

GALACTIC SYSTEM OF MEASURES

© V.N. Poljansky & I.V. Poljansky, 2008

In previous article http://vlamir43.narod.ru/How_estimate_speed_of_light_e.pdf we have started working out of new system of measures. We will remind, by what principle ten base units of measure of physical sizes have been formed.

As a real physical object for readout we took atom of hydrogen, and for pre-assigning of new unit of length have chosen radius of a hydrogen polytron which as we consider, coincides with radius of ring model of electron. Diameter of a hydrogen polytron is equal

$$D_s = 197.714 \times 10^{-12} \text{ |m|}, \text{ radius, accordingly, } R_e = 98.857 \times 10^{-12} \text{ |m|}.$$

The name and designation of new unit of length is – **radik |rk|**.

$$1 \text{ radik |rk|} = 98.857 \times 10^{-12} \text{ |m|}.$$

The angular unit of measure **1 radian |rn |** remains without changes.

For a unit of measure of time we accept time during which one turn on a ring of radius **1rk** with speed of light **c** is made: **1 mig |mg|** = $2.071889513351 \times 10^{-20}$ |s|.

Thus, numerical value of a speed of light in new units becomes equal 2π and coincides with angular speed or cyclic frequency.

$$\begin{aligned} c_e &= 2\pi \text{ |rk|} \times \text{|mg}^{-1}\text{|} \\ \omega_e &= 2\pi \text{ |rn|} \times \text{|mg}^{-1}\text{|} \end{aligned}$$

At research of laws of the nature we actually measure only three parametres – force, length and time. Units of measure of all other parametres of natural processes, anyhow, are derivative of three above-named.

For definition of a unit of measure of force we will take advantage Planck's constant for what at first we will open structure of this universal quantum of action:

$$h = 6.62606876 \times 10^{-34} \text{ |J|} \times \text{|s|} \rightarrow \text{|N|} \times \text{|m|} \times \text{|s|}$$

From here follows, that for reception of a unit of measure of force it is necessary Planck's constant to divide into value of a new linear measure in meters and into value of a new measure of time in seconds. As the name of a new measure of force we use an obsolete dynes, but we will change its sex with female to the man's:

$$1 \text{ din |dn|} = 3.23505686656865 \times 10^{-4} \text{ |N|}$$

New unit of mechanical energy (work) is formed by standard way:

$$1 \text{ job |jb|} = 1 \text{ din |dn|} \times 1 \text{ radik |rk|} = 3.198080 \times 10^{-14} \text{ |J|}$$

And, at last, for the sake of celebration of historical justice we will enter into composition of base units of measure Planck's quantum of action and we name it as **1 planck |pk |**:

$$h_e = 1 \text{ |pk|} = 1 \text{ |jb|} \times 1 \text{ |mg|} = 1 \text{ |dn|} \times 1 \text{ |rk|} \times 1 \text{ |mg|}$$

As natural units of measure of an electric charge we take positive and negative elementary charges, i.e. a positron and electron:

$$1 \text{ positron |pn|} = -1 \text{ electron |en|} = 1.602176462 \times 10^{-19} \text{ |C|}$$

For definition of units of measure of magnetic stream the elementary magnetic stream (or quantum of magnetic stream) is used:

$$\Phi_0 = \frac{h}{2 \cdot q_e} = 2.067833636 \times 10^{-15} \text{ |Wb|}$$

Using the resulted formula, we will define two units of measure of an elementary magnetic stream – positive **teslatron |tn |** and negative **negatron |nn|**:

$$1 \text{ |tn|} = 1 \text{ |pk|} \times [1 \text{ |pn|} - 1 \text{ |en|}]^{-1} \text{ – Direction of a stream from south pole of the Earth;}$$

$$1 \text{ |nn|} = 1 \text{ |pk|} \times [1 \text{ |en|} - 1 \text{ |pn|}]^{-1} \text{ – Direction of a stream from northern pole of the Earth.}$$

Other physical sizes entered into new system of measures, are derivative from ten bases. For definition of electric and magnetic units of measure we will count some variants of energetic electric and magnetic interaction between bodies of the various shapes.

The formula for force of interaction between two equal dot charges carried on distance z from each other:

$$F_e(z) = \frac{1}{10^7} \cdot \left(\frac{c \cdot q_e}{z} \right)^2 |N| \quad (1)$$

The formula for force of interaction between two charged rings in radius R_e carried on distance z from each other (the thickness of rings is accepted zero):

$$F_o(z) = \frac{(q_e \cdot c)^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e} \right) d\varphi}{\left[\left(\frac{z}{2 \cdot R_e} \right)^2 + \cos^2 \left(\frac{\varphi}{2} \right) \right]^{\frac{3}{2}}} |N| \quad (2)$$

Besides, we will write down two experimentally verified formulas for pressure calculation p_e on facings of the flat capacitor and pressure p_h on a surface of poles in a small air gap of a constant toroidal magnet:

$$p_e = \frac{\sigma_e^2}{\varepsilon_0} = \varepsilon_0 \cdot E^2 = \varepsilon_0 \cdot \left(\frac{U_e}{z} \right)^2 = \left(\frac{10^7}{4 \cdot \pi \cdot c^2} \right) \cdot \left(\frac{U_e}{z} \right)^2 |N| \times |m^{-2}| \quad (3)$$

$$p_h = \frac{\sigma_h^2}{\mu_0} = \mu_0 \cdot H^2 = \mu_0 \cdot \left(\frac{U_h}{z} \right)^2 = \left(\frac{4 \cdot \pi}{10^7} \right) \cdot \left(\frac{U_h}{z} \right)^2 |N| \times |m^{-2}| \quad (4)$$

In the above-stated formulas following designations are used:

$h = 6.62606876 \times 10^{-34} |J| \times |s|$ – Planck's constant;

$c = 299792458 |m/s|$ – speed of light in vacuum;

$q_e = 1.602176462 \times 10^{-19} |C|$ – elementary charge;

E – intensity of electric field between capacitor facings $|V/m|$;

H – intensity of magnetic field between planes of poles of magnet $|A/m|$;

U_e – electric voltage between capacitor facings $|V|$;

U_h – magnetic "pressure" between planes of poles of magnet $|A|$;

$\sigma_e |C/m^2|$ – superficial density of elementary electric charges (positrons and electrons) on opposite facings of the capacitor.

$\sigma_h |Wb/m^2|$ – superficial density of elementary magnetic quanta (teslatrons and negatrons) on opposite poles of a constant magnet.

In article "ELEMENTARY_CHARGE_IMPULSE"

http://vlamir43.narod.ru/ELEMENTARY_CHARGE_IMPULSE_e.pdf

we have entered for the first time definition for an elementary charging impulse, but did not specify area of its application.

$$\Phi_e = q_e \cdot c = 4.8032042 \times 10^{-11} |N^{1/2}| \times |m| \rightarrow |Wb| \quad (5)$$

Here, as it is possible to see in formulas (1) and (2), constant Φ_e is present, and it says that forces of electrostatic interaction are obliged to its appearance to this magnetic stream.

Then there is a question, – how forces of the most magnetic interaction are shown? Whether there is any intermediary for magnetic forces?

From article "FORMULA_FOR_SUPERCONDUCTIVITY"

http://vlamir43.narod.ru/FORMULA_FOR_SUPERCONDUCTIVITY_e.pdf

we take the formula for calculation of force of interaction between two ring currents and we will write down it with use of designations from the formula (2):

$$F_{qm}(z) = \frac{-(q_e \cdot N_i \cdot v_i)^2}{2 \cdot \pi \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) \cdot \left[1 - 2 \cdot \sin^2\left(\frac{\varphi}{2}\right)\right] d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad |\text{N}| \quad (6)$$

It is accepted to consider an electric current in the conductors having electric resistance as rather slow movement of charges with a speed on some orders is less than speed of light. Product of quantity of charges by speed of their movement is rather "flexible" mathematical expression. We can, for example, instead of N_i in the formula (6) to set $N_c = 1$, having changed speed v_i on value v_m .

Having executed corresponding transformations, and having accepted a condition, that in each ring one elementary charge moves only, we will receive the following formula for calculation of force of magnetic attraction between two ring currents:

$$F_{qm}(z) = \frac{-(q_e \cdot v_m)^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) \cdot \left[1 - 2 \cdot \sin^2\left(\frac{\varphi}{2}\right)\right] d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad |\text{N}| \quad (7)$$

The resultant force in the formula (7) consists of two items:

$$F_q(z) = \frac{-(q_e \cdot v_m)^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad |\text{N}| \quad (8)$$

and

$$F_m(z) = \frac{(q_e \cdot v_m)^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) \cdot \left[2 \cdot \sin^2\left(\frac{\varphi}{2}\right)\right] d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad |\text{N}| \quad (9)$$

For reduction of records we will enter designations for two integrals, one of which contains in formulas (2) and (8), and another – in the formula (9)

$$J_E = \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad (10)$$

$$J_H = \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e}\right) \cdot \left[2 \cdot \sin^2\left(\frac{\varphi}{2}\right)\right] d\varphi}{\left[\left(\frac{z}{2 \cdot R_e}\right)^2 + \cos^2\left(\frac{\varphi}{2}\right)\right]^{\frac{3}{2}}} \quad (11)$$

Summarizing (2), (8) and (9), taking into account designations (5), (10) and (11), we will write down a resultant the formula of electromagnetic interaction between two ring currents of elementary charges:

$$F(z, \varphi) = \frac{\Phi_e^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \left\{ \left[1 - \left(\frac{v_m}{c} \right)^2 \right] \cdot J_E + \left(\frac{v_m}{c} \right)^2 \cdot J_H \right\} \text{ [N]} \quad (12)$$

The qualitative analysis of the formula (12) leads to following conclusions:

1. In metals and semiconductors there is no movement of electrons and positrons (or holes), but there are the streams of short magnetic impulses jumping from atom to atom with frequency, depending on the applied electric field.
2. In vacuum such streams of impulses are observed as photons, and at electric breakdown, as streams of elementary charges.
3. At current excitation in rings by means of foreign forces, electrostatic a pushing away component decreases to proportionally increasing voltage failure on rings.
4. At $v_m = c$, that in relativistic treatment is understood as achievement by charge of speed of light, there comes a mode of superconductivity and the formula (12) becomes:

$$F_S(z, \varphi) = \frac{\Phi_e^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \int_0^{2\pi} \frac{\left(\frac{z}{2 \cdot R_e} \right) \cdot \left[2 \cdot \sin^2 \left(\frac{\varphi}{2} \right) \right] d\varphi}{\left[\left(\frac{z}{2 \cdot R_e} \right)^2 + \cos^2 \left(\frac{\varphi}{2} \right) \right]^{\frac{3}{2}}} \text{ [N]} \quad (13)$$

To receive real representation about forces of an attraction between ring currents in atom in a superconductivity mode, we will calculate under the formula (13) force of an attraction between rings at distance between them $z = 2R_e$ and average pressure upon the area of rings.

Calculation shows following values:

Force of an attraction – $F_S(2R_e) = 4.502 \times 10^{-9}$ [N];

Average pressure – $p_s(2R_e) = 146.6 \times 10^9$ [N] × [m⁻²];

It approximately 15 million tons on square meter.

Calculation of electrostatic forces of pushing away under the formula (2) gives smaller values:

Force of pushing away – $F_R(2R_e) = 3.558 \times 10^{-9}$ [N];

Average pressure – $p_r(2R_e) = 116.9 \times 10^9$ [N] × [m⁻²];

It approximately 12 million tons on square meter.

These impressing figures give some representation about mechanisms of enormous stability of atoms, but the considered model of intra-atomic forces by means of static modes demands addition in resonant parameters.

For clarity we will write down the formula (12) in a following kind:

$$F(z, \varphi) = \frac{1}{2} \cdot \left(\frac{4 \cdot \pi}{10^7} \right) \cdot \left(\frac{c}{2 \cdot \pi \cdot R_e} \right)^2 \cdot \left(\frac{q_e}{2} \right)^2 \cdot \left\{ \left[1 - \left(\frac{v_m}{c} \right)^2 \right] \cdot J_E + \left(\frac{v_m}{c} \right)^2 \cdot J_H \right\} \text{ [N]} \quad (14)$$

In such record in the formula (14) three constants – a magnetic constant of vacuum μ_0 (the first bracket), a square of basic frequency of circulation of energy in rings with speed of light $f_c = 4.826512 \times 10^{17}$ [Hz] (the second bracket) and a square of half of elementary charge or an square of amplitude (the third bracket) are accurately looked through. Last, the most difficult, the member of product reflects thermodynamic conditions in which there is an atom. The formula (14) on the one hand reminds the formula for energy of mechanical oscillatory process in which the magnetic constant plays a role of inert mass.

On the other hand – the formula (14) suits for alternating current modeling as frequency product by a charge represents a variable \(\text{alternating}\) electric current.

For the best understanding of processes of the force interaction occurring in atom, we will track these processes under schedules.

On fig. 1 schedules of functions under formulas (1), (2) and (13) are shown.

Обращают на себя внимание две особенности приведенных на графике функций:

1. At increase z functions $F_e(z)$, $F_O(z)$ and $F_S(z)$ aspire to identical value, thus values of functions $F_O(z)$ and $F_S(z)$ most quickly approach.

2. The area of parameters between functions $F_O(z)$ and $F_S(z)$ is the most exact for calculation of forces of interaction in atom whereas function $F_e(z)$, because of its simplicity, is more preferable to calculation of technical devices.

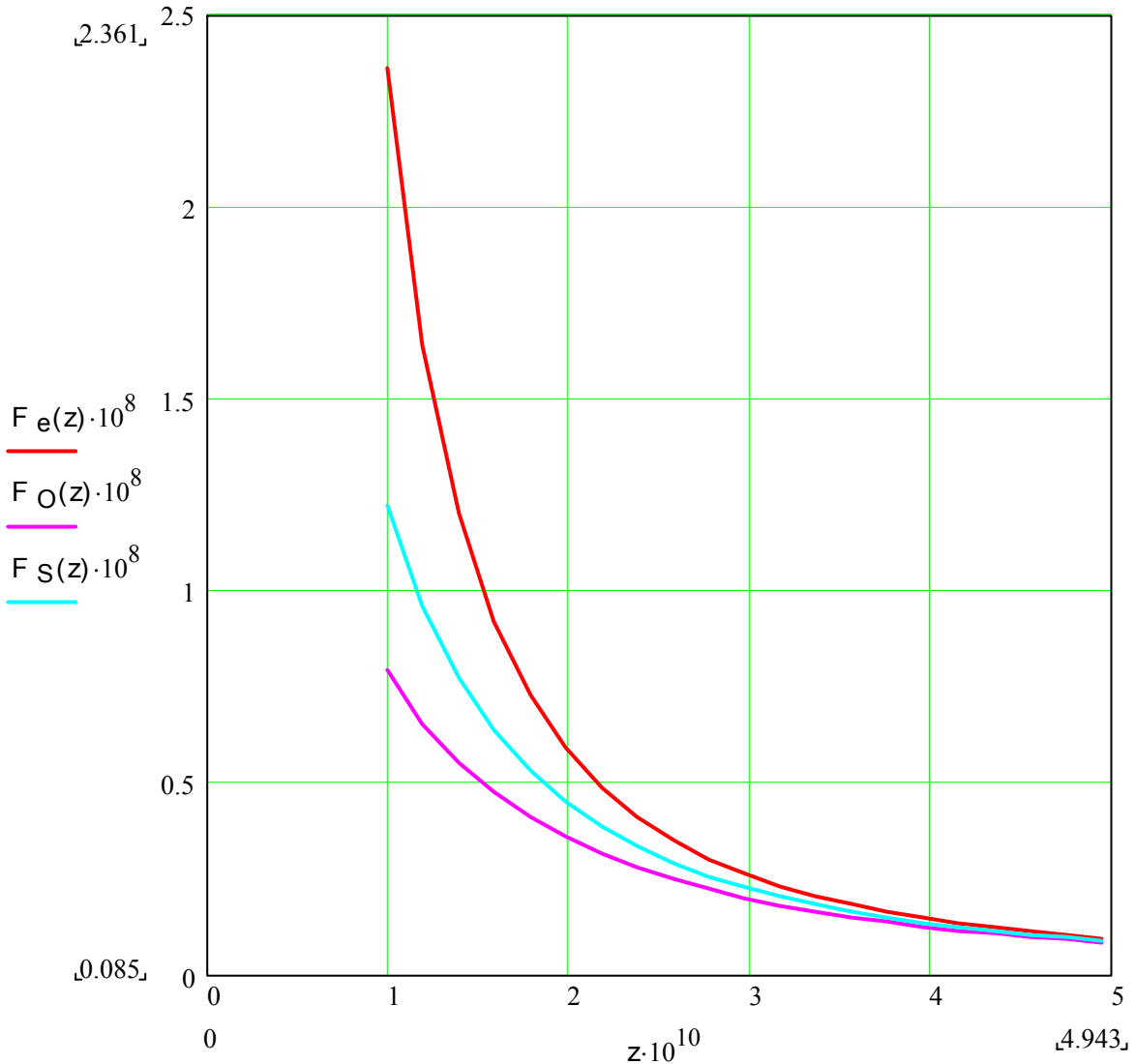


Fig. 1 Schedules of functions for electric and magnetic forces of interaction between charged bodies of the various form and ring currents.

The magnetic induction of a ring current in a coil plane has a minimum in the centre of a coil and increases with increase in distance from the coil centre to a line of a ring current. The formula of this dependence looks like:

$$B_S(a) = \frac{\mu_0 \cdot I_S}{4 \cdot \pi \cdot R_S} \cdot \int_0^{2\pi} \frac{[1 - a \cdot \cos(\varphi)] d\varphi}{[1 - 2 \cdot a \cdot \cos(\varphi) + a^2]^{\frac{3}{2}}} \quad |\text{Wb}| \times |\text{m}^{-2}| \rightarrow |\text{T}| \quad (15)$$

In the formula (15) relative size " a " represents the relation of true distance from the centre to ring radius $a = x/R_S$. As appears from the formula, at $x = R_S$ the integral converts in infinity and consequently expression is not meaningful.

Let's designate integral in the formula (15) by symbol J_B and we will copy it in more compact kind:

$$B_s(a) = \frac{\mu_0 \cdot I_s}{4 \cdot \pi \cdot R_s} \cdot J_B \text{ [Wb} \times \text{m}^{-2}] \quad (16)$$

The induction of a magnetic field of ring of current I_s is equal in the centre of a coil:

$$B_s(0) = \frac{\mu_0 \cdot I_s}{2 \cdot R_s} \text{ [Wb} \times \text{m}^{-2}] \quad (17)$$

The formula (16) gives the chance to us to isolate as a part of the formula (13) magnetic induction and to express it through other natural units of measure. We will write down the formula (13) in the approached to formula (16) kind:

$$F_s(z, \varphi) = \frac{\Phi_e}{4} \cdot \left[\left(\frac{\mu_0}{4 \cdot \pi \cdot R_e} \right) \cdot \left(\frac{q_e \cdot c}{2 \cdot \pi \cdot R_e} \right) \cdot J_B \right] \cdot J_H = \frac{\Phi_e}{4} \cdot B_e \cdot J_H \text{ [N]} \quad (18)$$

Hence, for a polytron the formula of a magnetic induction looks like:

$$B_p(a) = \left(\frac{\mu_0}{4 \cdot \pi \cdot R_e} \right) \cdot \left(\frac{q_e \cdot c}{2 \cdot \pi \cdot R_e} \right) \cdot J_B \text{ [Wb} \times \text{m}^{-2}] \rightarrow \text{[T]} \quad (19)$$

On fig. 2 three schedules – one experimental and two calculated which prove the chosen physical model for definition of a unit of measure of a magnetic induction are shown.

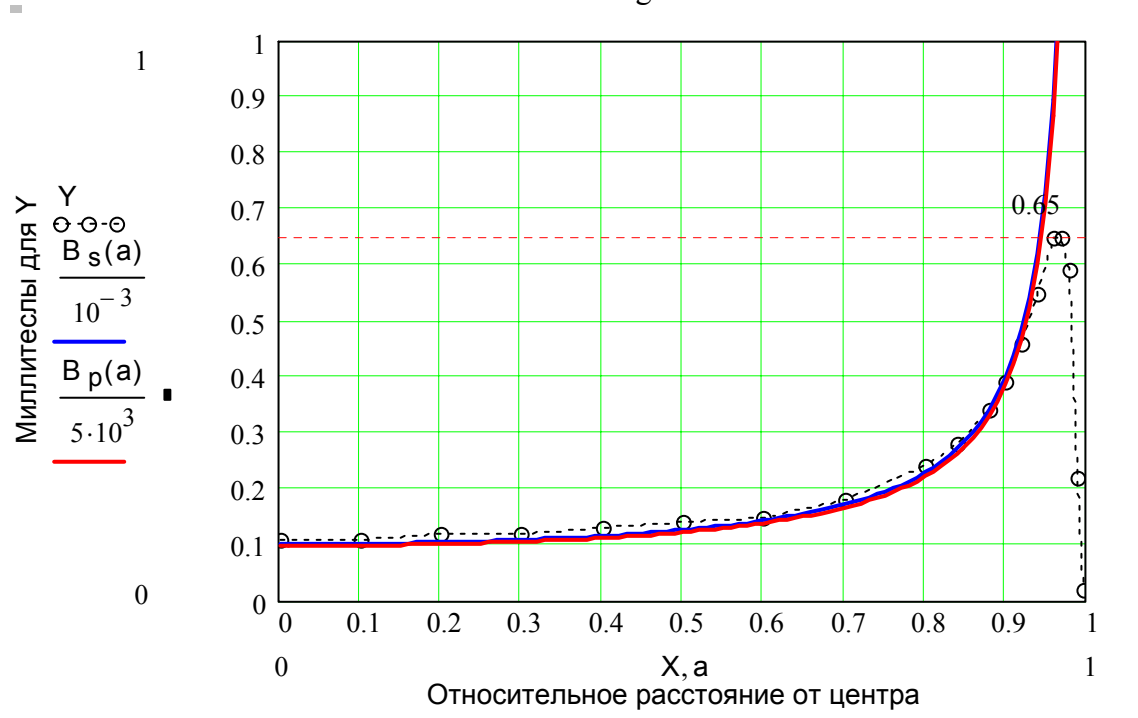


Fig.2 Schedules of change of a magnetic induction in a plane of ring currents:

Y – the experimental schedule (a black dotted line with circles);

$B_s(a)$ – calculation to experiment under the formula (15) (a curve of dark blue colour);

$B_p(a)$ – calculation of an induction for a polytron under the formula (19) (a curve of red colour).

Минимальное значение магнитной индукции в центре политрона равно:

The minimum value of a magnetic induction in centre of polytron equally:

$$B_e = B_p(0) = \frac{\mu_0 \cdot q_e \cdot c}{4 \cdot \pi \cdot R_e^2} = 491.491709 \text{ [Wb} \times \text{m}^{-2}] \rightarrow \text{[T]} \quad (20)$$

The magnetic stream covered by a ring current in a polytron, it would be possible to calculate by means of mentioned below integral

$$\Phi_p(a) = 2 \cdot \pi \cdot \int_0^{R_e} a \cdot B_p(a) \cdot da \quad |\text{Wb}| \quad (21)$$

However, because of presence in formula (16) integral \mathbf{J}_B , it is impossible to make, not knowing integration area. Therefore, for the decision of this problem we use formulas (3) and (4). Values of intensity electric and magnetic fields, calculated under formulas (3) and (4), will allow to define correction factors to formulas (2) and (13), for electric and magnetic interaction between rings.

The standard method of definition of a unit of measure of electric voltage is based on measurement of the work made by corresponding forces on the set way. We will use the same method for calculation of parameters of a magnetic field.

For a starting point of readout we will accept intensity of electric field at distance between the rings, equal R_e . Intensity of electric field in the set point is defined as the relation of force of interaction between the charged rings to value of one charge (in this case it is an elementary charge):

$$E_o(z) = \frac{1}{q_e} \cdot F_o(z) \quad |\text{N}| \times |\text{C}^{-1}| \rightarrow |\text{V}| \times |\text{m}^{-1}| \quad (22)$$

Electric induction or electric displacement:

$$D_o(z) = \varepsilon_0 \cdot E_o(z) \quad |\text{V}| \times |\text{m}| \times |\text{s}^{-2}| \rightarrow |\text{N}^{1/2}| \times |\text{m}^2| \times |\text{s}^{-3}| \quad (23)$$

Electric field potential we will define, how work on carrying over of one ring from other of a point $z = R_e$ in infinity with step $n = 1, 2, 3 \dots \infty$.

$$U_E(z, n) = \int_{R_e}^{n \cdot R_e} E_o(z) \cdot dz \rightarrow |\text{V}| \rightarrow |\text{N}^{1/2}| \times |\text{s}^{-1}| \quad (24)$$

Concrete values: $E_o(R_e) = 4.944 \times 10^{10} \quad |\text{V}| \times |\text{m}^{-1}|$

$$D_o(R_e) = 0.438 \quad |\text{V}| \times |\text{m}| \times |\text{s}^{-2}|$$

$$U_E(R_e, \infty) = 9.36 \quad |\text{V}| \rightarrow \text{electron-volts}$$

For comparison we will result intensity and potential of electric field for dot charges

(see the formula (1)): $E_o(R_e) = 14.73 \times 10^{10} \quad |\text{V}| \times |\text{m}^{-1}|$

$$U_o(R_e, \infty) = 14.566 \quad |\text{V}| \rightarrow \text{electron-volts}$$

From comparison of values of two potentials it is possible to conclude, that the potential of ionization of atom of hydrogen $13.6|\text{V}|$ is defined by geometry of a charge similar to the toroidal form.

At the same geometrical sizes potential of electric field of the flat capacitor under the formula (3) it is equal four times more potential of dot charge, and the potential of electric field of a dot charge in 1.556 times is more than potential of a ring charge. It once again confirms that the model of a ring charge corresponds to the real form of an elementary charge more precisely.

As we have agreed, a method of definition of units of measure of intensity and magnetic field potential should be similar to the previous. As testing "a magnetic charge" the elementary current i_e will be used:

$$i_c = \frac{q_e \cdot c}{2 \cdot \pi \cdot R_e} = 0.0773292423 \quad |\text{A}| \rightarrow |\text{N}^{1/2}| \rightarrow |\text{C}| \times |\text{Hz}| \quad (25)$$

In system SI, the electric current unit of measure $|\text{A}|$ is defined, as value of such constant electric current which, proceeding on two thin infinitely long parallel conductors located in vacuum on distance 1 meter from each other, causes force of interaction between them equal $2 \times 10^{-7} \quad |\text{N}| \times |\text{m}^{-1}|$. On each conductor the current in half-ampere flows, therefore the multiplier 2 is entered.

In our case, apparently from transformations of units of measure in the formula (25), modeling of intra-atomic currents, by means of variable electric field is possible also.

We will define an induction of a magnetic field of a ring current i_c in the set point on an axis of a ring, as the relation of force of interaction $F_S(z)$ between rings currents of superconductivity under the formula (13) to value of one of currents:

$$B_O(z) = \frac{1}{i_c} \cdot F_S(z) \text{ [N} \times \text{A}^{-1}] \rightarrow \text{[Wb} \times \text{m}^{-2}] \quad (26)$$

Intensity of a magnetic field in the same point on a ring axis:

$$H_O(z) = \frac{B_O(z)}{\mu_0} = \frac{1}{\mu_0 \cdot i_c} \cdot F_S(z) \text{ [A} \times \text{m}^{-1}] \quad (27)$$

Magnetic field potential we will define, as work on carrying over of one ring from other of a point $z = R_e$ in infinity with step $n = 1, 2, 3 \dots \infty$.

$$U_H(z, n) = \mu_0 \cdot i_c \cdot \int_{R_e}^{n \cdot R_e} H_O(z) \cdot dz \text{ [A}^2 \times \text{m}] \rightarrow \text{[N} \times \text{m}] \quad (28)$$

Concrete values: $H_O(R_e) = 0.125717 \text{ [Wb} \times \text{m}^{-2}]$

$$B_O(R_e) = 15.798 \times 10^{-8} \text{ [A} \times \text{m}^{-1}]$$

The maximum value $U_H(R_e, 390) = 17.864 \times 10^{-19} \text{ [A}^2 \times \text{m}]$ – at $n = 390$

On fig. 3 and 3a schedules of dependence of electric and magnetic potentials with distance growth between interacting objects are shown.

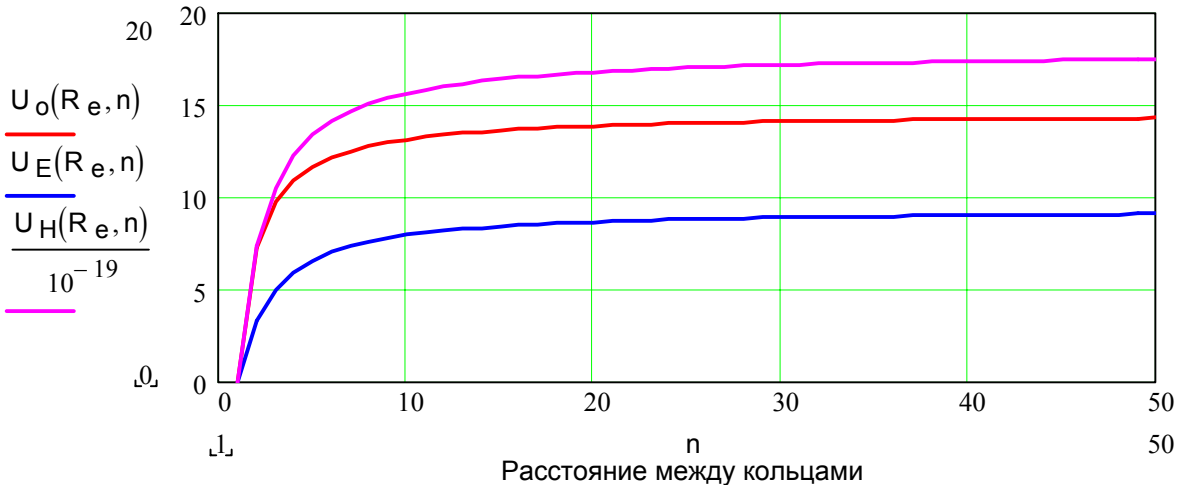


Fig. 3

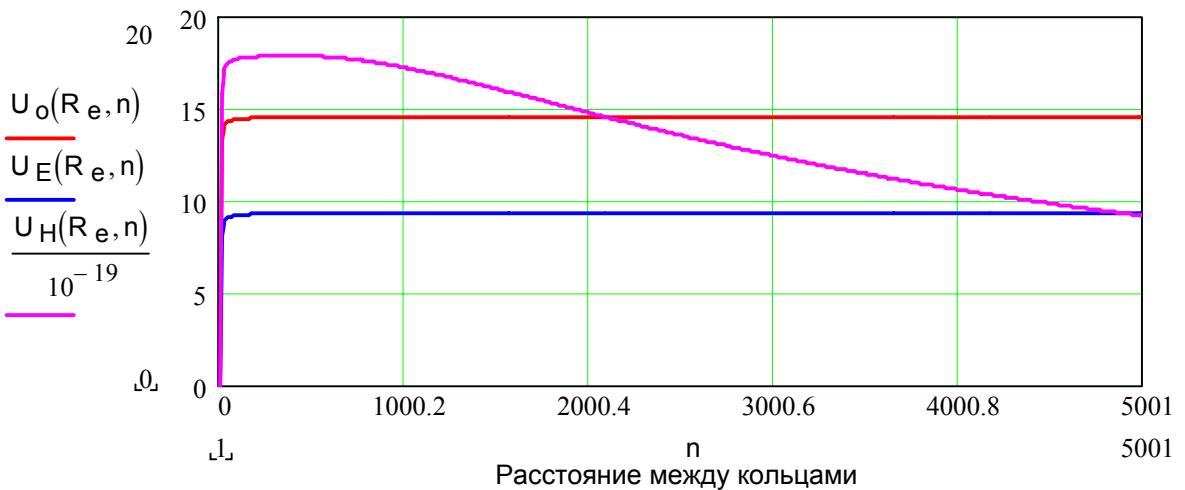


Fig. 3a

Schedules of change of electric and magnetic potentials from distance:

U_o – Potential of a dot electric charge (red line); U_E – Potential of a ring electric charge (dark blue line); U_H – Magnetic potential of a ring electric current (lilac line).

Attracts attention inadequate behavior of magnetic potential in comparison with two electric (fig. 3a). Since distance approximately 38.5nm, that makes about 200 sizes of atom of hydrogen, the magnetic potential suddenly starts to decrease. This result demands additional research.

In one of our early works – "Binary law of background radiation":

http://vlamir43.narod.ru/relic_radiation_e.pdf

we have shown, what undesirable consequences at engineering and theoretical researches arise at use in mathematical calculations of indicative functions on the basis $\mathbf{e} = \mathbf{2.71828} \dots$. Probably, as in a case with magnetic potential of a ring current there were same problems. Further to exclude risks of a similar sort, we will enter new units of measure of induction, intensity and potentials by another way.

First of all, for formation of new units of measure in Galactic System of Measures it is necessary to correct electric and magnetic permeability of vacuum:

$$|\text{SI}| \quad \varepsilon_0 \cdot \mu_0 = \left(\frac{10^7}{4 \cdot \pi \cdot c^2} \right) \cdot \left(\frac{4 \cdot \pi}{10^7} \right) = \frac{1}{c^2} \rightarrow \frac{1}{c_e} \cdot \frac{1}{\omega_e} = \left(\frac{1}{2 \cdot \pi} \right) \cdot \left(\frac{1}{2 \cdot \pi} \right) = \varepsilon_e \cdot \mu_e \quad |\text{GSM}| \quad (29)$$

Wave resistance of vacuum in **Galactic System of Measures** (GSM) is equal $\sqrt{\mu_e/\varepsilon_e}=1$

Electric induction of a ring charge we will define, as a stream of an elementary electric charge q_e through an island πR_e^2 covered by a polytronic ring, i.e. it is a vector density positronic and electronic field:

$$D_0 = \frac{q_e}{\pi \cdot R_e^2} = \pm 5.218499 \text{ |C|} \times \text{|m}^{-2}\text{|} \rightarrow \text{|N}^{1/2}\text{|} \times \text{|s|} \times \text{|m}^{-2}\text{|} \quad (30)$$

Being guided by the formula (3), we will define new units of measure of intensity and electric field potential, proceeding from the work made by force $F_O(z)$ on a piece of way from $z = R_e$ to $z = 2R_e$:

$$W_D = \int_{R_e}^{2R_e} F_O(z) \cdot dz = \frac{R_e^2 \cdot D_0^2}{32 \cdot \varepsilon_0} \cdot \int_{R_e}^{2R_e} J_E(z) \cdot dz \quad |\text{J}| \quad (31)$$

$$W_D = 5.258509 \times 10^{-19} \text{ |J}| = 3.2821 \text{ |eV}| \quad (\text{SI})$$

$$W_D = 1.64427 \times 10^{-5} \text{ |jb}| \quad (\text{GSM})$$

$$U_e = \frac{q_e}{\varepsilon_0 \cdot \pi \cdot R_e} = 58.264537 \text{ |C|} \times \text{|m|} \times \text{|s}^{-2}\text{|} \rightarrow \text{|V}| \quad (\text{volt – SI})$$

$$U_e = \frac{q_e}{\varepsilon_e \cdot \pi \cdot R_e} = 2 \text{ |pn|} \times \text{|rk|} \times \text{|mg}^{-2}\text{|} \rightarrow \text{|} \check{\text{U}} \text{|} \quad (\text{volt – GSM})$$

Before starting to definition of units of measure for a magnetic field we will result the mathematical proof of that in a plane covered by an elementary ring current i_c , magnetic field induction is uniform and does not obey to law for macroscopical objects under formulas (16), (19).

$$B_p(0) = \frac{\mu_0 \cdot \Phi_e}{4 \cdot \pi \cdot R_e^2} = \frac{\alpha \cdot \Phi_0}{\pi \cdot R_e^2} = 491.49169 \text{ |Wb|} \times \text{|m}^{-2}\text{|} \rightarrow \text{|N}^{1/2}\text{|} \times \text{|m}^{-1}\text{|} \rightarrow \text{|T}| \quad (32)$$

where: $\alpha = 7.297352533 \times 10^{-3}$ – fine structure constant.

From equality (32) follows, that we can express electric and magnetic permeability of vacuum through other constants:

$$\varepsilon_0 = \frac{\Phi_e}{4 \cdot \alpha \cdot c^2 \cdot \Phi_0} \quad \mu_0 = \frac{4 \cdot \alpha \cdot \Phi_0}{\Phi_e} \quad (33)$$

Herewith, for observance of the law of quantization of a magnetic stream in a superconducting mode, relation Φ_e/Φ_0 should be an integer

$$\frac{\Phi_e}{\Phi_0} = 23228 \quad (34)$$

Coming from the above-stated facts we will establish a new unit of measure of a magnetic induction as the relation of elementary magnetic stream Φ_0 through an island πR_e^2 covered by a polytronic ring, i.e. it is a vector density teslatronic and negatronic field:

$$B_0 = \frac{\Phi_0}{\pi \cdot R_e^2} = \pm 67352 \text{ |Wb|} \times \text{|m}^{-2}\text{|} \rightarrow \text{|N}^{1/2}\text{|} \times \text{|m}^{-1}\text{|} \rightarrow \text{|T|} \quad (35)$$

Being guided by the formula (4), we will define new units of measure of intensity and magnetic field potential, proceeding from the work made by force $F_S(z)$ on a piece of a way from $z = R_e$ to $z = 2R_e$:

$$W_B = \int_{R_e}^{2R_e} F_S(z) \cdot dz = \frac{\mu_0 \cdot (23228)^2 \cdot B_0^2 \cdot R_e^2}{32} \cdot \int_{R_e}^{2R_e} J_H(z) \cdot dz \quad |J| \rightarrow \text{|A}^2\text{|} \times \text{|m|} \quad (36)$$

$$W_B = 7.340515 \times 10^{-19} \text{ |J|} = 4.58159 \text{ |eV|} \quad (\text{SI})$$

$$W_B = 2.295288 \times 10^{-5} \text{ |jb|} \quad (\text{GSM})$$

$$U_h = \frac{h}{\mu_0 \cdot q_e \cdot 2 \cdot \pi \cdot R_e} = 5.298446 \text{ |N|} \times \text{|s|} \times \text{|C}^{-1}\text{|} \rightarrow \text{|A|} \quad (\text{ampere -SI})$$

$$U_h = \frac{h_e}{\mu_e \cdot \pi \cdot R_e \cdot 2 \cdot q_e} = 1 \text{ |dn|} \times \text{|mg|} \times \text{|pn}^{-1}\text{|} \rightarrow \text{|Å|} \quad (\text{ampere -GSM})$$

Having kept historically established practice, we do not change names of units of measure of electric voltage and force of an electric current, but we enter modified symbols for a volt and ampere designation – | Ũ | and | Å |.



FROM THE PURE MATTER TO THE PURE REASON

© V.N. Poljansky & I.V. Poljansky, 2008

Anything here you will not do! Though the person also considers itself as a reasonable being, but him it is permitted to understand only half of laws on which there lives the Universe. Second half of these laws are outside of our sensual perception, and therefore, any not ordinary ideas and alternative models of peace arrangement will by all means come across on banal – "I trust – I do not trust". Besides, by diligence of many previous theorists on the basis of vague understanding of the laws of the Universe erected so huge heap of doubtful theories that all newly-baked on official paradigm theorists start helplessly flounder in this web.

Therefore, starting to write this article, authors have seriously thought of, whether to put all perennial work under the name "Polytronic physics" in any archive – so, for the future about hundred years. Descendants let understand!

From our previous article "Galactic System of Measures" we take the formula which can pretend for universality at the description of laws of our half of Universe. It is the formula (12). But we will write down it, having exchanged elementary charging impulse Φ_e by elementary magnetic stream Φ_0 from the parity (34):

$$F(z, v_m) = \frac{(23228)^2 \cdot \Phi_0^2}{2 \cdot \pi \cdot 10^7 \cdot (2 \cdot R_e)^2} \cdot \left\{ \left[1 - \left(\frac{v_m}{c} \right)^2 \right] \cdot J_E + \left(\frac{v_m}{c} \right)^2 \cdot J_H \right\} |N| \quad (12a)$$

From such replacement the physical sense of the formula does not vary, and earlier received conclusion that «in metals and semiconductors there is no movement of electrons and positrons (or holes), but is the streams of short magnetic impulses jumping from atom to atom with frequency, depending on the applied electric field», it remains valid.

As to universality of that part of the formula which is encompassed by curly braces it is easy to see, that left summand describes the law which has opened A. Einstein, and the right summand concerns the law of superconductivity by which among the first researchers were engaged Camerling-Ones, Meysner, brothers Fric and Haync London. Both laws refer to the processes occurring in substance, and cannot be mechanically transferred on laws at all, operating in vacuum.

As to the expression facing before curly braces it can get some physical meanings. We have already got acquainted with two of them. This is electric interaction between elementary charges and magnetic interaction between elementary magnetic streams.

By more difficult transformations the formula (12a) can give such kind, that it will describe gravitational interaction. Here is this formula:

$$F(z, v_m) = \left\{ 23228^2 \cdot \pi \cdot R_e^2 \cdot \left[\left(1 - \frac{v_m^2}{c^2} \right) \cdot J_E + \left(\frac{v_m^2}{c^2} \right) \cdot J_H \right] \right\} \cdot \left(\frac{\Phi_0^2}{\pi^2 \cdot R_e^2 \cdot 2 \cdot 10^7} \right) \cdot \left(\frac{1}{z^2} \right) |N| \quad (12b)$$

Difficult enough expression encompassed in curly braces, now carries physical meaning of some gravitational parameter of the Universe. But it is not a constant as this parameter depends on a relationship of speeds v_m/c .

$$G_m(v_m) = \left\{ 23228^2 \cdot \pi \cdot R_e^2 \cdot \left[\left(1 - \frac{v_m^2}{c^2} \right) \cdot J_E + \left(\frac{v_m^2}{c^2} \right) \cdot J_H \right] \right\} |m^2 ?| \quad (37)$$

The second member of product, encompassed in the formula (12b) in parentheses can be considered, how product of masses of two identical material points:

$$M_i = \frac{\Phi_0}{\pi \cdot R_e \cdot \sqrt{2 \cdot 10^7}} = 1.488824 \times 10^{-9} \text{ |Wb|} \times |m^{-1}| \rightarrow |kg?| \quad (38)$$

And, at last, the third member of product in the formula (12b) contains in a denominator a quadrate of distance between these material points.

Thus, we have received the formula for force of a gravitational attraction between masses of two material points.

$$F_g(v_m) = \frac{G_m(v_m) \cdot M_i^2}{z^2} \text{ [N]} \quad (39)$$

In fig.4 the dependence of the gravitational parameter described by the formula (37) from some speed of some movement in substance is shown. The point of crossing of a curve and two crossing dashed lines corresponds to a present gravitational condition of the Universe. And, it is rather probable, that this point slowly moves on a curve.

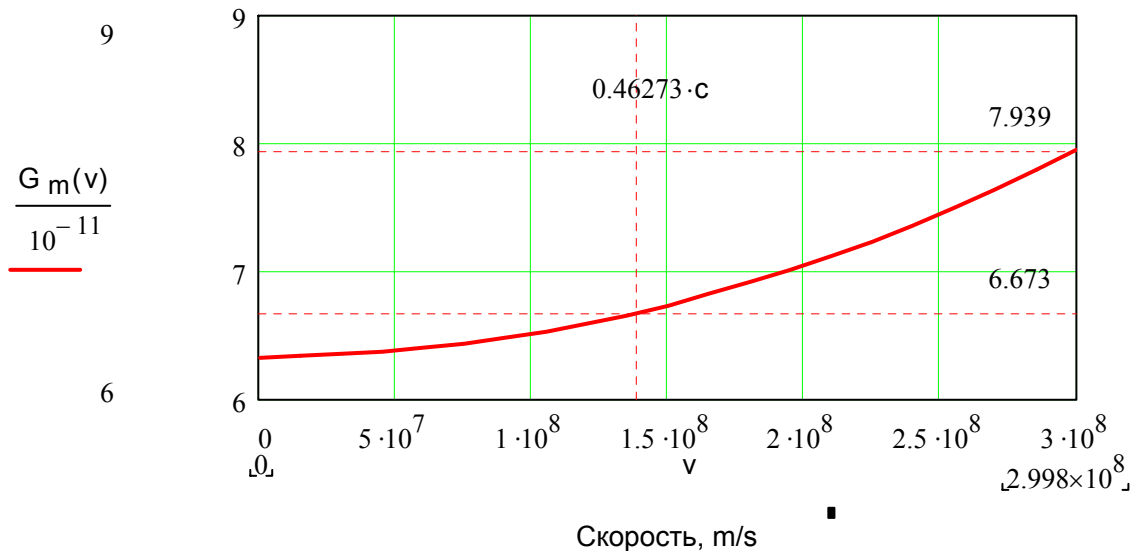


Fig. 4
The law of change of gravitational parameter of the Universe

What is such – gravitational or heavy mass?

The elementary portion of electricity we have, the elementary magnetic stream too, and here the elementary portion of mass – is not present. Whether will be graviton, yes such, that it could be caught and saved up in any trap to tell: “Here it a pure matter!” – “Is still by pitchfork on water it is written!”

Leaning against the concept of substantive TIME by N.A.Kozyrev, we shall afford a hypothesis, that the SPACE – is given us in the form of electric components of sensual perception, whereas TIME – in the form of magnetic components of our sensual perception.

The SPACE and TIME are continuous and exist in counteraction to each other or, being expressed in other words, the SPACE and TIME continuously absorb each other. Speeds of transmutation – while a question opened. For us the SPACE extends, and, hence, TIME should be compressed. In presumably existing parallel world of stopped time all on the contrary – all mirror to our world.

Of course it is while intuitive guesses, but for this purpose we have developed galactic system of measures to move in this direction further. To understand unity of laws of the Universe it is necessary to have pure reason, that is such reason which equally comfortably feels itself in any measurement. Only such reason will allow us to solve the main riddle for mankind – what is a LIFE.

Let's begin reasonings with most, that nor on there is, elementary household examples and, keeping logic, we will follow in area of sacred complexities.

Whether it is possible with heavy ax to measure voltage in the electric system?

Whether or, for example, it is possible by means of all together taken teach in HIGH SCHOOLS of theories to calculate average duration of life of any kind of organisms?

Certainly, it is impossible! Well, how you it will make, if all offered models of a structure of the substance, all fields, all elementary particles and all other is dead?

Here also it turns out, that the official paradigm is heavy ax. All HIGH SCHOOLS in the world let out physicists on the same template, and the life puts subsequently such puzzling problems before young men, that they toil with them till the end of the days trying to understand in than the meaning of the life consist.

What is the new life?

To give an overall picture of origin, development and fading of zoetic processes of human being it is possible to give and now. An experimental material, thank God, though take away.

The life beginning is pawned by love. The coordination and complementarity of bioresonances are necessary for occurrence of the present love between two reasonable beings (future parents of a new life). Quantity of these resonances extremely – since physiological (visual, olfactory, sound etc.) and finishing psychophysical, intellectual, moral.

At geneticists there is a favourite expression – «recessive allele influences on a phenotype, only if a genotype is homozygous»

Zygote – zoospore. It is that unique ovule from which the whole organism grows.

Allele – one of two genes responsible for the same sign in a new organism. One allele arrives from one parent, another – from another.

So, the life begins with one-single, but very multiple, ovule. Than are better compounded the bioresonances of the father and mother, than are more qualitatively is zygote and so the more perfect, healthy and beautiful human being will be generated from this ovule.

Look back around! Whether it is a lot of among your environment of people, at least with hardly noticeable physical and mental deviations? Practically is not present!

It is not enough for you, then read the medical statistics.

Here to you global result, so-called, free love, and speaking directly – result of unruliness in moral conduct. This dirty propaganda stream flows on us daily from all sources of the information.

Duration of life is defined by frequency drift of bioresonances. Begin counting out of the life duration mark goes from zygote origin. Life duration of a clone it is shorter on that time interval, which has passed from formation of a true zygote before artificial activation of a ovule-donor. Not without reason our "stars" rejuvenate with embryonic ovules.

Frequency spectra of bioresonances are initially formed in atoms, and then become complicated in molecular linkages. Hence, the atom should be the best accumulator of the energy, the best transceiver device and the best transceiver aerial.

Any of existing theories and new hypotheses cannot offer a design of atom with such characteristics. And all because, the authors consider themselves in these theories and hypotheses as objective observers. Actually, we so subjective and unilateral thinking beings, that our brain simply is not capable to form something objective.

For God – God's, for Cesar – Cesar's!

With the years frequency spectra of atoms and molecules in various survival systems of organism drift towards increase of frequencies. That is to say in that area of spectra where tincture of resonances is much more difficultly provided. As a result the mismatch of bioresonances accrues and failures in work of nervous system begin.

All illnesses from nerves – this household wisdom has absolutely exact explanation.

At last, it is impossible to disregard the inhabitancy.

Thus, duration of life is defined by magnitude of frequency drift of the bioresonances, corrected by factor of the adversity of external conditions.

The reasonable Life on the Earth has occurred from more developed civilization, than ours. But the previous civilization was lost that it did not have not enough time to keep itself in that kind, in which it existed. The only thing, that they had time to make before the decline is to code the information about the life in those genes, on which all live, now develops on the Earth.

The above-stated reasons, certainly, cannot give the concrete answer to an immemorial question – What to do?

Clearly only one. It is impossible to stand on a place. It is impossible to preserve the reached knowledge. It is necessary to improve methods of development of intelligence and to develop it further.

Russian – our national treasure, even with all its lexical and grammatical lacks. M.V.Lomonosov found in it «magnificence of Spanish, vivacity of French, a German fortress, tenderness of Italian and, moreover, riches and strong brevity in images of the Greek and Latin languages».

A number of scientists consider, that the most fruitful language of science is Russian.

Not without reason "Russian brains" always were appreciated and now appreciate all over the world. For the scientific analysis it is necessary to recognize as the most unproductive language the English language as abounding with all kinds of exceptions to the rules. Not casually and M.V.Lomonosov has ignored English language. Unfortunately, within last decades, because of intensive intervention of lexicon speaking another language Russian loses the former advantages more and more.

The task is difficult, but executable. Would be not only desire of experts, but also understanding of an active part of the people in necessity of these transformations.

We, as researchers in the exact sciences, it is necessary, being content with own level of thinking, again to address to Galactic System of Measures.

This time we will address to the formula (32) on page 10. We will result it once again.

$$B_p(0) = \frac{\mu_0 \cdot \Phi_e}{4 \cdot \pi \cdot R_e^2} = \frac{\alpha \cdot \Phi_0}{\pi \cdot R_e^2} = 491.49169 \text{ |Wb|} \times \text{|m}^{-2}\text{|} \rightarrow \text{|N}^{1/2}\text{|} \times \text{|m}^{-1}\text{|} \rightarrow \text{|T|} \quad (32)$$

The fine structure constant in this formula has appeared as a result of an intuitive guess and usual numerical comparison. How it has occurred?

In our work «On INTERCOUPLING of SOME PHYSICAL CONSTANTS» (2002)

http://vlamir43.narod.ru/intercoupling_of_constants_e.pdf

we have elicited, for the first time, that the fine structure constant has geometrical meaning.

Now, looking at the formula (32), becomes clear, that, really, the fine structure constant has simple geometrical meaning and is the factor averaging value of a magnetic induction of a moving charge on a ring trajectory, on all area of a ring.

The charge describes in space a figure of torahs.

Hence, using the formula (21) for an induction of a ring current in a ring plane, it is possible to calculate diameter of "hole" in toroidal model of electron.

This diameter is equal 1.955×10^{-20} |m|. Accordingly, average value of an induction of a magnetic field in it "an ear of needle" turns out equal 5×10^{22} |T|.

By "A magnetic beam" of such density can cut anything you like, including all virtual and not virtual elementary particles.

In 2007 scientists of institute of extraterrestrial physics Max Planck managed to see a short-term luminescence caused with magnetar. These heavenly objects with a superstrong magnetic field belong to the class fast-revolving of neutron stars. Quite probably, that in the centre of magnetar such field also exists.

In aforementioned our work three variants of the formula for calculation of tangential energy of radial polytrons of atoms are resulted also. This energy is radiated by atoms in the form of photons. We result one of variants of this formula in application to hydrogen and helium

$$W_t(Z, m, n_e) = \frac{h}{q_e^2} \cdot (2 \cdot M_e \cdot c \cdot 10^7) \cdot \left\{ \frac{\left[\frac{n_e}{K} \right]^4}{\left[\frac{m}{Z} \right]^2 - \left[\frac{n_e}{K} \right]^2} \right\} \text{ |J|} \quad (40)$$

Now it is again address to researches of our outstanding predecessors. In N.A.Kozyreva's work "the Causal or asymmetrical mechanics in linear approach" (Pulkovo, 1958) the formula for "time motion" or speed of transformation of the reason into consequence is resulted. Here this formula in the original:

$$C_2 = \alpha \cdot \frac{e^2}{h} \quad (41)$$

We will enter the designations $q_e = e$ и $\tau = C_2$ and rewrite N.A.Kozyreva's formula in the form of a parity:

$$\frac{h}{q_e^2} = \frac{\alpha}{\tau} \quad (42)$$

Calculation gives value $\tau = 2.827 \times 10^{-7}$ [s/m]. As you can see, "time motion" it is equivalent speeds in the parallel world of stopped time and current space. Substituting in the formula (40) fraction with a constant α and "time motion" from a parity (42) it is received:

$$W_t(Z, m, n_e) = \frac{c}{\tau} \cdot (2 \cdot \alpha \cdot M_e \cdot 10^7) \cdot \left\{ \frac{\left[\frac{n_e}{K} \right]^4}{\left[\frac{m}{Z} \right]^2 - \left[\frac{n_e}{K} \right]^2} \right\} |J| \quad (43)$$

The formula (43) at all does not contradict an operating paradigm as it is easy for transforming to the known formula $W = mc^2$ (here $m = M_e$).

However introduction "time motion" and causal relationships expands a field of researches and demands more detailed studying of fine structure constant α .

From here follows, that if the theory of substantive time by N.A.Kozyreva is true, then "time motion" it is possible to study on spectra of radiation and absorption of atoms.

But for this purpose it is necessary to understand, that itself the mass encased in parentheses in the formula (43) represents.

This mass is equal 132.949×10^{-27} [kg], that in 79.5 times more mass of proton.

And protons, according to the official theory, make the prevailing mass of stars.

Then, what it is undetectable mass which almost in eighty times prolongs period of lifes of stars? It is now already incontestably proved, that our Sun would go out for a long time, if worked on a nuclear energy.

Under N.A.Kozyreva's theory each star at a certain stage of the life turns in machine, converted substantive TIME into beam energy.

Может быть, это и есть ответ на поставленный вопрос.

Perhaps, it also is the answer to supplied question.

The God has hidden the LIFE source in such place, that the human being never can touch it, even knowing this place.

For God – God's, for Cesar – Cesar's!

~ • ~ • ~ • ~ • ~