 10^{10}} = 3.32 * 10^{-8} sm\ , \quad \lambda(e_{26}) = \alpha^{13}\lambda(e) = 5.5 * 10^{-36} sm\ ,$$

And the first emitted quanta, $(e_{26}) \to \alpha(e_{24})$, have: $2\lambda(e_{24}) = 2\alpha^{-1}\lambda(e_{26}) = 1.5 * 10^{-33} sm$, dimensions in circles corresponding to the Planck dimensions $(\lambda_{pl} = 4 * 10^{-33} sm)$ calculated in $(\hbar, G, c)$ constants.

From the experimental data, for the minimum $(\lambda_i \approx 10^{-16} sm)$ distances are measured by $(Y\pm = \gamma)$ quanta, with the dynamics period: $T = \frac{\lambda_i}{c} \approx 10^{-26}s = \alpha^N T_i$, value (N) for period: $(T_i = 1)$ of dynamics, calculated: $10^{-26} = \alpha^N(T_i = 1)$, $N = -26 log_\alpha 10 = -26\frac{\ln 10}{\ln \alpha} \approx 12$, $N = 12$. This order (ОЛ_i) of the spectrum corresponds to $(Y\pm = \gamma_{24})$ a sub photon quantum. It corresponds to the quantum $(Y\pm = e_{26})$, with wavelength $\lambda(e_{26}) = r_{26} = 5.5 * 10^{-36} sm$, within the entire Universe: $\text{НОЛ} = R_{26} r_{26} = 1$ or

$R_{26} = \frac{1}{r_{26}} = 1.8 * 10^{35} sm$ in radius sphere: $R = \frac{\alpha^{-12} * c(T=1)}{2\pi} = \frac{4.3855*10^{25} 3*10^{10}}{6.28} \approx 2.1 * 10^{35} sm$,
(1 light year=365.25*24*3600*3*10^{10}=9.5*10^{17} sm). In both cases, we are talking about sizes of the order $R = 2 * 10^{17}$ light years. Today, the fixed limits of the Universe are about $R_i \approx 14$ billion light years. In the quantum coordinate system $OЛ_{ji}(m)$ of dynamic space-matter, we have about 15million such fixed Universes.
From theoretical calculations of Planck quantities, for$(X-)$ fields of the Universe:

$$l_{pl} = \sqrt{\frac{G\hbar}{c^3}} = 4 * 10^{-33} sm, \qquad t_{pl} = \frac{l_{pl}}{c} = 1. = 1.35 * 10^{-43} s = (\sqrt{G})^N * (T = 1),$$

$$N = log_{\sqrt{G}}(t_{pl}) = \frac{\ln(1.35*10^{-43})}{\ln(\sqrt{G} = 6.67*10^{-8})} = \frac{-98.7}{-8.26} = 12.$$

We have a space of maximum sub neutrino velocities: $v(\nu_{24}) = (\sqrt{G})^{-12} * c = 3.4 * 10^{53} sm/s$, defines space-matter$(X-)$ field of the Universe, in which the maximum speeds of sub photons take place: $v(\gamma_{24}) = (1/137)^{-12} * c = 4.37 * 10^{35} sm/s$. For 1 period, we get the dimensions$(X-)$ fields of the Universe: $R(X- = \nu_{24}) = (\sqrt{G})^{-12} * c(T = 1) = 3.4 * 10^{53} sm$, and the area filled with sub photons: $R(Y- = \gamma_{24}) = (1/137)^{-12} * c(T = 1) = 4.37 * 10^{35} sm.$, from the moment the dynamics begin. One light year: $1\text{св. г.} = 9.5 * 10^{17} sm$. That is: $R(X-) = 3.6 * 10^{35}$light years of space$(X-)$ fields of the Universe, and $R(Y-) = 4.6 * 10^{17}$light years,$(X-)$ fields of the Universe filled with photons and sub photons. This is $N = 4.6 * 10^{17}/(13.75 * 10^9) = 33.5$a million of the Universe “visible” to us. As we see, she$(X-)$ the universe is even larger, with $(Y-)$mass field dynamics.

4. Valid objects of the Universe

The objects of the Universe will be called “sphere-points” $OЛ_{ji}(n)$ of convergence, in each fixed "point" $OЛ_{ji}(m = const)$, quantum coordinate system. For example, objects:

$$\text{НОЛ} = M(e_2 = 3{,}524\ \text{E}7\ )(k = 3.13) M(\gamma = 9{,}07\ \text{E} - 9\ ) = 1$$

by analogy with the nucleus (p/e) of ordinary atoms, we are talking about quanta (p_2/e_2) of the nucleus of a star. Stars with such a nucleus have a limiting energy level of the physical vacuum, at the level of (γ) photon. Below the energy of a photon, in the physical vacuum, the star does not manifest itself. Like proton radiations $(p^+ \to \nu_e^-)$ antineutrinos, we are talking about radiations of antimatter matter and vice versa. That is: $(p_8^+ \to p_6^-)$, $(p_6^- \to p_4^+)$, $(p_4^+ \to p_2^-)$, $(p_2^- \to p^+)$, with the corresponding atomic nucleus: (p^+/e^-) substances of an ordinary atom, (p_2^-/e_2^+) antimatter of the nucleus of a "stellar atom", (p_4^+/e_4^-) the matter of the galaxy nucleus, (p_6^-/e_6^+) the antimatter of the quasar nucleus, and (p_8^+/e_8^-) the matter of the nucleus of the "quasar galaxy".

Further, we proceed from the fact that the quantum (e_{*1}^-) of matter $(Y- = p_1^-/n_1^- = e_{*1}^-)$ of the nucleus of planets emits a quantum $(e_{*1}^+ = 2 * \alpha * (p_1^- = 1{,}532E7\ MeV)) = 223591 MeV$, or: $e_{*1}^+ = \frac{223591 MeV}{p = 938{,}28 MeV} = 238{,}3 * p$, Uranium nuclei. This «antimatter» $(e_*^+ = {}^{238}_{92}U = Y-)$ is unstable, and exothermically decays into a spectrum of atoms, in the nucleus of planets.

In the superluminal level $w_i(\alpha^{-N}(\gamma = c))$ of the physical vacuum, such stars do not manifest themselves. Further, we are talking about the substance $(p_3^+ \to p_1^-)$ of the nucleus $(Y- = p_3^+/n_3^0 = e_{*3}^+)$ of "black spheres", around which, in their gravitational field, globular clusters of stars form. Similarly, below, we are talking about radiation of antimatter by matter and vice versa: $(p_6^+ \to p_5^-)$, $(p_5^- \to p_3^+)$, $(p_3^+ \to p_1^-)$, $(p_1^- \to \nu_\mu^+)$. The general sequence is: $p_8^+, p_7^+, p_6^-, p_5^-, p_4^+, p_3^+, p_2^-, p_1^-, p^+, \nu_\mu^+, \nu_e^-$ ....

Further: $\text{НОЛ} = M(e_4 = 1{,}15\ \text{E}16\ )(k = 3.13) M(\gamma_2 = 2{,}78\ \text{E} - 17\ ) = 1$. These quanta (p_4/e_4) of galactic nuclei are surrounded by individually emitted quanta (p_2/e_2) of stellar nuclei, and are the reason for their formation. Such nuclei of galaxies, in the equations of quantum gravity, have spiral arms of mass trajectories narrower: $w_i(\gamma_2 = \alpha^{-1}\text{c}) = 137 * \text{c}$, in superluminal velocity space. Below the energy $(w_i = 137 * \text{c})$ of light photons in the physical vacuum, galaxies do not manifest themselves. Outside galaxies, we are talking about nucleus quanta $(Y- = p_5^-/n_5^- = e_{*5}^-)$ of mega stars. They generate $(e_{*5}^- = 2 * \alpha * p_5^- = e_{*4}^+ = 290 p_4^+)$ set of galactic nucleus quanta. Similarly next: $\text{НОЛ} = M(e_6 = 6{,}48\ \text{E}23\ )(k = 3.83) M(\gamma_4 = 4{,}03\ \text{E} - 25\ ) = 1$. We are talking about quanta $(Y- = p_6^-/n_6^- = e_{*6}^-)$ of the nucleus of quasars, which also individually emit (p_4/e_4) quanta of the nucleus of galaxies. In other words, the nucleus of a quasar is surrounded by quanta of the nucleus of a galaxy. They say that the quasar is at the center of the galaxy. Such quasars plunge into the physical vacuum level up to superluminal speeds $w_i(\gamma_4 = \alpha^{-2}c) = (137^2 * c)$. This is deeper than the physical vacuum level of the galaxy. These are completely different objects. In other words, quasars bend space-matter at the level of ⟦(γ⟧_4) quanta. Further, we are talking about quanta of matter of the nucleus

$(Y- = p_7^+/n_7 = e_{*7}^+)$ of "black spheres", around which clusters of galaxies form in their gravitational field, and Further: $НОЛ = M(e_8 = 4{,}47\ E31)(k = 3.14)M(\gamma_6 = 7{,}13\ E-33) = 1$. We are talking about quanta (p_8/e_8) of the nucleus of quasar galaxies, which also individually emit quanta $(p_6^-/n_6^- = e_{*6}^-)$ of the nucleus of quasars. Such quasar galaxies plunge into the physical vacuum level up to superluminal speeds $w_i(\gamma_6 = \alpha^{-3}c) = 137^3 * c$. Similarly next.

In the axioms $НОЛ = КЭ(m)КЭ(n) = 1$, or $M_j(X+) * M_i(Y-) = 1$, dynamic space-matter, we are talking about the source of gravity of the gravitational mass $M_j(X+)$ in $ОЛ_j$ levels and inertial $M_i(Y-)$ masses in в $ОЛ_i$ levels of the physical vacuum, with their Einstein equivalence principle in a single gravitational $(X+ = Y-)$ mass field. These masses: $M_j * M_i = (M = ПК)^2 = 1$, in the form of a quadratic form, are represented in the quantum fields of their interaction:

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

in quantum: $G(X+)\left[\frac{K}{T^2}\right] = \psi\frac{\hbar}{П^2\lambda}G\frac{\partial}{\partial t}grad_n Rg_{ik}(X+)\left[\frac{K}{T^2}\right]$, gravity$(X+ = Y-)$mass fields. Thus, the limiting mass $M_j(X+)$ of the source of gravity is determined by $M_i(Y-)$ inertial mass of mass $(Y- = \gamma_i)$ fields in $ОЛ_i$ levels of the physical vacuum, as an object $ОЛ_{ji}(n)$ of convergence or:
$НОЛ = ОЛ_{ji}(n) = M_j(X+) * M_i(Y- = \gamma_i) = 1$. Thus, we obtain the limiting masses in the Universe: for example, for a star $M_j(X+) = M_2(p_2^-/n_2^0) = 1/(\gamma)$ under the conditions $(e_2^+ * (k) * \gamma) = 1$. Similarly: Limit mass of planets, for $1MeV = 1.78 * 10^{-27}g$: $\frac{1}{\gamma_0} = \frac{1}{3.13*10^{-5}MeV*1.78*10^{-27}g} = M_1(p_1^-/n_1^-) \approx 1.8 * 10^{31}g \approx \frac{M_S}{100}$, where$(M_s = 2 * 10^{33}g)$ is the mass of the Sun. Further, the limiting mass of stars, with a nucleus of antimatter:
$\frac{1}{\gamma} = \frac{1}{9.07*10^{-9}MeV*1.78*10^{-27}g} = M_2(p_2^-/n_2^-) \approx 6.2 * 10^{34}g \approx 31M_s$, or ranging from $\frac{M_S}{100}$ to $31M_S$ mass.

Similarly, the limiting mass $(p_3^+/n_3^0 = e_{*3}^+)$ of "black spheres", with a nucleus of matter:
$\frac{1}{\gamma_1} = \frac{1}{4.5*10^{-13}MeV*1.78*10^{-27}g} = M_3(p_3^+/n_3^0) \approx 1.25 * 10^{39}g \approx 625220M_s$, from $31M_s$ to $625220M_s$ mass.
limiting mass of a galaxy, $(p_4^+/n_4^0 = e_{*4}^+)$ with a nucleus of matter:
$\frac{1}{\gamma_2} = \frac{1}{2.78*10^{-17}MeV*1.78*10^{-27}g} = M_4(p_4^+/n_4^0) \approx 2 * 10^{43}g \approx 10^{10}M_s$, from $625220M_s$ to $10^{10}M_s$ mass.
limiting mass of an extragalactic mega star, $(p_5^-/n_5^- = e_{*5}^-)$ with an antimatter nucleus:
$\frac{1}{\gamma_3} = \frac{1}{8.05*10^{-21}MeV*1.78*10^{-27}g} = M_5(p_5^-/n_5^-) \approx 7 * 10^{46}g \approx 3{,}5 * 10^{13}M_s$, from $10^{10}M_s$ to $3{,}5 * 10^{13}M_s$ mass.
limiting mass of an extragalactic mega star, $(p_6^-/n_6^- = e_{*6}^-)$ with an antimatter nucleus:
$\frac{1}{\gamma_4} = \frac{1}{4.03*10^{-25}MeV*1.78*10^{-27}g} = M_6(p_6^-/n_6^-) \approx 1{,}4 * 10^{51}g \approx 7 * 10^{17}M_s$, from $3{,}5 * 10^{13}M_s$ to $7 * 10^{17}M_s$ mass.
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Each kernel of such objects $ОЛ_{ji}(n)$ of convergence generates a set of corresponding quanta $(2 * \alpha * p_j^{\pm} = e_{*j}^{\mp} = N\, p_{j-1}^{\mp})$ specified in table, and emits $(p_j^{\pm} \to p_{j-2}^{\mp})$. This is a set (N) of quanta of the nucleus of planets, stars, galaxies, quasars…. For example, the nucleus of the Sun, like a star, emits hydrogen nuclei $(p_2^- \to p^+ \to \nu_e^-)$ and electron antineutrino, but generates $(2 * \alpha * p_2^- = e_{*2}^+ = N\, p_1^+)$ quanta of, shall we say, "stellar matter" (p_1^+/e_1^-) in the solid surface of a star. This "stellar matter" (p_1^+/e_1^-) cannot interact with hydrogen (p^+/e^-) , but it can emit muonic antineutrino $(p_1^+ \to \nu_\mu^-)$, and positron, which forms muons, which in decay give: (e^+) positrons: $(Y\pm = \mu) = (X- = \nu_\mu^-)(Y+ = e^+)(X- = \nu_e^-)$, in the Earth's atmosphere. Or, the nucleus quanta of a mega star with $(p_5^-/n_5^- = e_{*5}^-)$ emit $(p_5^- \to p_3^+)$ matter quanta, but generate nucleus quanta $(2 * \alpha * p_5^- = e_{*5}^+ = N\, p_4^+)$ galaxies. We see, as it were, the "surface" of the galaxy, but the nucleus of such an object $ОЛ_{ji}(n)$ convergence, has a mass ranging from $(10^{10}M_s)$ to $(3.5 * 10^{13}M_s)$ solar masses.

We are talking about admissible objects $ОЛ_{ji}(n)$ of convergence, in the dynamic space-matter of the Universe. At the same time, the calculated causal relationships are indicated.

5. Intergalactic spacecraft without fuel engines.

The physical reality is the different space of the velocities of the Sun and the Earth. Without any fuel engines, the Earth flies in the space of the physical vacuum at a speed of $30 км/с$, and the Sun at a speed of the order of $265 км/с$. We are talking about the main property of space-matter - movement. The mass flow $(Y-)_A$ of the apparatus is created by the fields of Strong and Gravitational Interaction of energy quanta $(X\pm = p_1)$, $(X\pm = p_2)$,

$ОЛ_2$ the level of indivisible quanta of the space-matter of the physical vacuum, interconnected by the same $(X+)$ fields on the trajectories $(X-)$ of the module, without an external energy source.

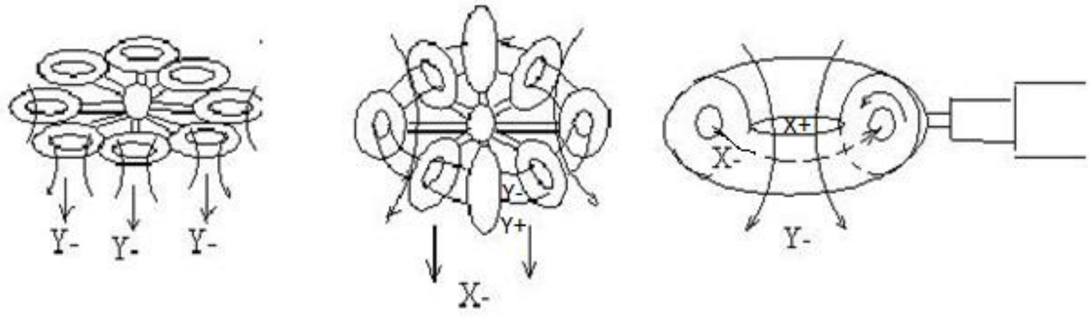

Fig.9. Intergalactic spacecraft without fuel engines.

Consistently including the space of velocities, the apparatus $(Y-)_A$, $(X-)_A$ in the level of the singularity of the physical vacuum, the apparatus goes along the radial trajectory from the level of the singularity of the physical vacuum of the quantum $(X\pm)$ of the space-matter of the planet, $(Y\pm)$ the space-matter of the star , $(X\pm)$ the space-matter of the galaxy, $(Y\pm)$ the space-matter of the cluster of galaxies, to other clusters and galaxies in field of the Universe, with reverse inclusions when returning to the planet of one's own or another galaxy. Thus, to create mass fields $(Y-=\gamma_i)_A$, space of velocities, it is necessary to use fields $(Y-)_A=(X+=p_j)+(X+=p_j)$ of "heavy" quanta as "working substance" closed on $(X-)$ the trajectory of the "ring" of the device, in the conditions of $НОЛ=(e_j)(k)(\gamma_i)=1$, Indivisible Area of Localization. These are the conditions in the quantum coordinate system when the quantum (e_j) does not manifest itself below the energy level (γ_i) of physical vacuum quanta. These levels correspond to:

$НОЛ=M(e_1)(k=3.13)m(\gamma_0)=1$	$НОЛ=\sqrt{G}M(p_1)(k=1.8)\sqrt{G}m(\nu_\mu)=1$
$НОЛ=M(e_2)(k=3.13)m(\gamma)=1$	$НОЛ=\sqrt{G}M(p_2)(k=1.7)\sqrt{G}m(\nu_e)=1$
$НОЛ=M(e_3)(k=3.86)m(\gamma_1)=1$	$НОЛ=\sqrt{G}M(p_3)(k=17)\sqrt{G}m(\nu_1)=1$
$НОЛ=M(e_4)(k=3.13)m(\gamma_2)=1$	$НОЛ=\sqrt{G}M(p_4)(k=1.8)\sqrt{G}m(\nu_2)=1$
$НОЛ=M(e_5)(k=3.15)m(\gamma_3)=1$	$НОЛ=\sqrt{G}M(p_5)(k=1.8)\sqrt{G}m(\nu_3)=1$
$НОЛ=M(e_6)(k=3.9)m(\gamma_4)=1$	$НОЛ=\sqrt{G}M(p_6)(k=18.9)\sqrt{G}m(\nu_4)=1$
....	....
$НОЛ=M(e_{26})(k=3.14)m(\gamma_{24})=1$	$НОЛ=\sqrt{G}M(p_{25})(k=1.8)\sqrt{G}m(\nu_{23})=1$

We are talking about the quantum coordinate system $ОЛ_{ji}(m-n)$ in the space-matter of the Universe, in each $ОЛ_j$or $ОЛ_i$ level there are three $(X-=Y+)$ charge and two $(X-=Y+)$ mass isopotential. And in this quantum coordinate system, "heavy" (p_j/e_j) quanta are represented, each of which has its own "depth" of energy levels $(\nu_1/\gamma_i)$of physical vacuum quanta. Let's represent them as models of such $R_{ji}(m)$ Indivisible Regions of space – matter of the Universe.

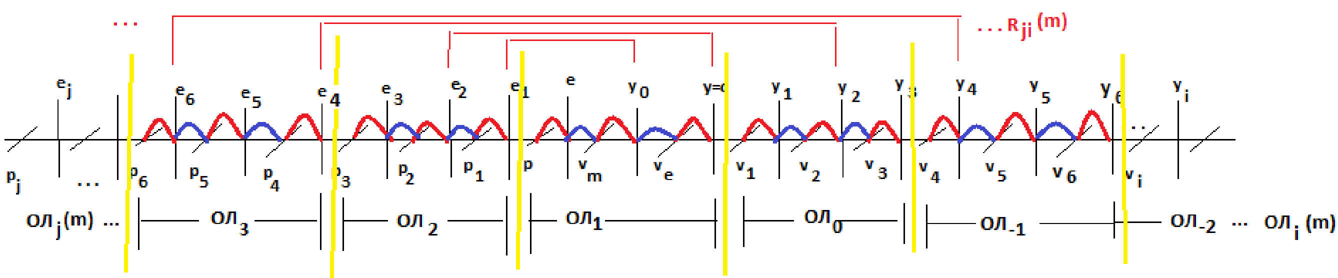

Fig.10.2. spectrum of indivisible quanta

This is a certain sphere in the space-matter, in the center of which are "heavy" (p_j/e_j) quanta, which determine the "bottom", and "up" along the radius, to the level (ν_i/γ_i) of physical vacuum quanta space-matter of the Universe, for any similar object inside this sphere. These are spheres around a planet, a star, a galaxy, a quasar…. On the example of quants:

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

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

we are talking about the synthesis of matter $(X \pm = p_1^+)$, on colliding beams $(e^+e^+ \to p_1^+)$ of positrons with virtual quanta (ν_μ^-), and $(Y \pm = e_2^-)$ on colliding beams $(p^-p^- \to e_2^-)$ of antiprotons of positrons with virtual quanta (e^+), similar to an electron $(e^- = \nu_e^-\gamma^+\nu_e^-)$. We can also talk about the sequential synthesis of "heavy" (p_j/e_j) quanta, namely, substances $(X\pm = p_j^+)$, for $(Y-)_A$, $(X-)_A$ apparatus, in individual processes.

$(\ldots \leftarrow p_6^+ \leftarrow e_5^+ \leftarrow p_3^+ \leftarrow e_2^+ \leftarrow p^+)$ and $(\ldots \leftarrow p_7^+ \leftarrow e_6^+ \leftarrow p_4^+ \leftarrow e_3^+ \leftarrow p_1^+ \leftarrow e^+)$synthesis. It is essential that the electron (e^-) emits and absorbs the photon (γ^+) , but it cannot emit and absorb the “dark” photon (γ_0). This "dark" photon is emitted and absorbed by the "heavy" electron $(e_1) \to (\gamma_0\ )$. Similarly, the "heavy" proton $(p_1) \to (\nu_\mu\ )$ emits and absorbs the muon neutrino. These are invisible quanta, not interacting, and non-contact with quanta (p^+/e^-) of the atoms of the periodic table. We can neither see nor fix them. But these invisible quanta (blue color in the indicated sequences) have charge isopotentials and can form Structural Forms not visible to us, similar to ordinary (p^+/e^-) atoms. These are: structures $(\nu_\mu\ /\gamma_0)$,$(\ p_1/e_1)\ldots$ This is how we gradually master the potentials of the core of planets, the core of stars, the core of galaxies and the core of quasars. But for the $(Y-)_A$ apparatus, we can form only contact quanta (p_4^+) of the galactic nuclei and quanta $(p_6^+)$of the substance of the quasar nucleus. And the apparatus itself $(Y-)_A$, sequentially "plunges" into the physical vacuum, as: $НОЛ = (e_4\ )(k)(\ \gamma_2\ ) = 1$, $НОЛ = (e_6\ )(k)(\ \gamma_4\ ) = 1$, and superluminal $(\gamma_2\ = 137 * c\ )$, и $(\gamma_4\ = 137^2 * c\ )$velocity spaces.This is how we gradually master the potentials of the nucleus of planets, the nucleus of stars, the nucleus of galaxies and the nucleus of quasars. At the same time, the device itself $(Y-)_A$, sequentially "plunges" into the physical vacuum, as: $НОЛ = (e_2\ )(k)(\gamma\ ) = 1$, $НОЛ = (e_4\ )(k)(\ \gamma_2\ ) = 1$, $НОЛ = (e_6\ )(k)(\ \gamma_4\ ) = 1\ \ldots$, light (γ=c) and superluminal $(\gamma_2\ = 137 * c\ )$, $(\gamma_4\ = 137^2 * c\ )$ velocity space. These are quite admissible in the Special $\overline{W_Y} = \frac{c+Nc}{1+c*Nc/c^2} = c,$ and in the Quantum $\overline{W_Y} = \frac{a_{11}Nc+c}{a_{22}+Nc/c} =$ c, Theories of Relativity in Euclidean $a_{ii} = \cos(\varphi = 0)$, $a_{11} = a_{22} = 1,$ angles of parallelism. The $(Y-)_A$ apparatus itself moves in the specified sphere of the space-matter of the Universe, in different levels of physical vacuum. It is worth noting that the volume of space-matter of a star is “immersed” in the space of velocities $(\gamma = c\ )$, the volume of galaxies is “immersed” in the space of velocities $(\gamma_2\ = 137 * c\ )$, the volume of quasars is “immersed” in space $(\gamma_4\ = 137^2 * c\ )$ are already superluminal speeds. The apparatus represented by $(Y-)_A$ moves in the specified sphere, in the space of velocities $(\gamma_2\ = 137 * c\ )$ of the galaxy nucleus, or $(\gamma_4\ = 137^2 * c\ )$ of the quasar nucleus. The question is, how does the crew feel in the central capsule of the apparatus, in the superluminal space of speeds? Just like the Earth, being in the sphere of the space-matter of the star, the Sun, does not feel 265 km / s of the speed of the Sun (read apparatus) in the space-matter of the Galaxy. Capsule with crew, covered with material and fields $(Y-)_A$ of the vehicle. The capsule moves to another $(ОЛ)_j$ level. In the indicated spheres $R_{ji}(m)$ of Indivisible Regions, spheres of space - matter, speeds $p_je_j(m)$ quanta $w_j(p_je_j) * v_i(\nu_i\gamma_i) = c^2$, because $w_j = \alpha^{+N} * c)(v_i = \alpha^{-N} * c) = c^2$. And these speeds (N=j=1,2,3…), $w_j(p_je_j) = (\alpha = \frac{1}{137})^{+N} * c \to 0$, in the very center $(Y-\ )_A$ apparatus. Such properties of space-matter.

Now let's consider the real physical properties of the quantum $(Y-= \frac{p^+}{n})$ of the Strong Interaction of the ordinary nucleus $ОЛ_1(p, e, \nu_\mu^-, \nu_e^-, \gamma)$ of the physical vacuum level. Its mass (Y-) trajectories are formed by gravity (X+ =Y-) mass fields of two protons (X+ =p)(X+ =p)=(Y-), in atomic mass units: $(Y-= \frac{\alpha * p^+}{931{,}5\ MeV} = \frac{938{,}28\ MeV}{137{,}036*931{,}5\ MeV} = 0{,}0073aem)$, for a proton with mass: $m(p) = 1aum + \frac{\alpha p}{931{,}5\ MeV}aum = 1{,}0073\ aum$. At the same time, we understand that and energy $E(1aum) = mc^2 = 1.6604 * 10^{-27} * (2{,}997924 * 10^8)^2 * (1Дж = 6.2422 * 10^{18}eV) = 931.5MeV$

$1aem = \frac{m(^{12}_{6}C)}{12} = 1.6604 * 10^{-27}kg$. We are talking about inductive mass (Y-), in the equation $rot_yG(X+) = -\frac{\partial M(Y-)}{\partial T}$ of dynamics. This is exactly how the mass $(Y-)_A$ apparatus trajectories are formed, by "heavy" quanta $(Y-= Np_j^+)_A$, on (X-) trajectories of a closed ring, in different levels of the physical vacuum, in the superluminal velocity space. (X-) trajectories of a closed ring, in fact, a vortex field of dynamic equations: $rot_YG(X+) = -\frac{\partial M(Y-)}{\partial T}$, similar to induction $rot_XE(Y+) = -\frac{\partial B(X-)}{\partial T}$, of the magnetic field of the coil. There are several such (X-) “coil turns” in $(Y-)_A$ apparatus to increase the density $\rho(Y-) = \frac{\partial M(Y-)}{\partial T}\left[\frac{1}{T^2} = \frac{m=K^3/T^2}{V=K^3}\right]$ mass $(Y-)_A$ vehicle trajectories. Thus, it is necessary to create full periods of quanta $(Y-=\gamma_i)_A$, the space of velocities by the fields $(Y-)_A = (X+ = p_j) + (X+ = p_j)$ of "heavy" quanta as a "working substance", closed on the trajectory (X-) of the "ring" of the apparatus with Indivisible Localization Area $НОЛ = (e_j)k(\gamma_i) = 1$. From the ratios for quanta, $T_J(X-=p_J) \to \infty$, $\lambda_J(X-=p_J) \to \infty$, the greater the quantum mass $(X-=p_J)$ formed $(p_j=2(e_{j-1})/G)$ by quanta (e_{j-1}), the greater $\lambda_J(X-=p_J)$, the greater the diameter of the "ring" D of the device. For ratios $(E=\Pi^2 K_X)(X-)(E=\Pi^2 K_Y)(X+)=НОЛ(X\pm=p_J)$, there are ratios $\uparrow E(X-)\downarrow E(X+)=НОЛ(X\pm=p_J)$, or $\uparrow K_X(X-)K_Y\downarrow(X+)=НОЛ(X\pm=p_J)$, as well as for masses $\uparrow(m=\Pi K_X)(X-)(m=\Pi K_Y)\downarrow(X+)=НОЛ(X\pm=p_J)$. The entire mass is concentrated in the field $(X-=p_J)$ formed by the electric fields $(X-=p_J)=(Y+=e_{J-1})(Y+=e_{J-1})$ of mass $(Y-=e_{J-1})$ trajectories, in the form $m(X-=p_j)=2m(Y-=e_{j-1})/G)$ of mass fields. It means that in the created quanta $НОЛ=\lambda(Y+=e_{J-1})\lambda(Y-=e_{J-1})=1$ it is enough to know the wavelength $\lambda(Y+=e_{J-1})=\dfrac{1}{\lambda(Y-=e_{J-1})}$, to calculate the order of the quanta $N(e_J)$ that form the trajectory of the "working substance" quanta $(X-=p_j)$.

For example, if for you need a "ring" of diameter , $D=\dfrac{2\lambda(X-=p_J)}{(\pi\approx 3)}$, $D=10м$, then $\lambda(X-=p_J)=15м=\lambda(Y+=e_{J-1})$. That is, there is a quantum $\lambda(Y-=e_{J-1})=\dfrac{1}{\lambda(Y+=e_{J-1})}=6{,}67*10^{-3}см$ length . This corresponds to the relations $\lambda(Y-=e_{J-1})=6{,}67*10^{-3}см=2\pi*\alpha^N(\lambda_e=3.3*10^{-8}см)$, whence $\alpha^N=2*10^{-5}$, for $(J-1)$ gives $N=\log_\alpha 2*10^{-5}=\dfrac{\ln(2*10^{-5})}{\ln(\alpha=1/137)}=\dfrac{-10{,}82}{-4{,}92}=2.2\approx 2$. Then $(N_j=3)$ corresponds to the order of quanta $(\alpha^3*\mathrm{c})=W(\mathrm{e}_4)$ of the working substance $(X-=p_4^+)$, in a "ring" with a diameter of 10m. Such "rings" give an intergalactic apparatus. The speed of an intergalactic apparatus with such a "working substance" $(X-=p_4^+)$, at the singularity level $НОЛ=m(e_4)*m(\gamma_2)=1$, is $V(Y-=\gamma_2)=\alpha^{-1}*c\approx 137*c$. For Earth time of 10 years, you can fly $(r=10лет*\alpha^{-1}*c)км$ or $(r=10*365{,}25*24*3600*137*3*10^5=1{,}3*10^{16}км=8{,}8*10^7\,а.е=425{,}8пк$. That is, our galaxy (30 kpc), the device will fly by in about 705 years. For the crew of such a vehicle, the proper time is $T=\alpha(705лет)=5{,}14лет$, the singularity (γ_2) level time. The greater the mass of the quantum (p_j), the greater the length of its "wave" $\lambda(X-=p_j)$. For $(N_J=4)$ quasar nucleus matter $(X-=p_6^+)$ quanta, have $(N_{J-1}=3)$. Then from the relation $2\pi*\alpha^N(\lambda_e)=\lambda(Y-=e_{J-1=3})=6{,}28*(1/137)^3*3.3*10^{-9}см=8{,}14*10^{-15}см$, and we calculate
$$\lambda(Y+=e_{J-1=5})=\frac{1}{\lambda(Y-=e_{J-1})}=\frac{1}{8{,}14*10^{-15}см}=1{,}23*10^{14}см=\lambda(X-=p_6^+)$$
. This is $1{,}2*10^{14}см\approx 10^9км=8{,}2\ \ а.е.$ the diameter of the nucleus $(X-=p_6^+)$ of an extragalactic quasar with nucleus quanta. The "working substance" of such quanta $НОЛ=m(e_4)*m(\gamma_2)=1$ is given by flights already outside the galaxies in the Universe. For 10 years of Earth time, you can fly in the Universe, $(r=10лет*(V(\gamma_4)=\alpha^{-2}*c)=1{,}78*10^{18}км$ or 183 500 light years. For own time $t=\alpha^2(10лет)$ in the device or 4 hours 40 minutes. This is the time for $(Y-=\gamma_4)$ quanta, in the intergalactic level of the singularity of the physical vacuum.

Literature.

1. Mathematical encyclopedia, Moscow, "Nauka", 1975
2. (BKF) Berkeley Physics Course. V.4, "Quantum physics", Science, 1986
3. V. Pauli, "Theory of Relativity", Moscow, "Nauka", 1991
4. Landau, Lifshitz, "Theoretical physics. Quantum mechanics", v.3, "Science", 1989
5. P.A. Dirac, "Memories of an Extraordinary Epoch", Moscow, "Nauka", 1990
6. N.F. Nelipa, "Physics of elementary particles. Gauge fields", Moscow, "Higher School", 1985

7. Maurice Klein, “Mathematics. Loss of certainty”, Moscow, ed. "Mir", 1984
8. G. Korn, T. Korn, "Handbook of Mathematics", Moscow, "Nauka", 1974
9. A. Naumov, "Physics of the nucleus and elementary particles", "Prosveshchenie", 1984
10. A. Pais, "Scientific activity and life of Albert Einstein", Moscow, "Nauka", 1989.
11. V. Smirnov, "Course of Higher Mathematics", v.1, p.186. Moscow, "Science". 1965, v.3, part 1, 1967
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