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On the possibility of the numeric periodicity of fundamental physical constants G, h, c and new method of their refining

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Currently, the force of gravity is determined by the value FG of interaction between the two point bodies of mass m_1, m_2 (kg), which are located at a distance r (m) between them, according to the law of world gravitation discovered by Newton. However, the force F_G , which is found for the interaction of point objects, cannot strictly characterize the strength of the gravitational field, which have a spatial structure that cover the volume of the observable universe sphere. Therefore, the application of Newton's law for its finding is incorrect. This disadvantage is eliminated on the basis of found parameters of the gravitational field waves: the frequency ν_G, the wavelength λ_G, the energy of this wave $E_G=h\nu_G$ (where h - is the Plank's constant) and the mass equivalent m_G of this wave, which is related to the Plank's mass mp with fundamental physical constants: h, the gravitational constant G and the speed c of light in vacuum. In this case, the total mass m_2 of the gravitational field waves in Newton's law is replaced by its equivalent Nm_G, where N – is the number of wavelengths λ_G at a distance r to any object of mass m_1, which gives the value $N=r/\lambda_G$. These parameters allows us to find a new strict physical dependence for the force F_G. With expressing in it the constants G, h, c, within the framework of their dimension, through the Plank's values of the length

l_p, time t_p, and the mass m_p, we get: $F_G = G\frac{m_1 m_2}{r^2} = G\frac{m_1 N h\nu_G}{r^2 c^2} = G\frac{m_1 r h\nu_G}{\lambda_G r^2 c^2} = G\frac{m_1 h\nu_G}{\lambda_G r c^2} = \frac{Gh\nu_G}{\lambda_G c^2}\times\frac{m_1}{r} = c^2\times\frac{m_1}{r}(N).$ From this dependence it follows that the force F_G of action the gravitational field on an object of mass m1, within the framework of the law $E=m_1c^2$, is energetic. It is directly proportional to the total energy of the mass of selected body and is inversely proportional to the distance r between it and the chosen point of the gravitational field.

Biography

Valentyn Alekseevitch Nastasenko is a candidate of Doctor of Technical Sciences. He is currently working as Professor in the Department of Transport Technologies at the Faculty of Electrical Engineering and Electronics of Kherson State Maritime Academy, Ukraine. His sphere of scientific interests includes cutoff tools and hard-alloy multifaceted unresharpenable plates. He is the author of more than 50 scientific works in these spheres.

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