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Calculation of the Speed Eta-muons of the Gravitational Interaction $\boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0s}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0p}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0ps}}$ – on base of the theory of the interaction

Main law of the gravitation – expression relationship between gravitational constant and gravitational moment of the energy $\rightarrow \boldsymbol{\Upsilon^2_{n0}}, \boldsymbol{\Upsilon^2_{n0s}}, \boldsymbol{\Upsilon^2_{nop}}, \boldsymbol{\Upsilon^2_{nops}}$.

Key words: Graviton, eta-muon, waves of energy, spectrum of the waves of the energy, power of the single eta-muon, speed of gravitons, energy of the black hole, Universe, our Universe, Potential energy of the gravitational field, space-energy, megagalactic, galactic, stellar and planetary gravitational moments of the energy, gravitational constant.

Annotation: Model of gravitational interactions constructed on the basis of the theory of interaction and the star mechanics from the theory of planets of no classical physics. As a result we can spot all gravitational constants of the no classical theory of gravitation, such as: velocity, energies and radiuses of activity eta-muons or gravitons of all spaces-energy of our Universe; the gravitational moments of energy and accordingly potential gravitational energies of black holes of planets, stars, galaxies, megagalaxies and a gigagalaxies of all spaces-energy of ours the Universe. The gravitation main law is functional connection of a gravitation constant with all gravitational constants enumerated above. In other words, we can calculate a gravitation constant from world constants of the Universe of defined from not the classical theory of interaction.

Article1. Calculation of the speed eta-muons of the gravitational interaction $\boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0s}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0p}}, \boldsymbol{\beta_\gamma}\mathbb{N}_{\mathbf{0ps}}$ – on base of the theory of the interaction.

Main law of the gravitation – expression relationship between gravitational constant and gravitational moment of the energy $\rightarrow \boldsymbol{\Upsilon^2_{n0}}, \boldsymbol{\Upsilon^2_{n0s}}, \boldsymbol{\Upsilon^2_{nop}}, \boldsymbol{\Upsilon^2_{nops}}$.

1) We shall define speeds gravitons on base of the theory of the interaction. If oscillator of the eta- muons are a field waves of the energy that for they act law of the square of the moment of the energy:

$\sqrt{\hbar \cdot V_0} = \Psi_0 \cdot \beta$, where β – energy of the wave; $\Psi_0 = 1!$ then: $\sqrt{\hbar \cdot V_0} = \beta;\ \ \hbar \cdot V_0 = \beta^2;$

$$\beta = \hbar \cdot \omega;\ \ \omega = \frac{\beta}{\hbar};\ \ V_0 = \omega \cdot r_0; \rightarrow \hbar \cdot \omega \cdot r_0 = \beta^2;\ \ \hbar \cdot \frac{\beta}{\hbar} \cdot r_0 = \beta^2;\ \ \beta \cdot r_0 = \beta^2;\ r_0 = \beta; \rightarrow$$

$\rightarrow$ internal radius of the wave r_0 equal it energy β.

We shall express parameters of the waves of the energy through eta-muon interpretation:

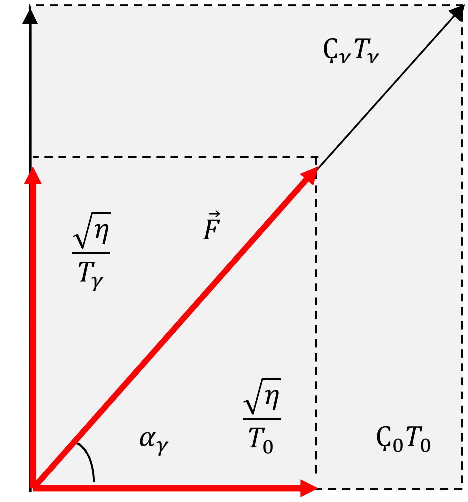
$$\beta = \mu \cdot \omega^2;\ \ \omega = \frac{\beta}{\hbar};\ \ \beta = \mu \cdot \left(\frac{\beta}{\hbar}\right)^2;\ \mu = \frac{\hbar^2}{\beta};\ \eta \cdot V_0 = \hbar;\ V_0 = \frac{\beta^2}{\hbar};\ \eta \cdot \frac{\beta^2}{\hbar} = \hbar;\ \eta = \frac{\hbar^2}{\beta^2};$$

$\sqrt{\eta} = \frac{\hbar}{\beta};\ \mu = \hbar \cdot \frac{\hbar}{\beta} = \hbar \cdot \sqrt{\eta};\ \boxed{\mu = \hbar \cdot \sqrt{\eta}}\ \ (\eta \cdot V_0) \cdot V_0 = \beta^2;\ \eta = \frac{\beta^2}{V_0^2};\ \ \sqrt{\eta} = \frac{\beta}{V_0}; \rightarrow$ impulse of the eta-muon within wave of the energy.

For radiated eta-muon, moment of the energy is an unit: $M_\mu = 1!\ \ M_\mu = \mu \cdot \omega_\gamma \cdot Ç_\gamma = 1;$

$$\mu = \frac{1}{Ç_\gamma \cdot \omega_\gamma};\ \ M_\mu = \beta_\mu \cdot r_\mu = 1;\ \ r_\mu = \frac{1}{\beta_\mu};\ \ \omega_\gamma \cdot r_\gamma = Ç_\gamma;\ \ \omega_\gamma = Ç_\gamma \cdot \beta_\gamma; \rightarrow \mu = \frac{1}{Ç_\gamma^2 \cdot \beta_\gamma};\ \ M_\mu^2 = \Psi_\mu \cdot \beta_\mu = 1;$$

$$\Psi_\mu = \mu \cdot Ç_\gamma^2 = \frac{1}{\beta_\mu};$$



Equation of power of the single eta-muon:

$$\tan\alpha_\gamma = \frac{\sqrt{\eta}/T_\gamma}{\sqrt{\eta}/T_0} = \frac{T_0}{T_\gamma};\; \cos\alpha_\gamma = \frac{\text{Ç}_0 T_0}{\text{Ç}_\gamma T_\gamma} = \frac{\text{Ç}_0}{\text{Ç}_\gamma}\cdot\tan\alpha_\gamma\,;\; \sqrt{F} = \sqrt{\frac{\sqrt{\eta}}{T_\gamma}} + \sqrt{\frac{\sqrt{\eta}}{T_0}};\quad F = \left(\sqrt{\frac{\sqrt{\eta}}{T_\gamma}} + \sqrt{\frac{\sqrt{\eta}}{T_0}}\right)^2 = \frac{\beta_\mu}{\text{Ç}_\gamma T_\gamma};\; \frac{\sqrt{\eta}}{T_\gamma}\cdot\left(1+\sqrt{\frac{T_\gamma}{T_0}}\right)^2 = \frac{\beta_\mu}{\text{Ç}_\gamma T_\gamma};$$

$$\text{Ç}_\gamma\cdot\sqrt{\eta}\cdot\left(1+\sqrt{\frac{T_\gamma}{T_0}}\right)^2 = \beta_\mu;\; \left(1+\sqrt{\frac{T_\gamma}{T_0}}\right)^2 = \left(1+\frac{1}{\sqrt{\tan\alpha_\gamma}}\right)^2 = \frac{1}{\sin\alpha_\gamma};$$

$\frac{\text{Ç}_\gamma\sqrt{\eta}}{\sin\alpha_\gamma} = \beta_\gamma$; now we possess full system of the equations for determination Ç_γ:

$$\left\{\begin{array}{l} \boldsymbol{\mu} = \hbar\cdot\sqrt{\boldsymbol{\eta}};\\ \boldsymbol{\Psi}_\mu = \boldsymbol{\mu}\cdot\text{Ç}_\gamma^2 = \frac{1}{\beta_\mu};\\ \frac{\text{Ç}_\gamma\cdot\sqrt{\eta}}{\sin\alpha_\gamma} = \boldsymbol{\beta}_\mu;\\ \boldsymbol{\beta}_\mu\cdot\boldsymbol{r}_\mu = \mathbf{1};\\ \mathbf{Cos}\,\boldsymbol{\alpha}_\gamma = \frac{\text{Ç}_0 T_0}{\text{Ç}_\gamma T_\gamma};\\ \frac{T_0}{T_\gamma} = \tan\boldsymbol{\alpha}_\gamma; \end{array}\right\}$$

$$\frac{\text{Ç}_\gamma\cdot\sqrt{\eta}}{\sin\alpha_\gamma} = \boldsymbol{\beta}_\mu = \frac{1}{r_\mu};\; \sqrt{\boldsymbol{\eta}} = \frac{\sin\alpha_\gamma}{\text{Ç}_\gamma\cdot r_\mu};\; \boldsymbol{\Psi}_\mu = \boldsymbol{\mu}\text{Ç}_\gamma^2 = \frac{1}{\beta_\mu} = \boldsymbol{r}_\mu;\; \boldsymbol{\mu} = \frac{r_\mu}{\text{Ç}_\gamma^2};\; \frac{\sqrt{\eta}}{\mu} = \frac{\text{Ç}_\gamma\cdot\sin\alpha_\gamma}{r_\mu^2} = \frac{1}{\hbar};$$

$$\text{Ç}_\gamma = \frac{r_\mu^2}{\hbar\cdot\sin\alpha_\gamma};\; \cos\boldsymbol{\alpha}_\gamma = \frac{\text{Ç}_0 T_0}{\text{Ç}_\gamma T_\gamma} = \frac{\text{Ç}_0}{\text{Ç}_\gamma}\cdot\tan\boldsymbol{\alpha}_\gamma\,;\; \text{Ç}_\gamma = \text{Ç}_0\cdot\frac{\tan\alpha_\gamma}{\cos\alpha_\gamma};\; \text{Ç}_\gamma = \frac{r_\mu^2}{\hbar\cdot\sin\alpha_\gamma} =$$

$$= \text{Ç}_0\cdot\frac{\tan\alpha_\gamma}{\cos\alpha_\gamma};\; \frac{r_\mu^2}{\hbar} = \text{Ç}_0\cdot(\tan\boldsymbol{\alpha}_\gamma)^2;\; (\tan\boldsymbol{\alpha}_\gamma)^2 = \frac{r_\mu^2}{\text{Ç}_0\hbar};\; \sqrt{\tan\boldsymbol{\alpha}_\gamma} = \frac{\sqrt{r_\mu}}{(\text{Ç}_0\cdot\hbar)^{1/4}};$$

$$\sqrt{\cot\boldsymbol{\alpha}_\gamma} = \frac{(\text{Ç}_0\cdot\hbar)^{1/4}}{\sqrt{r_\mu}};\; \sqrt{\sin\boldsymbol{\alpha}_\gamma} = \frac{1}{1+\sqrt{\cot\alpha_\gamma}} = \left(1+\frac{(\text{Ç}_0\cdot\hbar)^{1/4}}{\sqrt{r_\mu}}\right)^{-1};$$

$$\sin\boldsymbol{\alpha}_\gamma = \left(1+\frac{(\text{Ç}_0\cdot\hbar)^{1/4}}{\sqrt{r_\mu}}\right)^{-2};\; \boxed{\text{Ç}_\gamma = \frac{r_\mu^2}{\hbar\cdot\sin\alpha_\gamma} = \frac{r_\mu^2}{\hbar}\cdot\left(1+\frac{(\text{Ç}_0\cdot\hbar)^{1/4}}{\sqrt{r_\mu}}\right)^2} \rightarrow$$

we have defined Ç_γ – speed a graviton in general type. If substitute in equation of the speeds gravitational radiuses and corresponding to him moments of the impulse $\hbar$ from spectrum of the waves of the energy , we shall get speeds a gravitons for all type gravitational interaction.

$r_\mu = \frac{1}{\beta_\gamma\mathbb{N}_0} \rightarrow$ gravitational radius of our universe.

$$\hbar = \hbar_p\sqrt{\mathbb{N}_0}; \rightarrow \boxed{\text{Ç}_{\gamma no} = \frac{\left(\frac{1}{\beta_\gamma\mathbb{N}_0}\right)^2}{\hbar_p\sqrt{\mathbb{N}_0}}\cdot\left(1+\frac{(\text{Ç}_0\hbar_p\sqrt{\mathbb{N}_0})^{1/4}}{\sqrt{\frac{1}{\beta_\gamma\mathbb{N}_0}}}\right)^2 = \frac{1}{\beta_\gamma^2\cdot\hbar_p\cdot\mathbb{N}_0^{5/2}}\cdot\left(1+\sqrt{\boldsymbol{\beta}_\gamma\mathbb{N}_0}\cdot\left(\text{Ç}_0\hbar_p\sqrt{\mathbb{N}_0}\right)^{1/4}\right)^2}$$

$r_\mu = \frac{1}{\beta_\gamma\mathbb{N}_{os}} \rightarrow$ gravitational galactic radius of the star.

$\hbar = \hbar_e\sqrt{\mathbb{N}_{os}}; \rightarrow$

$$\boxed{Ç_{\gamma nos} = \frac{\left(\frac{1}{\beta_\gamma \mathbb{N}_{os}}\right)^2}{\hbar_e\sqrt{\mathbb{N}_{os}}} \cdot \left(1 + \frac{\left(Ç_0\hbar_e\sqrt{\mathbb{N}_{os}}\right)^{1/4}}{\sqrt{\frac{1}{\beta_\gamma \mathbb{N}_{os}}}}\right)^2 = \frac{1}{\beta_\gamma^2 \cdot \hbar_e \cdot \mathbb{N}_{os}^{5/2}} \cdot \left(1 + \sqrt{\beta_\gamma \mathbb{N}_{os}} \cdot \left(Ç_0\hbar_e\sqrt{\mathbb{N}_{os}}\right)^{1/4}\right)^2}$$

$r_\mu = \dfrac{1}{\beta_\gamma \mathbb{N}_{op}}$ → gravitational planetary radius of the star.

$\hbar = \hbar_\gamma \mathbb{N}_{op}^2;$

$$\rightarrow \boxed{Ç_{\gamma nop} = \frac{\left(\frac{1}{\beta_\gamma \mathbb{N}_{op}}\right)^2}{\hbar_\gamma \mathbb{N}_{op}^2} \cdot \left(1 + \frac{\left(Ç_0\hbar_\gamma \mathbb{N}_{op}^2\right)^{1/4}}{\sqrt{\frac{1}{\beta_\gamma \mathbb{N}_{op}}}}\right)^2 = \frac{1}{\beta_\gamma^2 \cdot \hbar_\gamma \cdot \mathbb{N}_{op}^4} \cdot \left(1 + \sqrt{\beta_\gamma \mathbb{N}_{op}} \cdot \left(Ç_0\hbar_\gamma \mathbb{N}_{op}^2\right)^{1/4}\right)^2}$$

2) we shall define gravitational numbers $\mathbb{N}_0, \mathbb{N}_{os}, \mathbb{N}_{op}$ and corresponding to him gravitational radiuses.

From spectrum of the waves of the energy we know, that length field and not field gravitational waves of the energy are a length of the gravitational radius our universe:

$$\lambda_G = 2\pi\alpha \cdot \beta_\gamma \cdot \frac{Ç_0}{V_{0\gamma}} = \frac{2\pi}{\sqrt{\beta_\gamma}} \cdot \frac{Ç_0}{V_{0\sqrt{1}}} = \frac{2\pi_\gamma}{\beta_\gamma} = \frac{2\pi}{\beta_\gamma \mathbb{N}_0}!\text{ we shall define } \mathbb{N}_0\text{:}\quad \frac{2\pi}{\sqrt{\beta_\gamma}} \cdot \frac{Ç_0}{V_{0\sqrt{1}}} = \frac{2\pi}{\beta_\gamma \mathbb{N}_0};$$

$$\frac{Ç_0}{\sqrt{\beta_\gamma} \cdot V_{0\sqrt{1}}} = \frac{1}{\beta_\gamma \mathbb{N}_0};\quad \mathbb{N}_0 = \frac{V_{0\sqrt{1}}/Ç_0}{\sqrt{\beta_\gamma}};\quad V_{0\sqrt{1}} = C_0\sqrt{1 - X^2};\quad \beta_\gamma = \frac{X^{8/3}}{\alpha^{2/3}} \cdot \frac{\left(1 - \sqrt{X}\right)^{4/3}}{(1 - X^2)^{1/3}};\quad \frac{C_0}{Ç_0} = X;$$

$$\mathbb{N}_0 = \frac{X \cdot \sqrt{1 - X^2}}{\frac{X^{4/3}}{\alpha^{1/3}} \cdot \frac{\left(1 - \sqrt{X}\right)^{2/3}}{(1 - X^2)^{1/6}}} = \frac{\alpha^{1/3}}{X^{1/3}} \cdot \frac{(1 - X^2)^{2/3}}{\left(1 - \sqrt{X}\right)^{2/3}} \sim \frac{\alpha^{1/3}}{X^{1/3}};\quad \mathbb{N}_0 \sim \sqrt[3]{\frac{\alpha}{X}};\quad \frac{2\pi_\gamma}{\beta_\gamma} = \frac{2\pi}{\beta_\gamma \mathbb{N}_0};\ \mathbb{N}_0 = \frac{\pi}{\pi_\gamma};\ \frac{\pi_\gamma}{\pi} = \frac{1}{\mathbb{N}_0} = \sqrt[3]{\frac{X}{\alpha}};$$

$$\hbar_p = \frac{X^{25/12}}{\alpha^{1/3}} \cdot \frac{\left(1 - \sqrt{X}\right)^{2/3}}{(1 - X^2)^{2/3}} \sim \frac{X^{25/12}}{\alpha^{1/3}};\quad \hbar_e = \frac{X^{37/12}}{\alpha^{1/3}} \cdot \frac{\left(1 - \sqrt{X}\right)^{2/3}}{(1 - X^2)^{2/3}} \sim \frac{X^{37/12}}{\alpha^{1/3}};\quad \hbar_\gamma \sim \beta_\gamma^2 \cdot X^{9/20};$$

$$\mathbb{N}_0 = \sqrt[3]{\frac{\alpha}{X}} = 64521.8037;\quad \beta_\gamma \mathbb{N}_0 = 1.818856714 \cdot 10^{-33}\text{эрг};\quad r_0 = \frac{1}{\beta_\gamma \mathbb{N}_0} = 5.497959199 \cdot 10^{32}\text{см};$$

Gravitational numbers $\mathbb{N}_{os}$ и $\mathbb{N}_{op}$ and them gravitational radiuses shall define from main law of the gravitation: $\mathbb{G}$ – gravitational constant.

$$\boxed{\mathbb{G} = \frac{\frac{2\pi}{\beta_\gamma \mathbb{N}_0} \cdot Ç_0^4}{\frac{1}{\mathbb{N}_0} \cdot E_\mu \cdot \frac{Ç_{\gamma no}^2}{Ç_*^2}} = \frac{\frac{2\pi}{\beta_\gamma \mathbb{N}_{os}} \cdot Ç_0^4}{\frac{1}{\mathbb{N}_{os}} \cdot E_\mu \cdot \frac{Ç_{nos}^2}{Ç_*^2}} = \frac{\frac{2\pi\gamma}{\beta_\gamma \mathbb{N}_{op}} \cdot C_0^2 Ç_0^2}{\frac{1}{\mathbb{N}_{op}} \cdot E_\mu \cdot \frac{Ç_{nop}^2}{Ç_*^2}} = \frac{\frac{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}{\beta_\gamma \mathbb{N}_{ops}} \cdot C_0^4}{\frac{1}{\mathbb{N}_{ops}} \cdot E_\mu \cdot \frac{Ç_{nops}^2}{Ç_*^2}}}$$

$\boldsymbol{E_\mu} = \frac{\mathbf{1}}{\boldsymbol{\beta_\gamma}^{51/5}}$; → energy of the black hole of the our universe; $Ç_* = \frac{Ç_0}{\beta_\gamma^5}$ → maximum speed in universe; $\frac{1}{\mathbb{N}_0} \cdot E_\mu$ → energy of the black hole of the megagalaxy; $\frac{1}{\mathbb{N}_{os}} \cdot E_\mu$ → energy of the black hole of the galaxy; $\frac{1}{\mathbb{N}_{op}} \cdot E_\mu$ → energy of the black hole of the star; $\frac{1}{\mathbb{N}_{ops}} \cdot E_\mu$ → energy of the black hole of the planet;

$$\boldsymbol{E_{\mu no}} = \frac{\mathbf{1}}{\mathbb{N}_\mathbf{0}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma no}^2}{Ç_*^2}; \ \boldsymbol{E_{\mu nos}} = \frac{\mathbf{1}}{\mathbb{N}_{os}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nos}^2}{Ç_*^2}; \ \boldsymbol{E_{\mu nop}} = \frac{\mathbf{1}}{\mathbb{N}_{op}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nop}^2}{Ç_*^2}; \ \boldsymbol{E_{\mu nops}} \frac{\mathbf{1}}{\mathbb{N}_{ops}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nops}^2}{Ç_*^2};$$

Potential energy of the gravitational field of the megagalaxy, galaxy, star, planet. From determination of the main law of the gravitation we find expression for potential energy:

$$\boldsymbol{E_{\mu no}} = \frac{\mathbf{1}}{\mathbb{N}_\mathbf{0}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma no}^2}{Ç_*^2} = \frac{\mathbf{2\pi}}{\boldsymbol{\beta_\gamma}\mathbb{N}_\mathbf{0}} \cdot \frac{Ç_0^4}{\mathbb{G}}; \ \boldsymbol{E_{\mu nos}} = \frac{\mathbf{1}}{\mathbb{N}_{os}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nos}^2}{Ç_*^2} = \frac{\mathbf{2\pi}}{\boldsymbol{\beta_\gamma}\mathbb{N}_{os}} \cdot \frac{Ç_0^4}{\mathbb{G}};$$

$$\boldsymbol{E_{\mu nop}} = \frac{\mathbf{1}}{\mathbb{N}_{op}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nop}^2}{Ç_*^2} = \frac{\mathbf{2\pi\gamma}}{\boldsymbol{\beta_\gamma}\mathbb{N}_{op}} \cdot \frac{\boldsymbol{C_0^2} \cdot Ç_0^2}{\mathbb{G}}; \ \boldsymbol{E_{\mu nops}} = \frac{\mathbf{1}}{\mathbb{N}_{ops}} \cdot \boldsymbol{E_\mu} \cdot \frac{Ç_{\gamma nops}^2}{Ç_*^2} = \frac{\mathbf{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}}{\boldsymbol{\beta_\gamma}\mathbb{N}_{ops}} \cdot \frac{Ç_0^4}{\mathbb{G}}$$

$$\mathbb{G} = \frac{\frac{2\pi}{\beta_\gamma \mathbb{N}_0} \cdot Ç_0^4}{\frac{1}{\mathbb{N}_0} \cdot E_\mu \cdot \frac{Ç_{\gamma no}^2}{Ç_*^2}} = \frac{\frac{2\pi}{\beta_\gamma \mathbb{N}_{os}} \cdot Ç_0^4}{\frac{1}{\mathbb{N}_{os}} \cdot E_\mu \cdot \frac{Ç_{\gamma nos}^2}{Ç_*^2}}; \rightarrow Ç_{\gamma no} = Ç_{\gamma nos}; \rightarrow \frac{\left(\frac{1}{\beta_\gamma \mathbb{N}_0}\right)^2}{\hbar_p \sqrt{\mathbb{N}_0}} \sim \frac{\left(\frac{1}{\beta_\gamma \mathbb{N}_{os}}\right)^2}{\hbar_e \sqrt{\mathbb{N}_{os}}}; \rightarrow \hbar_p \mathbb{N}_0^{5/2} \sim \hbar_e \mathbb{N}_{os}^{5/2}$$

$$\mathbb{N}_{os}^{5/2} = \frac{\hbar_p}{\hbar_e} \cdot \mathbb{N}_0^{5/2}; \ \mathbb{N}_{os} = \mathbb{N}_0 \cdot \left(\frac{\hbar_p}{\hbar_e}\right)^{2/5}; \ \mathbb{N}_{os} = \frac{\mathbb{N}_0}{X^{2/5}} = \frac{\sqrt[3]{\frac{\alpha}{X}}}{X^{2/5}} = \frac{\alpha^{1/3}}{X^{11/15}} = 2.487742938 \cdot 10^{10};$$

$$\beta_\gamma \mathbb{N}_{os} = 7.012897479 \cdot 10^{-28} \text{erg}; \ r_{nos} = \frac{1}{\beta_\gamma \mathbb{N}_{os}} = 1.425944131 \cdot 10^{27} \text{см};$$

$$\mathbb{G} = \frac{\frac{2\pi}{\beta_\gamma \mathbb{N}_0} \cdot Ç_0^4}{\frac{1}{\mathbb{N}_0} \cdot E_\mu \cdot \frac{Ç_{\gamma no}^2}{Ç_*^2}} = \frac{\frac{2\pi\gamma}{\beta_\gamma \mathbb{N}_{op}} \cdot C_0^2 \cdot Ç_0^2}{\frac{1}{\mathbb{N}_{op}} \cdot E_\mu \cdot \frac{Ç_{\gamma nop}^2}{Ç_*^2}}; \rightarrow Ç_{\gamma nop} = Ç_{\gamma no} \cdot \sqrt{\gamma} \cdot \frac{C_0}{Ç_0}; \rightarrow \frac{1}{\beta_\gamma^2 \cdot \hbar_\gamma \cdot \mathbb{N}_{op}^4} = \frac{\sqrt{\gamma} \cdot \frac{C_0}{Ç_0}}{\beta_\gamma^2 \cdot \hbar_p \cdot \mathbb{N}_0^{5/2}}$$

$$\mathbb{N}_{op} = \frac{1}{\gamma^{1/8}} \cdot \left(\frac{Ç_0}{C_0}\right)^{1/4} \cdot \left(\frac{\hbar_p}{\hbar_\gamma}\right)^{1/4} \cdot \mathbb{N}_0^{5/8} \sim \frac{1}{\gamma^{1/8}} \cdot \frac{\alpha^{11/24}}{X^{83/60}} = 3.385003664 \cdot 10^{19}; \ \beta_\gamma \mathbb{N}_{op} = 9.54225748 \cdot 10^{-19}$$

$r_{nop} = \frac{1}{\beta_\gamma \mathbb{N}_{op}} = 1.047970045 \cdot 10^{18}$ см; now we shall define speeds $Ç_\gamma$ gravitons $\beta_\gamma \mathbb{N}_0, \beta_\gamma \mathbb{N}_{os}, \beta_\gamma \mathbb{N}_{op}$:

$$Ç_{\gamma no} \sim \frac{1}{\beta_\gamma^2 \cdot \hbar_p \cdot \mathbb{N}_0^{5/2}} = 2.110762701 \cdot 10^{92} \text{ СМ/sec}; \ \hbar_p \sim \frac{X^{25/12}}{\alpha^{1/3}} = 5.637809073 \cdot 10^{-30} \frac{\text{gr} \cdot \text{см}^2}{\text{sec}};$$

$$Ç_{\gamma nos} \sim \frac{1}{\beta_\gamma^2 \cdot \hbar_e \cdot \mathbb{N}_{os}^{5/2}} = 2.110762701 \cdot 10^{92}\ ^{\text{см}}/_{\text{sec}}; \quad \hbar_e \sim \frac{X^{37/12}}{\alpha^{1/3}}$$
$$= 6.107491311 \cdot 10^{-44} \frac{\text{гр} \cdot \text{см}^2}{\text{sec}};$$

$$Ç_{\gamma nop} \sim \frac{1}{\beta_\gamma^2 \cdot \hbar_\gamma \cdot \mathbb{N}_{op}^4} = 2.321436742 \cdot 10^{78}\ ^{\text{см}}/_{\text{sec}}; \quad \hbar_\gamma \sim \beta_\gamma^2 \cdot X^{9/20}$$
$$= 4.128788134 \cdot 10^{-82} \text{erg} \cdot \text{sec};$$

For determination of the $r_{nops} = \frac{1}{\beta_\gamma \mathbb{N}_{ops}}; \rightarrow$ gravitational orbital radius of the planetary system of the star, we use starry mechanics from theory of the planets:

$\boldsymbol{E_{sp}} = \frac{\boldsymbol{\gamma^2}}{\sqrt{\boldsymbol{\alpha}}} \cdot \frac{\mathbf{1}}{\boldsymbol{\beta_\gamma^2}} \cdot \frac{\mathbb{N}_{os}^2}{\mathbb{N}_{op}^2} \cdot \sqrt{\frac{\boldsymbol{r_s}}{\boldsymbol{r_{nop}}}}; \rightarrow$potential energy of the planetary matter mC_0^2 of the star.

$r_s \rightarrow$ radius of the star; $r_\mu \rightarrow$ radius of the black hole of the star; $(\boldsymbol{E_{sp}}) = \boldsymbol{E_{sp}} \cdot \frac{Ç_*^2}{\boldsymbol{C_0^2}} = \boldsymbol{E_{sp}} \cdot \frac{Ç_0^2}{\boldsymbol{C_0^2} \cdot \boldsymbol{\beta_\gamma^{10}}}; \rightarrow$ energy in hyperspace-energy of the universe:

$$\cos\alpha = \frac{r_\mu}{r_s}; \ \beta_\gamma \mathbb{N}_{op} = (E_{sp}) \cdot \frac{V_{эф}^2}{Ç_\gamma^2}; \ \begin{bmatrix} Ç_\gamma T_\gamma = r_{nops} \\ V_{эф} T_{эф} = r_\mu \end{bmatrix} \rightarrow \beta_\gamma \mathbb{N}_{op} = (E_{sp}) \cdot \frac{r_\mu^2}{r_{nops}^2} \cdot \frac{T_\gamma^2}{T_{эф}^2}; \ \frac{T_\gamma^2}{T_{эф}^2} = \frac{\beta_\gamma \mathbb{N}_{op}}{(E_{sp})} \cdot \frac{r_{nops}^2}{r_\mu^2};$$

$$\sqrt{\cos\alpha} = (\cos\alpha_\gamma)^2 \sim \frac{1}{(\tan\alpha_\gamma)^2} = \frac{T_\gamma^2}{T_{эф}^2}; \rightarrow \sqrt{\frac{r_\mu}{r_s}} \sim \frac{\beta_\gamma \mathbb{N}_{op}}{(E_{sp})} \cdot \frac{r_{nops}^2}{r_\mu^2}; \ \frac{r_\mu^{5/2}}{r_s^{5/2}} = \frac{\beta_\gamma \mathbb{N}_{op}}{(E_{sp})} \cdot \frac{r_{nops}^2}{r_s^2};$$

$$\sqrt{\frac{r_\mu}{r_s}} = \frac{(\beta_\gamma \mathbb{N}_{op})^{1/5}}{(E_{sp})^{1/5}} \cdot \left(\frac{r_{nops}}{r_s}\right)^{2/5}; \ (E_{sp}) \cdot \sqrt{\frac{r_\mu}{r_s}} = \frac{1}{\mathbb{N}_{op} \cdot \beta_\gamma^{51/5}}; \ (E_{sp})^{4/5} \cdot (\beta_\gamma \mathbb{N}_{op})^{1/5} \cdot \left(\frac{r_{nops}}{r_s}\right)^{2/5} = \frac{1}{\mathbb{N}_{op} \cdot \beta_\gamma^{51/5}};$$

$$(E_{sp}) \cdot (\beta_\gamma \mathbb{N}_{op})^{1/4} \cdot \sqrt{\frac{r_{nops}}{r_s}} = \frac{1}{\mathbb{N}_{op}^{5/4} \cdot \beta_\gamma^{51/4}}; \ (E_{sp}) = E_{sp} \cdot \frac{Ç_*^2}{C_0^2} = E_{sp} \cdot \frac{Ç_0^2}{C_0^2 \cdot \beta_\gamma^{10}}; \rightarrow E_{sp} \cdot \sqrt{\frac{r_{nops}}{r_s}} = \frac{\beta_\gamma^{10} \cdot \frac{C_0^2}{Ç_0^2}}{\mathbb{N}_{op}^{3/2} \cdot \beta_\gamma^{13}}$$

$$\frac{\gamma^2}{\sqrt{\alpha}} \cdot \frac{1}{\beta_\gamma^2} \cdot \frac{\mathbb{N}_{os}^2}{\mathbb{N}_{op}^2} \cdot \sqrt{\frac{r_s}{r_{nop}}} \cdot \sqrt{\frac{r_{nops}}{r_s}} = \frac{\left(\frac{C_0}{Ç_0}\right)^2}{\mathbb{N}_{op}^{3/2} \cdot \beta_\gamma^3}; \rightarrow \frac{\gamma^2}{\sqrt{\alpha}} \cdot \frac{\mathbb{N}_{os}^2 \cdot \sqrt{r_{nops}}}{(\beta_\gamma \mathbb{N}_{op})^{3/2}} = \frac{\left(\frac{C_0}{Ç_0}\right)^2}{\mathbb{N}_{op}^{3/2} \cdot \beta_\gamma^3}; \ \frac{\gamma^2}{\sqrt{\alpha}} \cdot \mathbb{N}_{os}^2 \cdot \sqrt{r_{nops}} = \frac{\left(\frac{C_0}{Ç_0}\right)^2}{\beta_\gamma^{3/2}}; \rightarrow$$

$$\boxed{\boldsymbol{r_{nops}} = \frac{\mathbf{1}}{\boldsymbol{\beta_\gamma} \mathbb{N}_{ops}} = \frac{\boldsymbol{\alpha}}{\boldsymbol{\gamma^4}} \cdot \frac{\left(\frac{\boldsymbol{C_0}}{\boldsymbol{Ç_0}}\right)^4}{\mathbb{N}_{os}^4 \cdot \boldsymbol{\beta_\gamma^3}}; \ \boldsymbol{\beta_\gamma} \mathbb{N}_{ops} = \frac{\boldsymbol{\gamma^4}}{\boldsymbol{\alpha}} \cdot \frac{\mathbb{N}_{os}^4 \cdot \boldsymbol{\beta_\gamma^3}}{\left(\frac{\boldsymbol{C_0}}{\boldsymbol{Ç_0}}\right)^4}; \ \mathbb{N}_{ops} = \frac{\boldsymbol{\gamma^4}}{\boldsymbol{\alpha}} \cdot \frac{\mathbb{N}_{os}^4 \cdot \boldsymbol{\beta_\gamma^2}}{\left(\frac{\boldsymbol{C_0}}{\boldsymbol{Ç_0}}\right)^4}}$$

$\mathbb{N}_{ops} = 8.571239048 \cdot 10^{21}$; $\beta_\gamma \mathbb{N}_{ops} = 2.416215107 \cdot 10^{-16}$erg; $r_{nops} = 4.13870436 \cdot 10^{15}$см;

3) we shall define gravitational moments of the energy: $Ƴ^2_{no}, Ƴ^2_{nos}, Ƴ^2_{nop}, Ƴ^2_{nops}$ from main law of the gravitation:

We shall express potential energies of the gravitational field as:

$$E_{\mu no} = (\mathbb{N}_*)_{no} \cdot \beta_\gamma \mathbb{N}_0; \; E_{\mu nos} = (\mathbb{N}_*)_{nos} \cdot \beta_\gamma \mathbb{N}_{os}; \; E_{\mu nop} = (\mathbb{N}_*)_{nop} \cdot \beta_\gamma \mathbb{N}_{op}; \; E_{\mu nops} = (\mathbb{N}_*)_{nops} \cdot \beta_\gamma \mathbb{N}_{ops};$$

где $\mathbb{N}_* \rightarrow$ number gravitons given gravifield. We shall substitute these expressions potential energies in main law of the gravitation:

$$\mathbb{G} = \frac{2\pi}{(\mathbb{N}_*)_{no}} \cdot \frac{\frac{Ç_0^4}{\beta_\gamma \mathbb{N}_0}}{\beta_\gamma \mathbb{N}_0} = \frac{2\pi}{(\mathbb{N}_*)_{nos}} \cdot \frac{\frac{Ç_0^4}{\beta_\gamma \mathbb{N}_{os}}}{\beta_\gamma \mathbb{N}_{os}} = \frac{2\pi\gamma}{(\mathbb{N}_*)_{nop}} \cdot \frac{\frac{C_0^2 \cdot Ç_0^2}{\beta_\gamma \mathbb{N}_{op}}}{\beta_\gamma \mathbb{N}_{op}} = \frac{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}{(\mathbb{N}_*)_{nops}} \cdot \frac{\frac{C_0^4}{\beta_\gamma \mathbb{N}_{ops}}}{\beta_\gamma \mathbb{N}_{ops}}$$

where : $\frac{2\pi}{(\mathbb{N}_*)_{no}} = Ƴ^2_{no}; \; \frac{2\pi}{(\mathbb{N}_*)_{nos}} = Ƴ^2_{nos}; \; \frac{2\pi\gamma}{(\mathbb{N}_*)_{nop}} = Ƴ^2_{nop}; \; \frac{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}{(\mathbb{N}_*)_{nops}} = Ƴ^2_{nops}; \rightarrow$ megagalactic, galactic, stellar and planetary gravitational moments of the energy.

$$Ƴ^2_{no} = \frac{2\pi}{(\mathbb{N}_*)_{no}} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_0)^2}{Ç_0^4}; \; Ƴ^2_{nos} = \frac{2\pi}{(\mathbb{N}_*)_{nos}} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_{os})^2}{Ç_0^4}; \; Ƴ^2_{nop} = \frac{2\pi\gamma}{(\mathbb{N}_*)_{nop}} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_{op})^2}{C_0^2 \cdot Ç_0^2}$$

$$Ƴ^2_{nops} = \frac{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}{(\mathbb{N}_*)_{nops}} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_{ops})^2}{C_0^4}$$

compute $\mathbb{G}$ – gravitational constant.

1. $$E_{\mu no} = \frac{E_\mu}{\mathbb{N}_0} \cdot \frac{Ç^2_{\gamma no}}{Ç^2_*} = \frac{2\pi}{\beta_\gamma \mathbb{N}_0} \cdot \frac{Ç_0^4}{\mathbb{G}}; \; \frac{1}{\beta_\gamma^{1/5}} \cdot \frac{Ç^2_{\gamma no}}{Ç_0^2} = \frac{2\pi}{\beta_\gamma} \cdot \frac{Ç_0^4}{\mathbb{G}}; \; Ç_{\gamma no} = \frac{\sqrt{2\pi} \cdot Ç_0^3}{\beta_\gamma^{2/5} \cdot \sqrt{\mathbb{G}}} = \frac{1}{\beta_\gamma^2 \cdot \hbar_p \cdot \mathbb{N}_0^{5/2}}; \rightarrow$$

$$\mathbb{G} = 2\pi \cdot Ç_0^6 \cdot \beta_\gamma^{16/5} \cdot \hbar_p^2 \cdot \mathbb{N}_0^5 \sim 2\pi \cdot \frac{1}{X^{21/2}} \cdot \frac{X^{128/15}}{\alpha^{32/15}} \cdot \frac{X^{25/6}}{\alpha^{2/3}} \cdot \frac{\alpha^{5/3}}{X^{5/3}} = 2\pi \cdot \frac{X^{8/15}}{\alpha^{17/15}} = 6.673079122 \cdot 10^{-8} \frac{\text{см}^3}{\text{gr} \cdot \text{s}^2}$$

2. $$E_{\mu nos} = \frac{E_\mu}{\mathbb{N}_{os}} \cdot \frac{Ç^2_{\gamma nos}}{Ç^2_*} = \frac{2\pi}{\beta_\gamma \mathbb{N}_{os}} \cdot \frac{Ç_0^4}{\mathbb{G}}; \; Ç_{\gamma nos} = \frac{\sqrt{2\pi} \cdot Ç_0^3}{\beta_\gamma^{2/5} \cdot \sqrt{\mathbb{G}}} \sim \frac{1}{\beta_\gamma^2 \cdot \hbar_e \cdot \mathbb{N}_{os}^{5/2}}; \rightarrow \; \mathbb{G} = 2\pi \cdot Ç_0^6 \cdot \beta_\gamma^{16/5} \cdot \hbar_e^2 \cdot \mathbb{N}_{os}^5;$$

$$\mathbb{G} = 2\pi \cdot \frac{1}{X^{21/2}} \cdot \frac{X^{128/15}}{\alpha^{32/15}} \cdot \frac{X^{37/6}}{\alpha^{2/3}} \cdot \frac{\alpha^{5/3}}{X^{11/3}} = 2\pi \cdot \frac{X^{8/15}}{\alpha^{17/15}} = 6.673079122 \cdot 10^{-8} \frac{\text{см}^3}{\text{gr} \cdot \text{sec}^2}$$

3. $$E_{\mu nop} = \frac{E_\mu}{\mathbb{N}_{op}} \cdot \frac{Ç^2_{\gamma nop}}{Ç^2_*} = \frac{2\pi\gamma}{\beta_\gamma \mathbb{N}_{op}} \cdot \frac{C_0^2 \cdot Ç_0^2}{\mathbb{G}}; \; Ç_{\gamma nop} = \frac{\sqrt{2\pi\gamma} \cdot C_0 \cdot Ç_0^2}{\beta_\gamma^{2/5} \cdot \sqrt{\mathbb{G}}} \sim \frac{1}{\beta_\gamma^2 \cdot \hbar_\gamma \cdot \mathbb{N}_{op}^4};$$

$$\mathbb{G} = 2\pi\gamma \cdot C_0^2 \cdot Ç_0^4 \cdot \beta_\gamma^{16/5} \cdot \hbar_\gamma^2 \cdot \mathbb{N}_{op}^8 = 2\pi\gamma \cdot \frac{1}{X^{3/2}} \cdot \frac{1}{X^7} \cdot \frac{X^{128/15}}{\alpha^{32/15}} \cdot \beta_\gamma^4 \cdot X^{9/10} \cdot \frac{1}{\gamma} \cdot \frac{\alpha^{11/3}}{X^{166/15}}$$

$$= 2\pi \cdot \frac{X^{8/15}}{\alpha^{17/15}}!$$

$$\boxed{\mathbb{G} = 2\pi \cdot \frac{X^{8/15}}{\alpha^{17/15}} = 6.673079122 \cdot 10^{-8} \frac{\text{см}^3}{\text{gr}\cdot sec^2}}$$ → so gravitational mechanics works!

Now we can calculate speed $Ç_{\gamma nops}$ orbital gravitons $\beta_\gamma \mathbb{N}_{ops}$, potential energies and moments of the energy of the gravifields:

$$\frac{E_\mu}{\mathbb{N}_{ops}} \cdot \frac{Ç^2_{\gamma nops}}{Ç^2_*} = \frac{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}{\beta_\gamma \mathbb{N}_{ops}} \cdot \frac{C_0^4}{\mathbb{G}};\ \boxed{Ç_{\gamma nops} = \frac{Ç_0 \cdot C_0^2 \cdot \sqrt{2\pi\alpha^{5/8} \cdot \gamma^{3/8}}}{\beta_\gamma^{2/5} \cdot \sqrt{\mathbb{G}}} = 3.478293711 \cdot 10^{64}\ cm/_{sec}}$$

$$E_{\mu no} = \frac{2\pi}{\beta_\gamma \mathbb{N}_0} \cdot \frac{Ç_0^4}{\mathbb{G}} = 10^{138.4707877}\text{erg};\ E_{\mu nos} = \frac{2\pi}{\beta_\gamma \mathbb{N}_{os}} \cdot \frac{Ç_0^4}{\mathbb{G}} = 10^{132.8846887}\text{erg};\ E_{\mu nop} = \frac{2\pi\gamma}{\beta_\gamma \mathbb{N}_{op}} \cdot \frac{C_0^2 \cdot Ç_0^2}{\mathbb{G}} =$$

$$= 6.816632696 \cdot 10^{95}\text{erg};\ E_{\mu nops} = \frac{2\pi\alpha^{5/8}\cdot\gamma^{3/8}}{\beta_\gamma \mathbb{N}_{ops}} \cdot \frac{C_0^4}{\mathbb{G}} = 6.043718463 \cdot 10^{65}\text{erg};$$

$$\Upsilon^2_{no} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_0)^2}{Ç_0^4} = 10^{-170.4128093}\text{erg} \cdot \text{см};\ \Upsilon^2_{nos} = \frac{\mathbb{G} \cdot (\beta_\gamma \mathbb{N}_{os})^2}{Ç_0^4} = 10^{-159.2406117}\text{erg} \cdot \text{см};$$

$$\Upsilon^2_{nop} = \frac{\mathbb{G}\cdot(\beta_\gamma \mathbb{N}_{op})^2}{C_0^2 \cdot Ç_0^2} = 10^{-113.042609}\text{erg} \cdot \text{см};\ \Upsilon^2_{nops} = \frac{\mathbb{G}\cdot(\beta_\gamma \mathbb{N}_{ops})^2}{C_0^4} = 4.952847382 \cdot 10^{-81}\text{erg} \cdot \text{см};$$