

CLASSICAL AND SPECIAL THEORIES OF THE RELATIVITY

Kanarev Ph. M. - professor

Vorotyntsev A.V. - student

Abstract. The beginning of XXI century – progress of freedom of scientific thinking. Already students understand a full inconsistency STR. There is no force which could enslave their creative potential. Absurd academic doctrines STR, the captivated school and high school textbooks, are doomed. The new generation of scientists will reject them.

The classical theory of a relativity has appeared for a long time. In the greatest contribution to its creation have brought Galileo and Newton. It successfully solves the primary goals connected to activity of the person. However, in the beginning of XX century theoretical results which limited a scope of laws of the classical theory of a relativity to speeds considerably smaller speeds of light of 300000 km/s have been received. This fundamental consequence follows from Lorentz's transformations which appeared in the base of the Special theory of a relativity (STR), developed by A. Einstein. Experimental data which ostensibly confirm reliability STR were found also. However these data had no unequivocal interpretation of their reliability, therefore STR has been subjected to criticism from the moment of its birth. Now this criticism has reached apogee and proofs of an inaccuracy STR have appeared. In what their essence?

On Fig. 1 the circuit of parallel movement of mobile system of readout X'O'Y' concerning motionless XOY with a speed V is shown. Coordinate of a point K, located in on axis O'X' mobile system of readout, and time going in motionless t and mobile t' systems of readout are connected by dependences:

$$x' = x - Vt; \quad (1)$$

$$t' = t. \quad (2)$$

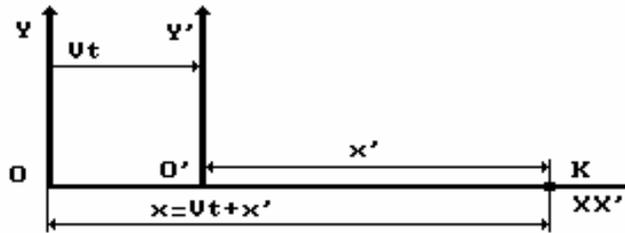


Fig. 1. The circuit to the analysis of transformations Galilee

Transformations Galilee (1) and (2) work in Euclidean space and are based on representations about space and time, as absolute characteristics of a universe, that is on axioms: the space is absolute also time absolute. It means, that in the Nature there are no such phenomena which could, stretch, compress or braid space. Is not present as well the phenomena which could accelerate or slow down rate of current of time.

Subsequently, being based on a postulate on a constancy of speed of light C , Lorentz has found, that the specified transition from mobile system of readout X'O'Y' in motionless XOY is connected to speed of light dependences (Fig. 2) [1]:

$$x' = \frac{x - Vt}{\sqrt{1 - V^2 / C^2}}; \quad (3)$$

$$t' = \frac{t - Vx/C^2}{\sqrt{1 - V^2/C^2}}. \quad (4)$$

From a ratio (3) implicitly follows, that with increase in speed $V \rightarrow C$ the size of a spatial interval x' decreases, that corresponds to a relativity of space. Similar consequence follows and from a ratio (4). At $V \rightarrow C$ the size t' also decreases, that is interpreted, as reduction of rate of current of time (Fig. 2) or - a relativity of time.

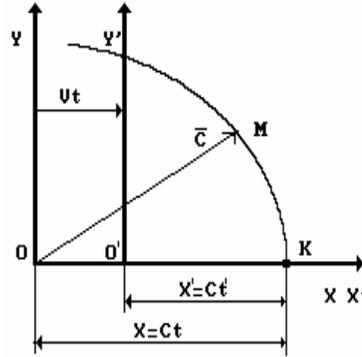


Fig. 2. The circuit to the analysis of transformations of Lorentz

So representation about a relativity of space and time was generated and paradoxical consequences have appeared. One of them has gone down to history of a science, as paradox of twins. Its essence that if from two brothers of twins one remain on the Earth, and the second will go to space travel on a rocket with a speed close by the speed of light from the formula (4) follows, that rate of current of time on a rocket will be slowed down also its passenger will grow old more slowly. On the Earth rate of current of time will not change and, the come back space traveller will meet the terrestrial brother the very old man. That the majority of physicists of XX century trusted in this fairy tale is surprising, ignoring its contradiction to common sense.

Return to common sense appeared hard. Almost hundred years left on finding the criterion proving reliability or an inaccuracy STR. The main requirement to this criterion – its full independence of the person. It is known, that such properties axioms possess. The first the professor of our university Kanarev Ph.M has paid attention to this feature axiomatic as the criterion. In result appeared, that scientists have not noticed for a long time an existing axiom of Unity of space of a matter and time. It unequivocally follows that space, the matter and time, being primary elements of a universe, possess the main properties: independence from each other and inseparability. They always exist together. In the Nature there is no such condition where there would be no space, and the matter would exist or there would be no neither spaces, nor a matter, and time would flow. This implies, that we have no right to take any information from mathematical formulas in which the space and time are shared. And in fact it – the main feature of transformations of Lorentz (3) and (4).

Apparently, in transformations (3) and (4) Lorentz's the spatial interval x' located in mobile system of readout, is separated from time t' current in this system. In reality such it does not happen. A changing spatial interval – always function of time. Therefore Lorentz's transformations describe not real, but a false relativity.

Let's pay attention to that at the formula (3) there is a coordinate x' which is fixed in mobile system of readout (Fig. 2), and in the formula (4) - only time t' which flows in same system of readout. Thus, in mathematical formulas (3) and (4) changing size of a spatial interval x' in mobile system of readout **is separated** from time t' current in this system of readout.

Now we know, that in reality to separate space from time it is impossible, therefore the specified equations cannot be analyzed separately from each other. The information received from transformations of Lorentz (3) and (4), will correspond to a reality only in that case when

they will look like in which the coordinate x' will be function of time t' . For this purpose we shall divide the first transformation (3) into the second (4), in result we shall have

$$\frac{x'}{t'} = \frac{x - Vt}{t - Vx / C^2}. \quad (5)$$

Now the mathematical formula (5) reflects dependence of coordinate x' on time t' . This implies, that the formula (5) works within the framework of the Axiom of Unity of space - matters - time, that is within the framework of reality. We shall pay attention that the matter (5) is present at the equation indirectly. Its role is carried out with speeds V and C . It is caused by that material objects can have speed only.

On Fig. 2 it is visible, that x is a coordinate of position of a light signal in motionless system of readout. It is equal to product of speed of movement of light C for a time t . If we shall substitute $x = Ct$ in the resulted formula (5) we shall receive coordinate $x' = Ct'$ which fixes position of a light signal in mobile system of readout. Where this signal is located? As we change coordinates x and x' at the moment of time t and t' it is located on conterminous axes OX and OX' , is more exact - in a point K - a point of crossing of light sphere with two axes OX and OX' (Fig. 2).

The geometrical sense of transformations of Lorentz is very simple. In them are fixed: coordinate x' of a point K in mobile system of readout and its coordinate x in motionless system of readout (Fig. 2). It - a point of crossing of light sphere with axes OX and OX' . And all sense of transformations of Lorentz. **Other information in these transformations is not present, and they do not reflect any physical effects.**

Important and that the resulted analysis of transformations of Lorentz gives to all mathematical symbols: x, x', t, t', V, C , included in these transformations, precise geometrical and physical sense. We shall look more attentively at Fig. 2. At $V \rightarrow C$ the size x' really decreases. It is quite natural, that time t' necessary for a light signal to pass distance x' decreases also. It also is the reason of reduction of a spatial interval x' and rate of current of time t' , and occurrence of paradox of twins. If to lead Lorentz's transformations to a kind corresponding to the Axiom of Unity of space - to a matter - to time all paradoxes disappear.

THE CONCLUSION

Physics of XX century widely used A. Einstein's authority for the proof of reliability of results of the scientific researches. It is one of the reasons of their errors. The person cannot carry out a role of indisputable scientific authority. This function is subject only to axioms.

Now an axiom of **Unity**, but not the academic titles, - a guiding star in knowledge of depths of a universe. The destiny STR is extremely clear. It will gradually leave from a scientific stage in section of a history of a science. The classical theory be relative, both was the base of the exact sciences, and remain.

The literature

1. Kanarev Ph. M. The Foundation of Physchemistry of a Microcosm. The 8-th Edition. Krasnodar, 2007. 750 pages.
2. Kanarev Ph. M. Theoretical Basis of Nanotechnologies. The Second Edition. Krasnodar, 2008. 675 pages.