Mass equivalent of electrostatic and gravidynamic interplay

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Abstract

In the article the concept of a gravitational equivalent electrostatic and gravidynamic of interplay is entered.

In physics widely use a mechanical equivalent of a heat with the help which one easily to enumerate work in an equivalent quantity of heat or on the contrary. Here we shall discover a mass equivalent of electrostatic and gravidynamic interplay. Using it, it is easy to enumerate any electrostatic interplay in equivalent interplay of some weights, which one results identical outcome. The similar equivalent will be obtained and for of gravidynamic interplay. The difference is, that the fixed gravitational charge a gravidynamic field will not originates, and moving with speed of light creates a gravidynamic field of maximum tension. Therefore mass equivalent of gravidynamic interplay will change from zero point up maximum rating, which one we shall discover.

Mass equivalent of electrostatic interplay.

The law of universal gravitation which was written to to a system CGS for two identical weights *m* looks so:

$$F_g = \frac{Gm^2}{r^2} \tag{1},$$

where *r* - spacing interval between gravitational charges.
The law of the Coulomb who was written to to a system CGSE for two elementary charges e looks similarly:

$$F_e = \frac{e^2}{r^2} \tag{2}.$$

Equating (1) and (2), we shall discover:

$$m\sqrt{G} = e \tag{3},$$

whence mass equivalent of electrostatic interplay will be:

$$m = \frac{e}{\sqrt{G}} \tag{4}.$$

Substituting in (4) world constants, we shall receive numerical value of an electrostatic mass equivalent:

$$m = 4.80294 \cdot 10^{-10}/2.5831 \cdot 10^{-4} = 1.859 \cdot 10^{-6} \text{ g} \tag{5}.$$

It is easy to define dimension of unit of a charge in a system CGSE, from (3).

Mass equivalent of gravidynamic interplay.

As we do not know relation of tension of a gravidynamic field from a running speed of a gravitational charge besides that it is not linear, we shall consider screw motion of a mobile electron with radius of a screw trajectory to equal radius of orbit of the Bohr. The components of an electron move with speed of light, therefore create the greatest possible tension of a gravidynamic field, which one and determines screw motion of an electron. Let's presume now, that together with an electron on an axis of its screw trajectory some dummy mass is moves, the charge for an electron is not present, is not present of gravidynamic self-effect, and there is only gravitational interaction between electronic mass and dummy mass. The described model is completely similar to an epicyclic system, which

one was formed as a result of electron-capture by dummy mass, therefore here it is possible to use the theory of capture of space bodies set up in chapter 21 [1]. Let's take advantage of equations (21.4) and (21.5) this chapter and we shall play back them here.

Radius of steady orbit of an entrapped body r_0:

$$r_0 = \frac{\alpha^2}{GM} \qquad (6),$$

where: α = Vr - product of an orbital velocity on radius of orbit, G - gravitational constant, M - dummy mass (mass equivalent of gravidynamic interplay).

Bond energy of the formed epicyclic system in a stable state W_0:

$$W_0 = -\frac{G^2 M^2 m_e}{2\alpha^2} \qquad (7),$$

where m_e - electronic mass.

From (6) we shall discover dummy mass M, all constants are known for us: radius of orbit of the Bohr $5.29173 \cdot 10^{-9}$ cm, α for an electron 1.1576765 cm^2/sec (chapter 5.1 [1]), $G = 6.6726 \cdot 10^{-8}$ dynes·cm^2/g^2. By substituting these values in (6), we shall discover a mass equivalent of gravidynamic interplay M:

$$M = 3.796 \cdot 10^{15} \text{ g} \qquad (8).$$

Such huge value of mass gravidynamic equivalent (almost 4 billion of tons) confirms, that to gravidynamic interplay is not present equal in the nature. Ratio $M/m_e = 3.796 \cdot 10^{15}/9.1086 \cdot 10^{-28} = 0.417 \cdot 10^{43}$, that corresponds to the data of chapter 11.1 [1]. Thus, the gravidynamic interplay in 10^{43} times is stronger gravitational at motion with speed of light.

If all data, which one we have used in a task to substitute in (7), we shall receive bond energy in accuracy equal ionization energy of Hydrogenium atom 13.6 eV, as it was necessary to expect from equivalence to a gravitation and gravidynamic.

References:

1 http://www.new-physics.narod.ru