

GRAVITATION "HAS ORDERED LONG to LIVE"

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The summary. Mathematically it is proved, that substantive time opened by Russian astrophysicist N.A. Kozyrev, really exists and is shown in a relationship of cause and effect between space and time in the form of counteraction to space expansion. The formalism gravitating masses can be replaced with success by compression of substantive time.

From a school bench many of us remember, how two equations on which are calculated force of a gravitational attraction between two dot bodies with masses M_u and M_v , and force of electrostatic interaction between two dot electric charges in magnitude Q_e and Q_p are similar. Here are these formulas:

$$F_g = G \cdot \frac{M_u \cdot M_v}{R^2} \quad |\text{N}| \quad (1)$$

$$F_q = \left(\frac{1}{4 \cdot \pi \cdot \varepsilon_0} \right) \cdot \frac{Q_e \cdot Q_p}{R^2} \quad |\text{N}| \quad (2)$$

where: $G = 6.673 \times 10^{-11} \text{ |m}^3 \times \text{kg}^{-1} \times \text{s}^{-2}|$ – Gravitational constant,

R – distance between bodies, $|\text{m}|$,

ε_0 – dielectric constant of vacuum (the function of speed of light 'c'), $|\text{F}| \times |\text{m}^{-1}|$

$$\varepsilon_0 = \frac{10^7}{2 \cdot \pi \cdot c^2}$$

We have decided to unify these two formulas as follows.

Masses of bodies M_u and M_v to express through a nuclear mass unit $u = 1.66053873 \times 10^{-27} \text{ |kg|}$ and through numbers N_u and N_v so that $M_u = u \cdot N_u$ and $M_v = u \cdot N_v$, and gravitational constant to "hide" under a sign of square root. As a result we have received other constant which equally concerns mass of each of two bodies

$$\rho_g = u \cdot \sqrt{G} = u \cdot \frac{\sqrt{66.73}}{10^6} = 1.356 \times 10^{-32} \quad |(\text{kg} \cdot \text{m})^{1/2} \times |\text{m}| \times |\text{s}^{-1}| \quad (3)$$

After the transformations set forth above the formula (1) looks so

$$F_g = \rho_g^2 \cdot \frac{N_u \cdot N_v}{R^2} \quad |\text{N}| \quad (4)$$

In the same way we have transformed also factor in the formula (2), expressing charges of bodies Q_e and Q_p through an elementary charge q_e and dimensionless numbers N_e and N_p .

As a result we have received a new constant for electrostatic interaction

$$\rho_q = q_e \cdot \left(\frac{1}{\sqrt{4 \cdot \pi \cdot \varepsilon_0}} \right) = q_e \cdot c \cdot \frac{\sqrt{10^5}}{10^6} = 1.519 \times 10^{-14} \quad |\text{C}| \times |\text{m}| \times |\text{s}^{-1}| \quad (5)$$

After transformations the formula (2) will look so

$$F_q = \rho_q^2 \cdot \frac{N_e \cdot N_p}{R^2} \quad |N| \quad (6)$$

Let's calculate the relation of a new electric constant to new gravitational, having designated this relation the letter δ_g

$$\delta_g = \frac{\rho_q}{\rho_g} = 1.12 \times 10^{18} \quad |C| \times |(kg \cdot m)^{-1/2}| \quad (7)$$

The result of division of the formula (6) on the formula (4) – division of force on force – should give simple dimensionless number, without dependence from existing parity of forces.

$$\frac{F_q}{F_g} = \delta_g^2 \cdot \frac{N_e \cdot N_p}{N_u \cdot N_v} \quad (8)$$

Hence, the constant square δ_g too should be dimensionless number

$$\delta_g^2 \rightarrow \frac{|C^2|}{|kg| \times |m|} \quad |\text{dimensionless value}| \quad (9)$$

Product $(\delta_g \cdot c)^2 = 1.127 \times 10^{53} |Wb^2| \times |kg^{-1}|$ connects gravitational mass with a magnetic field in dynamic processes.

In our previous research magnetic and electric field of the Earth

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

we have realized, that in surrounding space there is a powerful electric field which is characterised by a new constant, with dimensionality $|C| \times |m^{-1}|$, i.e. dimensionality of linear density of electric charges (or dipoles)

$$\tau_e = \frac{J_c}{v_e} = \frac{2 \cdot 10^7 \cdot M_e}{\pi \cdot q_e} = 3.62 \times 10^{-5} \quad |C| \times |m^{-1}| \quad (10)$$

Having divided a constant square δ_g on a constant τ_e we will find a direct relationship between a mass unit of measure $|kg|$ and a unit of measure of quantity of an electricity $|C|$

$$\delta_e = \frac{\delta_g^2}{\tau_e} = \frac{1.254 \times 10^{36}}{3.62 \times 10^{-5}} = 3.464 \times 10^{40} \quad |C| \times |kg^{-1}| \quad (11)$$

Having divided (11) on (10) we will receive relationship of mass with space through constant δ_s

$$\delta_s = \frac{\delta_g^2}{\tau_e^2} = \frac{1.254 \times 10^{36}}{1.31 \times 10^{-9}} = 9.57 \times 10^{44} \quad |m| \times |kg^{-1}| \quad (12)$$

As it has been shown in our work about interrelation of some world constants

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

the unit of measure of an electric charge is equal the product of a root square of a force unit by measure of time unit $|C| = |N^{1/2}| \times |s|$.

Using this parity, we can write down the formula (11) in a kind

$$\delta_e^2 = \left[\frac{\delta_g^2}{\tau_e} \right]^2 = 1.2 \times 10^{81} \quad |\text{N}| \times |\text{s}^2| \times |\text{kg}^{-2}| \quad (13)$$

Let's calculate force of electrostatic pushing away and force of a gravitational attraction between two protons which are on distance $R = 25 \text{ |nm|} = 25 \times 10^{-9} \text{ |m|}$ from each other (it approximately 100 cross-section sizes of a proton). ($N_e = N_p = N_u = N_v \approx 1$).

$$F_q = \rho_q^2 \cdot \frac{10^{18}}{25^2} = 36.913 \times 10^{-14} \quad |\text{N}| \quad (14)$$

$$F_g = \rho_g^2 \cdot \frac{10^{18}}{25^2} = 29.44 \times 10^{-50} \quad |\text{N}| \quad (15)$$

As in the formula (13) the constant δ_g is set, it means, we should divide expression (13) on force of gravitational interaction of protons $F_g = 29.44 \times 10^{-50} \text{ |N|}$ under the formula (15) that will give the chance to us to estimate precisely interrelation substantive time and gravitational mass. We will designate this constant the letter δ_t

$$\delta_t = \sqrt{\frac{\delta_e^2}{F_g}} = \frac{\delta_g^2}{\tau_e \cdot \sqrt{29.44 \cdot 10^{-50}}} = 6.11 \times 10^{109} \quad |\text{s}| \times |\text{kg}^{-1}| \quad (16)$$

For an example we will calculate quantity (or a stock) substantive time in electron $M_e = 9.10938188 \times 10^{-31} \text{ |kg|}$ and in a proton $M_p = 1.67262158 \times 10^{-27} \text{ |kg|}$:

$$\text{for electron} \quad \mathcal{G}_e = \delta_t \cdot M_e = 5.556 \times 10^{79} \text{ |s|} = 1.765 \times 10^{72} \text{ years}$$

$$\text{for proton} \quad \mathcal{G}_p = \delta_t \cdot M_p = 1.022 \times 10^{83} \text{ |s|} = 3.241 \times 10^{75} \text{ years}$$

THE CONCLUSION

The present work is devoted light memory of outstanding Russian scientist Nikolay Aleksandrovich Kozyrev. He over life happened to bear the most severe tests, but he never changed to affair of the serving to science. Especially strong impression upon us makes the story how he had overcome almost week torture in a cold stone bag of a punishment cell. He had called to the aid unknown energy, – it had warmed him and had rescued him from death. It was energy of substantive time.

The list of the used literature

1. Причинная или несимметричная механика в линейном приближении. Пулковое, 1958 г.
2. Л.С. Шихобалов. Биография и научная деятельность Н.А. Козырева.

