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## Justification the wave oscillation frequency of the unified field of the universe

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The unity of the gravitational and electromagnetic fields confirms an experiment in which a superconductor 2, with a direct electric current passing through, hangs above a container with a liquid helium 1. In this case, the direct current creates a constant magnetic field with the wave parameters  $\lambda p$ ,  $A_p$ , which are opposite to parameters of the gravitational field and their mutual repulsion takes place. Theoretically, the unity of gravitational and electromagnetic fields follows from the Einstein's laws, de Broglie, Helmholtz, and others. The frequency  $vG \rightarrow 7.4 \cdot 10^{42} \text{ s}^{-1}$  of oscillation the gravitational field waves (the Nastasenko constant) is substantiated by the dependence (1), which follows from the gravitational constant  $G$  (2):

$$v_G = v_p = \sqrt{\frac{c^5}{Gh}} = \sqrt{\frac{\left[0.299792458 \cdot 10^9 \left(\frac{m}{s}\right)\right]^5}{6.67408 \cdot 10^{-11} \left(\frac{m^3}{kg \cdot s^2}\right) \cdot 6.626070040 \cdot 10^{-34} \left(\frac{kg \cdot m^2}{s}\right)}} = 7.39994 \cdot 10^{42} \left(s^{-1}\right). \quad (1)$$

$$G = \frac{c^5}{v_G^2 h} = \frac{\left[0.299792458 \cdot 10^9 \left(\frac{m}{s}\right)\right]^5}{\left[7.4 \cdot 10^{42} \left(s^{-1}\right)\right]^2 \cdot 6.626070040 \cdot 10^{-34} \left(\frac{kg \cdot m^2}{s}\right)} = 6.6739669698 \cdot 10^{-11} \left(\frac{m^3}{kg \cdot s^2}\right). \quad (2)$$

Where  $G$  – gravitational constant:  $G = 6.67408(31) \cdot 10^{-11} \frac{m^3}{kg \cdot s^2}$ ;

$c$  – speed of light in vacuum:  $c = 0.299792458(\text{exactly}) \cdot 10^9 \frac{m}{s}$ ;

$h$  – Planck's constant:  $h = 6.626070040(81) \cdot 10^{-34} J \cdot s = 6.26070040(81) \cdot 10^{-34} \frac{kg \cdot m^2}{s}$ .

However, the relation (2) is universal, since the other constants ( $c, h$ ) can be found from it:

$$h = \frac{c^5}{v_G^2 G} = \frac{\left[0.299792458 \cdot 10^9 \left(\frac{m}{s}\right)\right]^5}{\left[7.4 \cdot 10^{42} \left(s^{-1}\right)\right]^2 \cdot 6.6739669698 \cdot 10^{-11} \left(\frac{m^3}{kg \cdot s^2}\right)} = 6.626070040 \cdot 10^{-34} \left(\frac{kg \cdot m^2}{s}\right).$$

$$c = \sqrt[5]{v_G^2 G h} = \sqrt[5]{\left[7.4 \cdot 10^{42} \left(s^{-1}\right)\right]^2 \cdot 6.6739669698 \cdot 10^{-11} \left(\frac{m^3}{kg \cdot s^2}\right) \cdot 6.626070040 \cdot 10^{-34} \left(\frac{kg \cdot m^2}{s}\right)} = 0.299792458 \cdot 10^9 \left(\frac{m}{s}\right).$$

Since the constants  $c, h$  are the characteristics of the electromagnetic field, therefore the oscillation frequency  $vG$  is a universal constant of the oscillation frequency the waves of a unified field of the Universe. It has the same level of significance for the material world as the constants  $c, g, h$

### Biography

Valentyn Alekseevitch Nastasenko, The Kherson State Maritime Academy Ukraine, faculties Electrical engineering and electronics, the department of transport technologies. Professor of the department of transport technologies candidate of Dr technical sciences. A sphere of scientific interests includes quantum physics, the theory of gravitation, fundamentals of the material world and the birth of the Universe, the author of more than 50 scientific works in these spheres..

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