Short Communications

Antimatter in New Cartesian Generalization of Modern Physics

Boris S Dzhechko*

City of Sterlitamak, Bashkortostan, Russia

***Corresponding Author:** Boris S Dzhechko, City of Sterlitamak, Bashkortostan, Russia.

New Cartesian generalization of modern physics, based on the identity of space and matter Descartes, replaces the concept of ether concept of moving space-matter. It reveals an obvious connection between relativity and quantum mechanics. The geometric interpretation of the thin structure constant allows a deeper understanding of its nature and provides the basis for its theoretical calculation. It points to the reason why there is no symmetry between matter and antimatter in the world.

The new Cartesian generalization of modern physics, which is based on the principle of the identity of space and matter, comes from Descartes ' statement that there is nothing in the world but vortices, i.e. the rotational movement of space, all the diversity of which we are not able to see and we can only guess about it. Copernicus, when he replaced the geocentric system of the universe with the heliocentric system, overlooked the fact that with the Earth around the Sun turns all the near-solar space. After all, in order not to complicate our lives, we often simply ignore the fact that the space around us together with us turns first around the earth's axis, then around the Sun, etc.in quantum mechanics, this statement of Descartes is reflected in the fact that Planck's constant has the meaning of the momentum of rotational motion. In addition, new Cartesian physics considers rectilinear motion as rotation around a circle of infinitely large diameter, and therefore it becomes possible to generalize the theory of relativity with quantum mechanics, if the curvilinear motion in the vortex is considered as rectilinear in infinitely small areas.

Thus, space, which is matter, moving relative to itself, acts as a medium forming vortices, of which the tangible objective world consists. In the concept of moving space-matter, the concept of irrational points as nested intervals of the same moving space obeying the Heisenberg inequality is introduced. With respect to these points, we can talk about both the speed of their movement v, and the speed of filling Cartesian voids formed during movement, which is equal to the speed of light c. Electrons are the reference points by which we can judge the motion of space-matter inside the atom. The movement of space-matter inside the atom suggests that there is a Cartesian void in it, which forces the electrons to perpetually move.

Insert the expression the constant of Somerfield of the fine structure, indicating what part of the speed of light is the speed of the electron $\alpha = \frac{v}{c} = \frac{e^2}{hc}$ in the formula of Lorentz transformation, which gives the reduction of the length $= l_0\sqrt{1 - \frac{v^2}{c^2}}$ get: $l = l_0\sqrt{1 - \left(\frac{e^2}{hc}\right)^2}$. Suppose that l and l_0 are the lengths of the circles l$= 2\pi R$ и $l_0 = 2\pi R_0$, then the Lorentz transform formula will take the form $R = R_0\sqrt{1 - \frac{v^2}{c^2}}$ and $R = R_0\sqrt{1 - \left(\frac{e^2}{hc}\right)^2}$ and $\frac{R_0^2 - R^2}{R_0} = \left(\frac{e^2}{hc}\right)^2$.

Expressing speed $v = c\sqrt{1 - \frac{R^2}{R_0^2}}$ and substituting in the formula of the wavelength of de Broille $R_0 = \frac{h}{mv}$ get $\sqrt{R_0^2 - R^2} = \frac{h}{mc}$, i.e. Compton's wavelength $\lambda_{\text{компт}} = \sqrt{R_0^2 - R^2}$

Reduction of linear sizes of areas of moving space-matter is a sign of formation of Cartesian emptiness which conducts according to the above given formulas to increase in speed of movement of irrational points of space-matter. The unattainable absolute Cartesian void (black hole) fills at the speed of light. The speed of light

---

is the limiting velocity of space-matter, relative to which the rest of its motion is compared through the parameter v/c

In addition, you can see that the classic electron radius is equal to $R_{кл} = \frac{\lambda^2_{Compt}}{\lambda_{de\,Br}} = \frac{R_0^2 - R^2}{R_0}$. Indeed, we will write three physical dimensions that have a dimension of length: Compton's wavelength of the electron $\lambda_{Compt} = \frac{h}{m_0 c}$; Bohr radius $R_{Bohr} = \frac{h}{m_0 e^2}$; classic electron radius $R_{clas} = \frac{e^2}{m_0 c^2}$ It is easy to see that they are related by a relation $R_{кл} = \frac{\lambda^2_{компт}}{R_{Bohr}}$. Substituting here $R_{Bohr} = \lambda_{de\,Br} = R_0$ and $\lambda_{Compt} = \sqrt{R_0^2 - R^2}$, get: $R_{clas} = \frac{\lambda^2_{Compt}}{\lambda_{de\,Br}} = \frac{R_0^2 - R^2}{R_0}$. From these formulas it is clear that the constant fine structure is equal to:

$$\alpha = \frac{v}{C} = \frac{e^2}{Ch} = \frac{\lambda_{Compt}}{\lambda_{de\,Br}} = \sqrt{1 - \frac{R^2}{R_0^2}}\;\text{и т. д.}$$

In here $R_0 = \lambda_{de\,Brp}$, R - his is also the de Broglie wavelength, but only shortened by the Lorentz transform. Accordingly we call R the Lorentz wavelength $R = \lambda_{Lorentz}$.

Of $\frac{\lambda_{Compt}}{\lambda_{de\,Br}} = \sqrt{1 - \frac{R^2}{R_0^2}}$ it can be seen that the Compton wavelength is $\lambda_{Compt} = \sqrt{R_0^2 - R^2}$. This length is the Pythagorean solution of a right triangle:
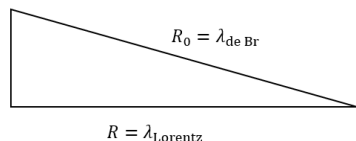

Figure 1

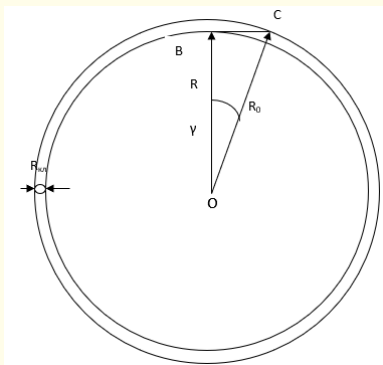Geometrically, these relationships can also be displayed as follows:

Figure 2

Here, the area of the large circle is $S_0 = \pi R_0^2$, and the area of the small circle is $S = \pi R^2$. The difference in their areas will be equal to $S_0 - S = \pi (R_0^2 - R^2)$ - this will be the area of the strip between their circles. If the area of this strip is divided by the circumference $2\pi R_0$, then we obtain approximately its width, i.e. classical radius of an electron Rcl. From a right triangle OBC, the Compton wavelength is $R_{Compt} = R_{Compт} = \sqrt{R_0^2 - R^2}$, I. e. is a segment of the tangent BC, then the fine structure constant will be equal to $\alpha = \frac{\lambda_{Compt}}{\lambda_{de\,Br}} = \sqrt{1 - \frac{R^2}{R_0^2}} = \frac{\sqrt{R_0^2 - R^2}}{R_0} = \sin\gamma$.

This sign obviously means the direction of the wave vector λ, which depends on the order of occurrence of the cause moving the particle. First, a void may appear, i.e. a shortened radius R, initiating the motion of space-matter expressed by the normal radius R_0. Perhaps on the contrary, space-matter moves first, which leads to the appearance of emptiness behind it. Otherwise, the vector R_0 can be ahead of the vector R or behind it at an angle π/2, while the wave vector λcompact changes its direction to the opposite. Changing the direction of this vector means the appearance of an antiparticle. This change of sign arose from the Lorentz transformation, which contains a square root, before which, at Dirac's suggestion, not only the plus sign (+) but also the minus sign (-) were taken into account. Therefore, here above everywhere before the square root, you must put a sign ±. From all this it follows that before the constant of the fine structure should also put the sign ± and, obviously, the same before The Planck constant ±h, which will mean a change in the rotation of space in the vortex in the opposite direction. Thus, particles and antiparticles differ from each other in the direction of rotation of space in them. In this case, one direction has a component directed to the center and creates a negative charge in it, and the other direction has a component directed from the center and creates a positive charge in it, i.e., a void in which space rotates at the speed of light. An example of the co-existence of particles and antiparticles is the electromagnetic wave, in which space in each half-wave rotates in opposite directions, making it neutral and capable of splitting under the action of strong fields. A particle with a negative charge-an electron exists next to its antiparticle-a proton. The increase in the mass of the positron to the mass of the proton occurs as a result of the fact that its movement in it reaches the speed of light and its mass increases, and the interaction time increases. We estimate the average velocity of space in a proton, based on its mass and the mass of the positron: mpoz=9,10938356 *10−31 кг и mp=1,672621923 69*10−27 кг

In addition, the appearance of a minus sign at time (-) means its turn into the past, which does not contribute to the appearance in the future. For this reason, there is no symmetry in the world between matter and antimatter, since the entire antimire is hidden in matter and in electromagnetic waves [1-13].

Bibliography

1. Dizhechko B.S. LAMBERT Academic Publishing.

2. https://en.wikipedia.org/wiki/Levitation_(paranormal)

3. Dizhechko BS. "Поведение вакуумных дырок в двигающемся пространстве-материи".

4. Dizhechko BS. "Principle of physical irrationality".

5. Dizhechko BS. "The Law of Constancy of a Stream of Forces".

6. Dizhechko BS. "Universe pressure".

7. https://en.wikipedia.org/wiki/Lorentz_factor

8. "Atomik Physics" by Max Born, London – Glasgow (1963).

9. Descartes, René. The World and Other Writings. Trans. Stephen Gaukroger. New York: Cambridge University Press (1998).

10. https://en.wikipedia.org/wiki/Compton_wavelength

11. Bousso R. "Positive vacuum energy and the n-bound". *Journal of High Energy Physics* 12 (2000).

12. Zlatev., *et al.* "Quintessence, cosmic coincidence and the cosmological constant". *Physical Review Letters* 82 (1998): 896.

13. http://gsjournal.net/Science-Journals-Papers/Author/180/Boris%20S.,%20Dizhechko

Volume 1 Issue 1 December 2019