

Mass as result rotate piece of physical space

Report on the project “New Cartesian Physics”

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New Cartesian physics believes the physical vacuum as condition of the physical space that differs from the geometric space that moves, because it materially. Based on the identity of physical space and matter she explains the emergence of mass–energy equivalence of space rotation inside of the corpuscles, i.e. mass it is piece of physical space which rotates has conserved energy of rotation.

Mass are defined in the New Cartesian physics from the existence of the pressure of the universe and the centrifugal acceleration rotating physical space inside the corpuscles, the radius of which is equal to the Compton wavelength. Let's notice, that the Compton wavelength of a particle is equivalent to the wavelength of a photon whose energy is the same as the rest-mass energy of the particle [1.2]

$$hv = m_0c^2 \Leftrightarrow r = \lambda = \frac{h}{m_0c}$$

In corpuscle the forces of the universe $F = \frac{ch}{4\pi r^2}$ is balanced by centrifugal force internal rotation of space, reaching the speed of light at a distance of Compton wavelength $F = \frac{mc^2}{r}$.

From this we get equality $\frac{ch}{4\pi r^2} = \frac{mc^2}{r}$, rewrite this expression $ch = \frac{mc^2}{r} 4\pi r^2$. Here the left stands the flow force of the universe, and on the right flow of centrifugal force. Make a mass m for the integral symbol, we obtain [4]

$$ch = m \oint \frac{c^2}{r} ds$$

Hence the mass of the particles is equal to the flow of forces of the universe, divided on the flow of centrifugal acceleration:

$$m = \frac{ch}{\oint \frac{c^2}{r} ds}$$

This is Newton's second law for a rotating space inside the corpuscles.

It is clear that here we are dealing with an inert mass, because it is a factor in the second law of Newton.

It should be borne in mind that in the center of the corpuscles speed of movement space reaches the speed of light and that it did not exceed it you must add the formula of Lorentz factor γ [3].

$$\gamma m = \frac{ch}{\oint \frac{c^2}{r} ds}$$

γ – Lorentz factor, which takes into account the movement of space inside the corpuscles reaches about light speed

$$\gamma = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

Next, we obtain an expression for the gravitational mass. Denote the denominator expression as follows:

$$\gamma_0 M = \oint \frac{c^2}{r} ds$$

Here γ_0 - gravitational constant which translates the mass expressed in kg, in a stream of a vector of centrifugal acceleration through the closed surface [5].

Given that the Compton wavelength equal to $r = \frac{h}{mc}$, further rewrite

$$\oint \frac{c^2}{r} ds = \frac{c^2 4\pi r^2}{r} = \frac{ch}{m}, \text{ then get:}$$

$$\gamma_0 M = \frac{ch}{\gamma m}$$

Hence we have the expression of the Lorentz factor

$$\gamma = \frac{ch}{\gamma_0 M m}$$

As in corpuscle $M = m$, we will have of the Lorentz factor:

$$\gamma = \frac{ch}{\gamma_0 M^2}$$

The Relativistic effects arising from the fact that the speed of light in all frames of reference is identical and does not depend on speed of its source play the basic role in transformation of space into substance

Calculate the value γ for Proton

$$\gamma = \frac{ch}{\gamma_0 M^2} = \frac{2,99792458 * 10^8 * 6,62606X * 10^{-34}}{6,67384 * 10^{-11} * (1,672621777 * 10^{-27})^2} \cong 1,06390973 * 10^{39}$$

The emergence of potential field is accompanied by time dilation

$$\Delta\tau = \frac{\Delta\tau_0}{\sqrt{1-\frac{v^2}{c^2}}} = \Delta\tau_0 * \gamma$$

For a Proton $\Delta\tau = \Delta\tau_0 * \gamma = \Delta\tau_0 * 1,06390973 * 10^{39}$

If the period of wave Compton inside of Proton

$$\Delta\tau_0 = \frac{\lambda}{c} = \frac{1,321409847 \cdot 10^{-15}}{2,99792458 \cdot 10^8} = 0,44077488 * 10^{-23} \text{ s}$$

$$\lambda = 1,321409847 \cdot 10^{-15} \text{ m}$$

Then for the stationary observer will

$$\Delta\tau = \Delta\tau_0 * \gamma = 0,44077488 * 10^{-23} * 1,06390973 * 10^{39} = 0,46894468 * 10^{16} \text{ s}$$

In the year $31536000 \text{ c} = 0,31536 * 10^8 \text{ s}$

Thus, one oscillation of wave Compton occurs over

$$0,46894468 * 10^{16} / 0,31536 * 10^8 = 1,4870138 * 10^8 \text{ years}$$

It is obvious that the time dilation inside particles plays a major role in stabilizing the particles and determines the time of their breakup.

References

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5. https://en.wikipedia.org/wiki/Gravitational_constant