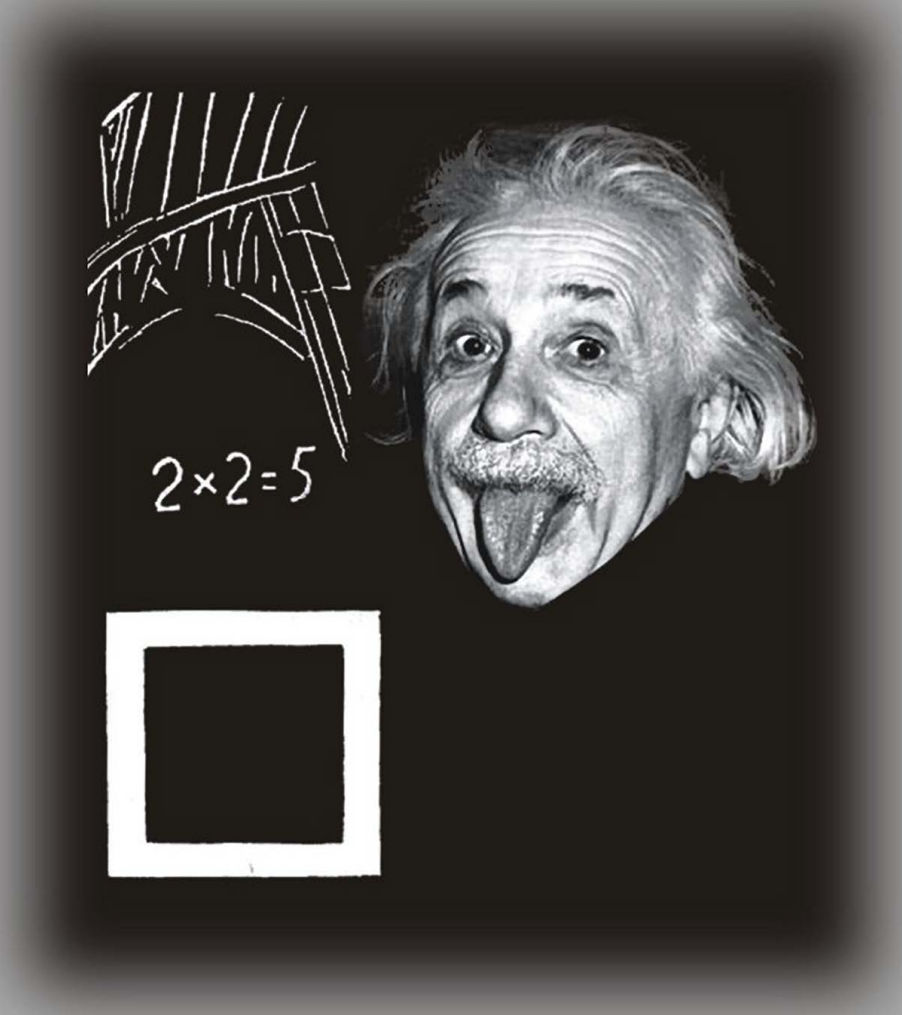
V.I. SEKERIN



The Theory of Relativity -

HOAX of the XX CENTURY

V.I.Sekerin

THEORY OF RELATIVITY - HOAX OF THE XX CENTURY

Novosibirsk, 2007

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С28 The theory of relativity is a hoax of the 20th century. Novosibirsk: Publishing house "Art-Avenue", 2007. - 128 p.

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The book contains descriptions of astronomical observations and laboratory experiments that confirm the correspondence of the speed of light to the classical law of addition of velocities and, therefore, the falsity of the postulate of the constancy of the speed of light c = const, which is the basis of the theory of relativity (STO). Thus, the inconsistency of STO as a physical theory is proved, the history and origins of its invention are shown, the idealistic philosophical essence and the pernicious nature of the theory in its study and application in practical applications are revealed.

The content is accessible and very useful for high school students, necessarily for physics teachers (it removes the inferiority complex from not understanding Einstein's theory), it is necessary for physicists to think about and look at their ideas about the nature of light, light "waves", quanta.

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Fiftieth anniversary
Siberian Branch
Russian Academy of Sciences
DEDICATED TO

INSTEAD OF A FOREWORD

FRUITS OF FANTASY ON THE THEME OF PHYSICS *

Ph.D. n. V. G. Zhdanov

Recently I came across a magazine article about the publication in the United States of a book about the 100 greatest Jews of all times and peoples. Here is a list of the “Jewish hundred”. Without discussing the criteria of the "table of ranks", I was somewhat surprised and involuntarily laughed that the third place of honor, after the prophet Moses and Jesus Christ, was taken by the creator of the theory of relativity, A. Einstein. If we consider that the first two personalities are biblical characters, gods, like some others from the top ten, then it turns out that Einstein was elevated to the rank of prophets, gods.

An apologetic moment could be considered that the author of the classification of Jews is a little-known composer and arranger from New York, Michael Shapiro. But there are statements of approximately the same tone by other authors who are more knowledgeable in physics, so the prize for the popular physicist, presumably, was agreed by the author, at least in the New York Jewish community.

My surprise and smile are caused by the fact that I am a physicist-optician by profession, studied the theory of relativity, passed exams in the sections where it is included, three times: at a physics and mathematics school, a university and a candidate's minimum. And I must say that I have always experienced dissatisfaction when trying to get to the bottom of this theory. Then it was time for me to teach physics at the university. The special theory of relativity is back in the program. I cannot teach others what I do not understand myself. My misunderstanding is due to the contradictory, paradoxical nature of the theory of relativity. Its content fundamentally contradicts all previous physics, which was called classical, as opposed to modern - relativistic. Yes, it is. The lack of common sense in the theory is due to the lack of it in the basis of the theory of relativity - the postulate of the constancy of the speed of light, the essence of which is that the speed of light from a source moving relative to the observer is the same as from a stationary one, and is the same if the observer moves relative source. It is known that the speed of

* An article with cuts was published in the newspaper "Zavtra" No. 117, 1996.

all objects is a relative value, that is, depending on what the speed is measured with respect to, it has different values. For example, the speed of the bullet relative to the machine gun is one, at the same time relative to the target, if the machine gun is installed on the flying aircraft is already different and is equal to the speed of the bullet relative to the machine gun and plus or minus the speed of the aircraft relative to the target. For light, an exception is made: the speed of light does not add up either with the speed of the source or with the speed of the target. Naturally, the well-known paradoxes of the theory of relativity about space and time follow from this statement.

Well, if the whole point is in the unusual properties of the movement of light, then I began to look for experimental confirmation of these properties. Unfortunately, I did not find anything in the literature. Foggy reasoning about certain observations, supposedly leading to such consequences that oblige to consider the postulate correct, are not at all convincing for a fundamental revision of the foundations of physics, suffered by all the previous experience of mankind. Moreover, I have not met a single physicist who could tell me anything intelligible about this, although many authors in many books talk about Einstein's genius, about the “revolutionary nature of his approach to space and time,” etc. But without experimental substantiation of the postulate, the theory following from it cannot be a physical theory!

To understand the difficult situation I was helped by the brochure of VI Sekerin "Theory of relativity - the mystification of the century" *, in which I found evidence of the inconsistency of Einstein's theory. Amazing book! The clarity and clarity of the presentation of the problem is combined in it with impeccable logic and argumentation with facts. Having analyzed the astronomical observations of O. Roemer and D. Bradley, known to everyone for three hundred years, Sekerin showed that the speed of light is added to the speed of the receiver. In addition to them, the brochure provides simple and convincing experimentally confirmed evidence that the speed of light adds up with the source if the source moves relative to the observer, i.e., light, like any other object of nature, obeys all of its laws. And the postulate of the constancy of the speed of light is a product of Einstein's imagination, as well as everything else that follows from the postulate. The content of the brochure is accessible and very useful

* Published in 1991 by the Novosibirsk book. publishing house

for high school students, be sure to physics teachers (removes the inferiority complex from not understanding Einstein's theory), it is necessary for physicists to think and look at their ideas about the nature of light, light "waves", quanta. In addition, the brochure contains little-known data on Einstein's activities not only as a physicist, but also as a philosopher and politician. In light of these data, the actions of the New York Jewish community become explainable. To attract the flock in modern conditions, you need your own modern gods. So, the mystic and Zionist A. Einstein is elevated to the rank of saint.

But what is the interest of the Russian Academy of Sciences in this?

The brochure was published five years ago. During this time, as I know, the President of the RAS Yu. S. Osipov, the Chairman of the SB RAS V. A. Koptyug got acquainted with it, and many other academicians read it. And it is also known that they have no rebuttals against the arguments set out in the brochure. Nevertheless, the Academy of Sciences does not fulfill its functions, and they are here in obtaining new knowledge and introducing this knowledge into practice. Sekerin's brochure is the result of many years, albeit unscheduled, work of an employee of the Academy of Sciences, and implementation is the introduction of changes in programs and textbooks.

A complete analysis and description of Roemer's observations, as well as other experiments and observations given in the brochure, significantly change our ideas about the nature of light and some philosophical statements. Until the publication of this brochure, views on the theory of relativity could be regarded as misleading. Now, continuing to teach the theory of relativity, especially in school, is a deliberate deception.

And this is not funny.

Let us suppose that experiment has refuted the hypothesis of relativity (Einstein). How many labors were used by scientists to master it, how many students puzzled over it - and suddenly it turned out to be nonsense. And humiliating, and as if the treasure was lost. How much pride there was in front of others, unfamiliar with the teaching - and everything collapsed. You have to bow your head and bitterly regret the time spent. Is it nice ?!

Old hypotheses are constantly rejected, and science is being improved. And scientists always prevent this most of all, because they lose and suffer the most from this alteration.

Average people are not hurt because they have not heard of these hypotheses. Of course, one must pity the scientists, but they themselves must beware and endure false humiliation for the sake of higher goals. To alleviate their suffering, special delicacy is needed.

K.E. Tsiolkovsky. A genius among people. M. "Thought", 2002.

Magi and real artists have the gift of providence. In the seeming chaos and confusion of life, they suddenly stop the attention of mankind on a seemingly insignificant detail, which acquires its true, key significance. Chaos disappears, the incomprehensible becomes clear.

Upon acquaintance with the painting by I. Glazunov "Mystery of the XX century", the fragment, which depicts the formula "2 x 2 = 5", the work of K. Malevich "Black Square" and the portrait of A. Einstein with his tongue sticking out, causes bewilderment. To the claims to the artist why he portrayed the popular physicist in such an unsightly way, Glazunov replied that he simply transferred the image of the scientist from a photograph to the canvas. As for the composition, this is his, the artist's, vision of the world of the 20th century.

Here another question arises: why did A. Einstein, being of old age and sane, not only photographed in this form, but also popularized this photograph in every possible way?

To get an answer, you need to understand the meaning of the picture as a whole. Glazunov's canvas captures the most outstanding hoaxes of the century, forming a common mystery, a deceptive theatrical performance of a world scale on the stage of life. Several hoaxes have found their place on the fragment being analyzed. In our opinion, they should be understood as follows.

The fine arts are valuable for their artistry, informational content, and the assertion of a realistic outlook. All this is present in “abundance” in K. Malevich's painting “Black Square”, called in some circles the “Manifesto of Abstractionism”. There is exactly the same amount of sanity in the formula "2 x 2 = 5". The answer to the portrait lies in the results of Einstein's activity, in his main work - the special and general theory of relativity.

1. The postulate of the constancy of the speed of light

“At first glance, the principle of the constancy of the speed of light contradicts common sense. Therefore, it is desirable, before we begin to deduce the consequences of the theory of relativity, to point out direct experimental evidence of its validity. "

A. I. Kitaygorodsky. Introduction to Physics. - M., 1959.

In the modern world, the most accessible and, at the same time, perhaps the least studied object of physical research is light. Moreover, in the twentieth century, he found himself at the center of very dramatic events - the birth and development of physical and philosophical concepts associated with the theory of relativity [1].

In 1905, A. Einstein published an article "On the electrodynamics of moving bodies" with a statement of the theory, later called the special theory of relativity (SRT). The article formulates the basic for this theory, but a short, therefore, indefinite position: "... light in a vacuum always propagates at a certain speed V, independent of the motion of the emitting body" [2, p. 8, v.1]. Subsequently, it was supplemented, deciphered, began to be called the postulate of the constancy of the speed of light, and acquired special significance not only in physics, but also in science as a whole.

The modern symbolic designation of the postulate is c = const, and the full formulation is “the speed of light in vacuum does not depend on the speed of the source, in all inertial systems it is the same and is equal to $c = 3 \cdot 10^8$ m / s, that is, the speed of light does not depend on the movement of the source, nor from the movement of the observer (receiver) ”[3, p. 305].

Analyzing the postulate of the constancy of the speed of light, we find that it contains two basic statements: first, the speed of light has a certain value, which is always the same; second, the speed of light does not obey the classical law of addition of speeds.

The first property of the postulate contains nothing unusual, while the second requires a special explanation.

Speed is a measure of movement of objects in the material world, a relative value. Depending on the frame of reference or body of reference, the body relative to which the measurement is carried out, the speed of the same object will be different. For example, at the same time, a

passenger sitting in the seat of a moving train has zero speed relative to the carriage and moves at the speed of the train relative to the Earth. Without specifying the frame or reference body in relation to which the movement occurs, the definition of the speed loses its meaning.

Constant is the speed at which the body travels equal segments of the path at equal intervals of time. Determining the speed of an extended body moving past the observer is equivalent. For example, in a train uniformly moving past the station, consisting of identical carriages, each carriage passes by an observer at equal intervals of time. But if the second observer at this time moves along the platform, then the speed of the cars relative to him will be different than in the first case. This is a manifestation of the classical law of addition of velocities, according to which one and the same body (carriage), depending on the reference body (in the first case, a station with a stationary observer, in the second, the observer moves relative to the station) moves at different speeds. The law of addition of velocities applies to other natural phenomena. The speed of sound waves is about 330 m / s relative to air, but relative to a receiver moving in the air, the speed of sound is already different. The resulting speed when adding the speeds is found according to the vector addition rule.

An exception has been made for light. In the postulate formulated by A. Einstein in a later work, it is said that “... one and the same light ray propagates in a void with a speed" c "not only in the frame of reference K, but also in every other frame of reference K', moving uniformly and rectilinear with respect to K”[2, p. 387].

This statement defines the speed of light by itself, regardless of anything. Contrary to scientific methodology, a meaningless proposition has been introduced into physics, which is the basis of special and general theories of relativity. Precisely the basis, since without it all similar theories, including such as, for example, the new relativistic theory of gravity by Acad. AA Logunova [4], immediately turn to dust.

The absurdity of the c = const postulate is that its content contradicts reality. The speed of light, like the speed of any object of nature, is a derivative value; it is calculated by the ratio of the measured values of length and time. Here, the speed of light is put in a series of basic physical quantities, as a result, length and time are excluded from the series, they are converted into derivatives, dependent quantities.

Any scientific theory has the right to exist if it allows a deeper understanding of the nature of phenomena, to correlate our understanding with reality. Can a theory based on a position that contradicts reality claim to be a scientific theory?

And the fact that the postulate with c = const has no basis in the real world becomes clear if we compare the results of measuring the speed of light with a mutually stationary source and receiver with the results when, for example, the receiver moves relative to the source. *

* Taking into account the generally accepted terminology, the following expressions are used in the text: "speed measurement" or "speed determination". While the speed cannot be measured or determined, it can only be calculated by measuring the distance traveled and the time interval for this - approx. ed.

2. Calculating the speed of light

For the first time the idea of a method for measuring the speed of light was expressed by G. Galileo in 1607 in the following form. Two observers with lanterns are at a known distance from each other in line of sight. The first of them opens his lantern and, marking this moment in time, directs the light towards the second. Seeing the light, the second observer opens his lantern towards the first. By noting the time of arrival of light from the second lantern, the first observer determines the speed of light, which is equal to twice the distance between observers divided by the time interval between the moment the first lantern opens and the moment the light arrives from the second lantern. Of course, given the tremendous speed of light, such a performance of the experiment does not allow obtaining the desired value.

One of the heroes of G. Galileo's book "Conversations and Mathematical Proofs Concerning Two New Branches of Science, Related to Mechanics and Local Movement" less than a mile, which is why I could not be sure if the opposite light really appeared quite suddenly. But if it does not happen suddenly, then, in any case, with extreme speed, almost instantly. "

The latter indicates that Galileo himself most likely carried out these experiments.

Subsequently, under the conditions of a more perfect experimental technique, several measurements of the speed of light were carried out by the described method. In particular, in 1849 A. Fizeau performed an experiment according to the following scheme.

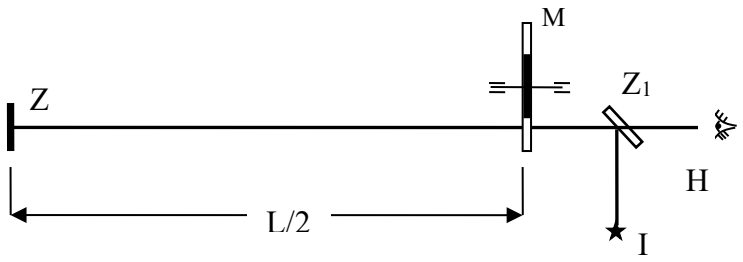


Fig. 1

Light from source I in Fig. 1 by a semitransparent mirror Z_1 is directed to the modulator M, the gear wheel, and then to the mirror Z, reflected from which, goes to the observer H. When the wheel is stationary, the light from the source, passing in one of the spaces between the teeth of

the wheel, is visible to the observer. By rotating the wheel with a certain frequency, ω the observer stops seeing the light and observes it only at a higher frequency ω_1. Obviously, at first, during the time while the light goes from the wheel and back, a tooth appears at the place of the first gap, and therefore the light is not visible. With an increase in the speed of rotation of the wheel, at the place of the first gap, a second gap adjacent to it appears and the light becomes visible. With a further increase in the speed of rotation of the wheel, the light disappears again, then appears through two teeth in the third, fourth lumen, etc. For ease of consideration, let us stop at the second lumen.

T - the time interval for moving the second lumen to the place of the first is the time during which the light travels the distance L. The speed is found by dividing the distance L by the time T.

A. Fizeau found c = 315,000 km / s.

In the performed measurement, only the value of the speed of light was determined. Subsequent experiments confirmed that the speed of light relative to the source is approximately 3×10^8 m / s, and, within some limits associated with the measurement accuracy, is approximately the same.

3. Measurement of the speed of light when the receiver is moving regarding the source

To check whether the speed of light obeys the classical law of addition of speeds, let us analyze the planned experiment.

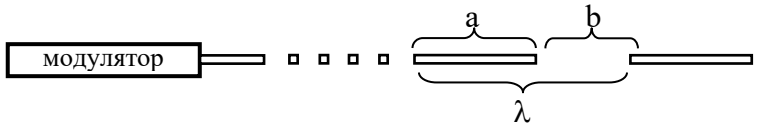


Fig. 2

In Fig. 1, we remove the observer and let the light modulated by the cogwheel propagate further. The flow of light from the source I becomes intermittent, modulated, and its speed in vacuum remains the same (Fig. 2). A part of the modulated light flux will be called a link λ, where a is a segment of a light flux, b is the distance between adjacent segments of a light flux.

The length of the link λ is equal to L. The time interval for the link λ to pass through the measuring installation is T.

Now let's measure the speed of the modulated light flux from the source **I** and in the same way as in Fig. 1, but with a different measuring setup, which, together with the observer, will be placed on a platform that moves, if necessary. (Fig. 3).

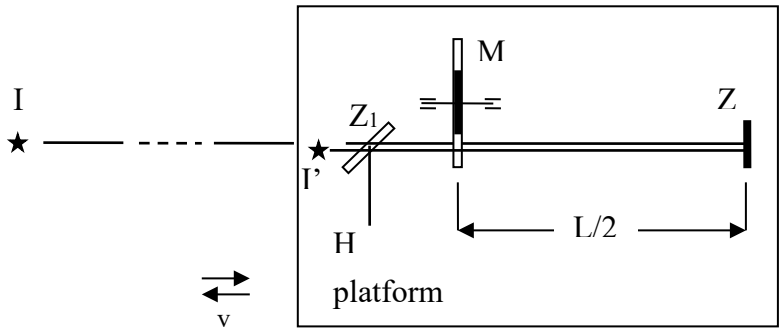


Fig. 3

Legend in Fig. 3 are the same as in Fig. 1, but for the source on the platform and the links of light from it - with a stroke.

The first measurement is taken with the platform stationary. The speeds of light from the sources I and I' are equal to each other, λ = λ' and

both sources are visible to the observer at the same frequency of rotation of the modulator ω_1 as in the previous experiment, only for the source I there must be a corresponding phase synchronization.

$$c = \frac{\lambda}{T} = \frac{\lambda'}{T}. \quad (1)$$

The second measurement is carried out when the platform moves from the source I with a speed v, the third - when the platform moves at the same speed to the source I.

In the second and third dimensions, according to Galileo's principle of relativity, according to which it is impossible to determine by any experiments inside an isolated system whether the system moves uniformly and rectilinearly or is at rest, for the source I' nothing changes and the light from it must still be visible to the observer.

If the stationary source **I** in the second and third dimensions on the moving platform will also be visible to the observer in the same way as in the first dimension, then *we will receive an experimental confirmation of the truth of the postulate c = const*.

But if the movement of light obeys the classical law of addition of velocities, then when measuring on a moving platform there should be the following results for the source I.

a) The measuring setup moves from the source I, the speed of light from it on the setup is equal to the difference (c – v). Link λ passes through the installation in the time:

$$\frac{\lambda}{c - v} = T_2 \quad (2)$$

that is, more than the time T, during which the link λ' continues to pass from the source I',

$$T_2 - T = \Delta T_2 = T_2 \frac{v}{c} \quad (3)$$

Since the wheel M rotates at the same frequency, the light flux from the source I is modulated by the measuring installation to new links:

$$\lambda_2 = T(c - v) = \lambda - \Delta\lambda \quad (4)$$

The length of the link λ_2 is only a part of the length λ, that is, with a decrease in the speed of light relative to the installation in its system, the link λ becomes "longer" the equal link λ' by the value

$$\Delta\lambda = \lambda \frac{v}{c}. \quad (5)$$

In order for the link λ to pass freely through the measuring installation and the light from the I source can be seen by the observer in the same way as with a stationary platform, in addition to phase synchronization, it is necessary to increase the time of moving the second lumen to the place of the first, decreasing the speed of rotation of the modulator according to condition (2). But then the optimal observation of the source I' is violated.

b) The measuring setup moves to the source I, the speed of light from it on the setup is equal to the sum (c + v). In this case, link λ passes through the installation in time

$$\frac{\lambda}{c+v} = T_3 \tag{6}$$

less than T by the amount

$$T_3 - T = \Delta T_3 = T_3 \frac{v}{c} \quad . \tag{7}$$

The length of the link newly modulated by the installation is

$$\lambda_3 = T(c+v) = \lambda + \Delta\lambda \, . \tag{8}$$

The length of the link λ is only a part of the length of the link λ_3, that is, with an increase in the speed of light relative to the moving installation, the initial link λ became "shorter" than the equal link λ' by an amount

$$\Delta\lambda = \lambda \frac{v}{c} \, . \tag{9}$$

Now, in order to continue observing the light from the I source as before, the modulator rotation frequency should be increased according to condition (6), but in this case the observation of the I' source will again be violated.

Such should be the experimental results on measuring the speed of light with the mutual motion of the source and receiver in the case of subordination of the motion of light to the classical law of addition of velocities.

The meaning of formulas (4) and (8) is interesting. Link λ in the observer's system remains the same as in the emitter's system. But when measuring its length, as well as the length of a similar link λ' from a stationary source, in terms of the time it passes by the observer, the link λ becomes "longer" when the source moves away, or "shorter", in the case of an approach, an equal link λ' !

Direct measurement of linear dimensions is carried out by applying a length standard to an extended body. In the case of measuring the length

of a moving object (a stream of light, a train), an indirect method comes into force - *calculating the length* by the time the body passes at a known speed.

The effect of changing the length of a link as a consequence of the changed magnitude of the speed of light is *apparent*, it is caused by the way we measure it. In the following, the terms for link length change are applied subject to this note.

Let's look at an example for clarity. Two trains on parallel tracks travel in the same direction. Within one minute, 20 carriages passed by the observer in the first train, and 15. This could be the result of two reasons: different train speeds or different types of cars. Suppose that the type of cars is the same, then our observation is the result of different train speeds.

Comparing the planned measurements with the actual observations and experiments, we find that *the speed of light really obeys the classical law of addition of speeds*.

4. Astronomical observations and laboratory experiments confirming the classical law speed addition for light

4.1. Olaf Römer's observations

Nature made it easier for us to conduct a much-needed experiment, provided a modulated light source and a moving platform.

In 1676, at the Paris Observatory, the Danish astronomer O. Römer, observing the planet Jupiter and its satellites, noticed that the time of the full revolution of Io's satellite around Jupiter, determined by the moment the satellite exited (or entered) from the shadow of Jupiter, periodically changes. The periodicity turned out to be associated with the movement of the Earth in its orbit around the Sun [5, p. 414].

At the moment of the closest approach of the Earth to Jupiter (Fig. 4), in position I, the period of Io is $T_1 = 1.77$ days $= 1.5 \cdot 10^5$ sec.

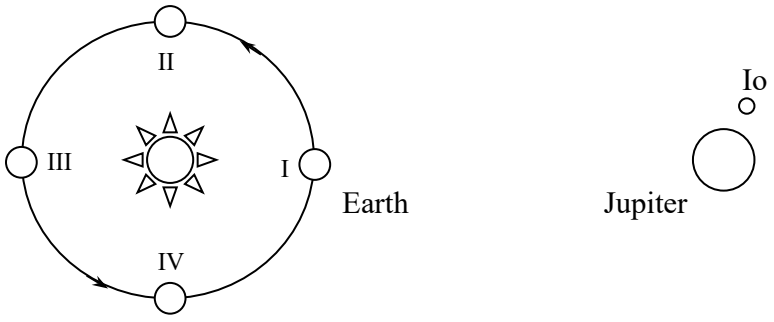


Fig. 4

When the Earth moves to position II, the period T_1 begins to increase and reaches its maximum T_2 in position II, after which it decreases and becomes again equal to T_1 in position III, that is, $T_1 = T_3$. But the decrease does not end here, but continues until position IV, where the period T_4 acquires a minimum value. Then it increases to the value in the initial position I. The maximum increment in the period of Io $\Delta T_2 = 15$ s, approximately the same and the maximum decrease - $\Delta T_4 = 15$ s. In all other intermediate positions of the Earth in orbit, the changes in Io's period are proportional to the component of the Earth's velocity relative to Jupiter along the Earth-Jupiter straight line. The period increases as the Earth moves away from Jupiter, and decreases as it approaches Jupiter.

Since the angular velocity of Jupiter's revolution around the Sun is much less than the angular velocity of the Earth (the year of Jupiter is equal to almost 12 terrestrial years), then during the year the relative position of the Earth and Jupiter changes insignificantly and does not have a noticeable effect on the described effect.

Comparing two observations of Io's periods at points I and III, O. Römer saw that their periods are equal, but the beginning of the period at position III is late, according to his measurements, by 22 minutes compared to the case if the duration of the periods did not change over time between observations. The astronomer determined that the delay in the beginning of Io's period at point III is due to the fact that the light from the satellite must travel to the observer an additional distance equal to the diameter of the earth's orbit. By dividing this distance by the time of delay, Römer was the first in the world to calculate the speed of light.

Consider now the periods in positions II and IV. The first of them is 15 seconds longer than the initial one, the second is the same amount less. The change in the duration of the periods shows that the light has different values of its speed relative to the observer, depending on the registration conditions.

Indeed, Io's satellite reflects light during time T and forms a stream of light in space with a length $\lambda = cT$, where c is the speed of light in the Jupiter system, T is the time of revolution of Io's satellite around Jupiter. λ — this is a link, which consists of two parts: a - Io is in an illuminated place, b - there is a gap in the stream of light, Io in the shadow of Jupiter, and the Earth in our experiment is a platform.

In position I, the Earth is motionless relative to Jupiter along the Earth-Jupiter straight line. Link λ, having covered the distance from Jupiter to Earth, is recorded by an observer on Earth during the period:

$$T_1 = \frac{\lambda}{c}, \tag{10}$$

i.e., during the same period of time, $T_1 = T$. The same happens in position III, only here the beginning of the period registration time, as observed, occurs with a delay due to the fact that the λ link needs time to overcome the additional distance by the diameter of the Earth's orbit: $T_3 = T$.

In position II, the Earth moves away from Jupiter, the link λ catches up with the Earth and, according to the law of addition of velocities, the speed of light relative to the Earth is $c_2 = c - v_3$, and the registration time of the link λ is

$$T_2 = \frac{\lambda}{c_2} = \frac{\lambda}{c - v_3}, \quad (11)$$

where v_3 = 29.8 km / s is the Earth's orbital velocity.

Six months later, the Earth moves towards the flow of light, the speed of which for the observer is now equal to $c_4 = c + v_3$, and the registration time of the link is λ

$$T_4 = \frac{\lambda}{c_4} = \frac{\lambda}{c + v_3}. \quad (12)$$

Since in (11) and (12) the length of the link λ is the same, then, moving λ to the left side of the equations, we equate the right ones with each other:

$$T_2(c - v_3) = T_4(c + v_3). \quad (13)$$

Transforming equality (13) with respect to c, we find:

$$c = \frac{T_2 + T_4}{T_2 - T_4} v_3. \quad (14)$$

Substituting in the last expression the numerical values of the observed periods and the speed of the Earth's orbit, we again calculate the speed of light relative to the source:

$$c = \frac{1{,}5 \cdot 10^5 + 15 + 1{,}5 \cdot 10^5 - 15}{1{,}5 \cdot 10^5 + 15 - 1{,}5 \cdot 10^5 + 15} \cdot 29{,}8 км / с = 298000 км / с.$$

The method for calculating the speed of light is possible only because the phenomenon discovered by O. Römer and the results of its measurements exactly correspond to the results of our planned experiment with a moving platform, which confirms the classical law of addition of speeds for light.

4.2. Römer effect

It is known that any light flux as part of electromagnetic radiation is not uniform. The stream consists of separate periodic structures, in which, when moving, the electric and magnetic fields for the observer change according to the sinusoidal law most characteristic of sound waves. As a result, these structures are called electromagnetic "waves". Waves, by definition, is the process of propagation of any disturbance in the environment. But so far, no medium has been found (ether, "physical vacuum" and the like), in which a disturbance, called electromagnetic "waves", would spread. Moreover, there is a lot of evidence that there can

be no ether, therefore the observed inhomogeneities have a different essence.

Waves also call a medium with a spatial alternation of maxima and minima and any physical quantity, for example, the density of matter, the strength of the electric and magnetic fields, temperature, color. When moving, such an inhomogeneous medium behaves like a wave according to the first definition. The mathematical description of both types of waves overlaps. In the first case, the wave velocity is most often called the propagation of a disturbance relative to the medium. In the second, the speed of *waves* is the movement of the medium itself relative to the measuring system, and since the medium is inhomogeneous, its inhomogeneities are recorded like waves, the form of which is determined by the form of inhomogeneities.

Electromagnetic *waves* in nature are a medium, a type of matter, a structure with a spatial periodic alternation of maxima and minima of the intensity of electric and magnetic fields, capable of propagating in a vacuum, empty space. The middle position when the medium moves from maximum to minimum is the zero point. The distance between adjacent maxima or minima, as well as between adjacent even or odd zero points of the period, is a unit structure element and is called a *link*.

The fact that we are not dealing with waves in the ether, but with an ordered structure of photons, is confirmed by numerous laboratory experiments on measuring the characteristics of the light flux with the relative motion of the source and receiver. These results are similar to measurements of artificial, arbitrary values of light links on a moving platform and are not at all similar to the results of measurements of frequencies and wavelengths in media.

The manifestation of the law of addition of velocities in changing the transit time of a link of light, which was first observed by O. Römer, is characteristic of all periodic electromagnetic structures. This phenomenon is now called the Doppler effect. This is a mistake, it should be called the Römer effect, because the Doppler effect has nothing to do with electromagnetic radiation. Both phenomena, the Römer effect and the Doppler effect, despite the fact that their mathematical descriptions overlap, are completely different phenomena.

The Doppler effect refers to the propagation of waves in media, has four options for changing the speed, frequency and wavelength during the mutual inertial motion of the source, receiver and the medium in

which the waves propagate. The first option - the receiver is stationary relative to the medium, the emitter is moving; the second - the emitter is stationary in the environment, the receiver is moving; the third - the emitter and the receiver move together relative to the medium and, finally, the fourth option - the emitter and the receiver move relative to the medium at different speeds. But in all cases, the speed of the waves changes relative to the object, emitter or receiver, which moves relative to the medium. Only relative to the medium does the wave velocity remain constant. When the source moves in the medium, the wavelengths change in reality.

The Römer effect describes the propagation of a periodic structure of electromagnetic radiation, links, in a vacuum, empty space, in the absence of any medium - ether, "field", "physical vacuum", etc., affecting the movement of electromagnetic radiation, and has only one option, mutual inertial motion of the source and receiver. In this case, it is not essential that the source or the receiver is considered to be stationary; the effect itself and its mathematical description in the receiver system remain the same. In the Römer effect, the link length does not change, the apparent change is caused by the way we measure the link length.

Let us leave the symbol λ to designate the spatial dimensions of the natural link, which is currently accepted for the length of the electromagnetic "wave" in the modern concept. In the Fizeau measuring device, as well as in electromagnetic radiation, the links in each specific case are equal to each other, which makes it possible to introduce another quantity characterizing the luminous flux:

$$\nu = \frac{1}{T},$$

where ν is the number or frequency of passage of links in the observer's system per unit time interval. Now we have:

$$\nu \lambda = C,\ \nu = \frac{c}{\lambda},\ \lambda = \frac{c}{\nu}, \tag{15}$$

and expressions (2) - (9) in this case take the following form.

a) The source moves away from the observer, the speed of light relative to it is equal to c - V. The links λ pass in his system with a frequency

$$\nu_2 = \frac{c - v}{\lambda}. \tag{16}$$

The frequency decreases by the amount

$$\nu_2 - \nu = -\Delta\nu_2 = -\nu\frac{v}{c}. \quad (17)$$

If the frequency of the links remained the original, then according to the method of our measurement, each link would have a length

$$\lambda_2 = \frac{c - v}{\nu}. \quad (18)$$

In this case, the link becomes "longer" by the value

$$\lambda - \lambda_2 = \Delta\lambda_2 = \lambda\frac{v}{c}. \quad (19)$$

b) The source approaches the observer, the speed of light in its system is equal to c + V, the frequency of passage of the links increases, and the length of the link "decreases", that is, we have

$$\nu_3 = \frac{c + v}{\lambda}, \quad (20)$$

$$\nu_3 - \nu = \Delta\nu_3 = \nu\frac{v}{c}, \quad (21)$$

$$\lambda_3 = \frac{c + v}{\nu}, \quad (22)$$

$$\lambda - \lambda_3 = -\Delta\lambda_3 = -\lambda\frac{v}{c}. \quad (23)$$

Expressions (17) and (21) show that the magnitude of the change in the link frequency depends only on the speed of light relative to the receiver, and from (19) and (23) it follows that the magnitude of the change in the link length depends on the measurement method. This is the O. Römer effect, which has been repeatedly tested in practice.

4.3. Stellar aberration

In 1727 the astronomer D. Bradley discovered the phenomenon of stellar aberration, which consists in the fact that all stars during the year describe ellipses on the celestial sphere with a semi-major axis observed from the Earth at an angle $\alpha = 20.5"$. Aberration is caused by the motion of the Earth in its orbit around the Sun at a speed of V = 29.8 km / s (Fig. 5). In order to observe a star from a moving Earth, it is necessary to tilt the telescope tube forward in motion, since during the time the light travels through the tube, the eyepiece will move forward with the Earth. (This is an accurate analogy for movement, for example, a raindrop in a moving carriage entering through a hole in the roof, if air resistance is neglected.) Obviously, $v / c = \tan\alpha$, for small α $\tan\alpha = \alpha$. Having measured the angle $\alpha = 20.3"$ and using the rule for calculating the addition of the speed of light with the speed of the source $c = v/\tan\alpha$, Bradley quite accurately calculated the speed of light [3, p. 262].

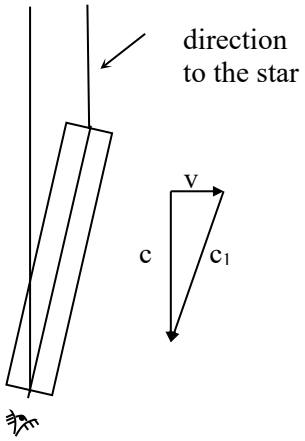


Fig. 5

The speed of light relative to the star - the emitter, is equal to c, and in the Earth's system - the receiver, moving at a speed V perpendicular to the direction of movement of light, is equal to c_1 and is found by the formula

$$c_1 = \sqrt{c^2 + v^2} \ . \qquad (24)$$

The angle α is called constant aberration and is denoted by the letter k. The indicated magnitude of the stellar aberration, taking into account the postulate *c = const*, is considered a constant value. In 1964, the aberration constant was adopted by the International Astronomical Union $k = 20.496''$. Until that time, "by international agreement, k = 20.47". If we take into account that the average speed of the Earth in orbit is v = 29.765 km / s, and the reference value of the speed of light is c = 299792.5 km / s, then the aberration constant should have the value $k = (v / c)\ 206265'' = 20.479\ ''$.

In fact, the magnitude of the aberration is different for different *stars*.

It is known that some stars in the Universe move at significant speeds relative to the Solar System. Light from stars that are approaching or moving away from us at a speed of about 300 km / s, changes its speed on Earth by the same amount. The magnitude of the aberration of these stars also changes to minus or plus 0.02″, which significantly exceeds the modern resolution of instruments in determining the position of stars (0.001″).

The discrepancy in measurements of the magnitude of the aberration is associated not only with the uneven motion of the Earth in orbit and technical difficulties, but also with the erroneous idea of the speed of light.

4.4. Transverse Römer effect

One of the consequences of the theory of relativity, which, allegedly, cannot be explained by classical physics, is the transverse Römer (Doppler) effect. The effect is that the frequency of light - ν_1, recorded in the transverse direction to the direction of movement of the source, decreases and is equal to

$$\nu_1 = \nu\sqrt{1-\beta^2}\,, \qquad (25)$$

where ν is the frequency of the emitted light, β = v / s; v is the speed of the source, c is the speed of light relative to the source.

In Fig. 6 shows a diagram of an experiment carried out in 1938 by G. Ives and D. Stillwell. H is the flux of channel beams (excited hydrogen atoms) moving at a speed $v \approx 10^8$ cm / s along the screen, E is the screen, O is the optical axis of the spectrograph, C is the spectrograph. In this experiment, the wavelength recorded by the spectrograph decreased by δλ = 0.0468 Å, which is very close to the theoretically predicted value [6].

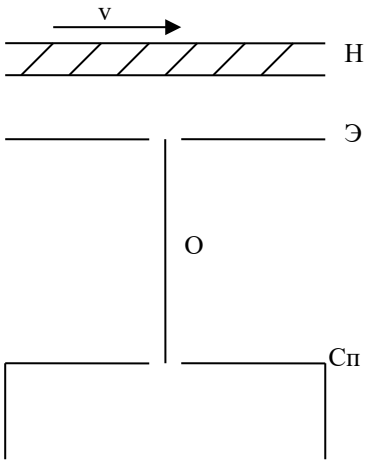


Fig. 6

A careful examination of the experiment performed allows one to give a different, purely classical, explanation for the measured characteristics of light.

Based on both astronomical observations and experimental data above (Section 4), it is shown that the movement of light obeys the classical law of addition of velocities.

A description of the concept of light is given, the corpuscular and wave properties of which in the modern sense define light as a stream of an ordered structure of photons, each of which contains an electric and magnetic field. The characteristic size of the flow structure λ is a link. A flow, consisting of links, moving, upon detailed examination, manifests itself in waves and can be described by the corresponding equations.

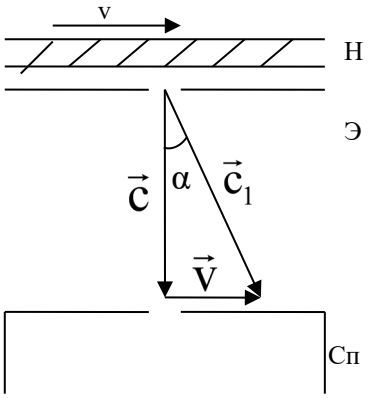


Fig. 7

In Ives's experiment, Fig. 7, excited hydrogen atoms, flying past the hole in the screen, emit photons in all possible directions, including in the direction perpendicular to their motion. But these photons cannot get into the spectrograph due to the aberration of light. According to the rule of

vector addition of velocities, they deviate from the optical axis of the device by an angle α from the condition tanα = v / c.

Only those photons propagate along the optical axis of the spectrograph, which are emitted from the flux of excited hydrogen atoms at an angle of minus φ to the perpendicular to the direction of their motion, where φ=arcsin (v/c), Fig. 8.

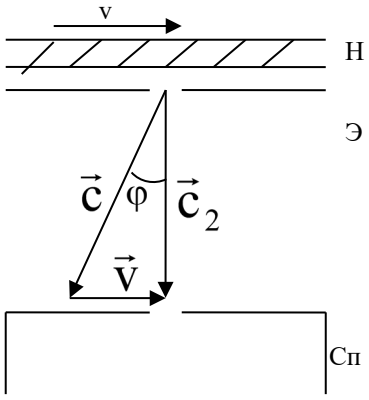


Fig. 8

The speed of these photons relative to the spectrograph

$$c_2 = \sqrt{c^2 - v^2}\ . \qquad (26)$$

According to formulas (15) and (16), the frequency of light recorded in this case is

$$\nu_1 = \nu \frac{c_2}{c}\ . \qquad (27)$$

Expanding c_2 through c and v, we find

$$\nu_1 = \nu \sqrt{1 - \frac{v^2}{c^2}}\ . \qquad (28)$$

When the spectrograph is located at any angle to the direction of motion of hydrogen atoms, the indicated effect refers to the perpendicular component of the speed of light relative to the optical axis of the spectrograph.

4.5. Double stars

The most consistent theory of electrodynamics, which rejects the postulate of the constancy of the speed of light, was published by the Austrian scientist W. Ritz in 1908 [7]. Subsequently, this theory began to

be called "ballistic", because in its presentation, the emission of light was compared with the projectiles fired from a moving weapon.

In 1913, de Sitter [8] presented arguments about the observations of binary stars, which supposedly refute the classical law of addition of the speed of light and which are still the most powerful proof of the truth with *c = const* in textbooks and reference books on physics.

The content of the reasoning is as follows: "… imagine a star at a distance L from the observer, one of the components of which S has a period of revolution T and a linear velocity of motion v (Fig. 9).

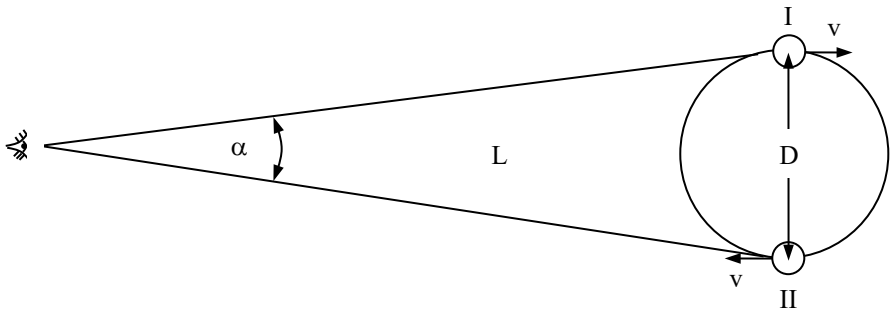


Fig. 9

If the ballistic hypothesis is correct, then the light from the S component at position I will reach the observer by the time $t_1=\frac{L}{c-v}$, and in position II - to the moment $t_2=\frac{T}{2}+\frac{L}{c+v}$, where $\frac{T}{2}$ — half-period of circulation.

Thus, the observed motion of the star can significantly deviate from Kepler's laws. In particular, with a very large L, it is possible that even with $v << c$, $t_2 < t_1$ will turn out, that is, the apparent movement becomes very whimsical. Consideration of a sufficient number of stars shows that such a consequence of the ballistic hypothesis contradicts observation and that, consequently, the Ritz hypothesis should be set aside" [9, p. 452].

However, continuing the reasoning started above, we come to the conclusion that the deviations from Kepler's laws existing in the motion of visually binary stars as a result of the addition of velocities are so small that they cannot be recorded by the instruments available today. To show

this, we find the angle α between the images of the star S at points I and II under the condition $t_1 = t_2$, or

$$\frac{L}{c-v} = \frac{T}{2} + \frac{L}{c+v}, \text{ whence follows } L = \frac{T(c^2 - v^2)}{4v}. \qquad (29)$$

From point I to point II, the distance between which is equal to the diameter of the orbit D, the star moves in time T / 2, which allows us to write:

$$D = \frac{Tv}{\pi}. \qquad (30)$$

Under the condition D <<< L, the angle α is equal to tanα, that is,

$$\alpha = \frac{D}{L}. \qquad (31)$$

Substituting in (31) the values of L and D from (29) and (30) and taking into account that v << c, we find

$$\alpha = \frac{4v^2}{\pi c^2}. \qquad (32)$$

It is known that the speed of visually binary stars in orbits is much less than the speed of 350 km / s, which is necessary for the angle α to be $2 \cdot 10^{-6}$ rad - the limit of the resolving power of modern telescopes. Therefore, trigonometric measurements do not allow refuting the hypothesis of I. Newton and W. Ritz.

4.6. Measuring the distance to binary stars

However, the law of addition of the speed of light with the speed of a source, proved by the observations of O. Römer, in binary stars is manifested by a change in the brightness of the star S. the radiation intensity of the star.

To consider the nature of this phenomenon, we construct, in the L and t coordinates, the trajectories of light coming from the star S, which moves in a circular orbit (Fig. 10). The speed of light of the star relative to the Earth $c_1 = c + v \sin\omega t$. At certain moments of the period of the star at some distance from it, the light "faster" for the observer catches up with the light "slower" and is fixed by the observer at the same time.

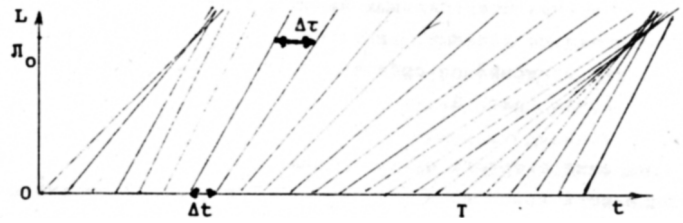


Fig. 10

The distance between adjacent trajectories at L = 0 is equal to Δt. With distance from the star, the distance changes; we denote it by Δτ.

B is the radiation intensity of the star S, it is constant, therefore, in each interval of the period Δt = T / n (n is an arbitrary number), the star emits an equal amount of energy. At some distance from the star, this interval can remain the same, but it can decrease or increase, depending on what speed the light that came out later has in the observer's system. If it catches up with the one in front, then the interval shrinks, the radiation power increases, and the brightness of the star increases. Conversely, as the interval increases, the brightness of the star decreases.

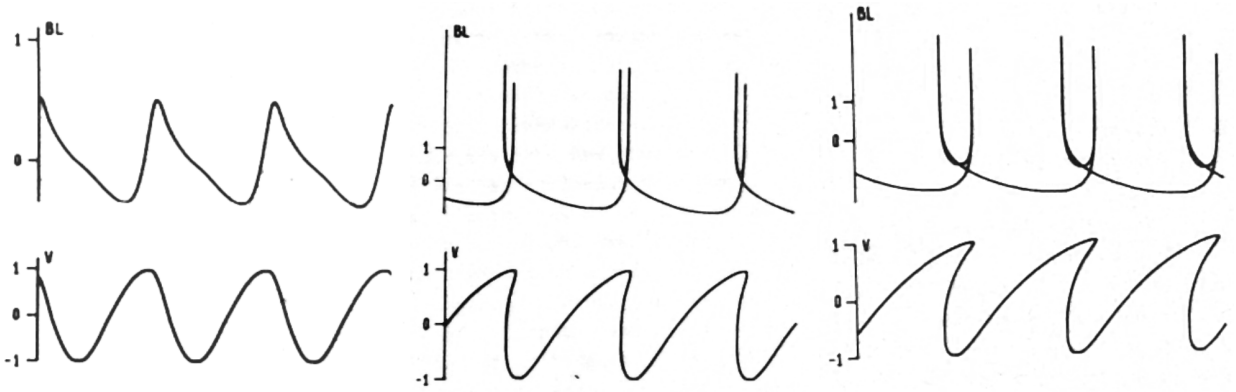
The quantity B [Δt/Δτ] - represents the observed brightness of a star located at a distance of L_1, or the sum $\sum$ B [Δt/Δτ], if light comes simultaneously from several regions of its orbit. The distance $L = Tc^2/4v$ will be denoted by A_0 and we will take it as a conventional unit of measurement for the distance to a given star, A_0 is the distance to the observer at which light comes to him simultaneously from points I and II of the orbit, at certain T and V. Similar characteristics are possessed by the so-called variable "pulsating" stars - Cepheids, which, in our opinion, are double stars, where only one of them shines. This assumption was made at the beginning of the twentieth century [10, p. 11].

The effect of a change in brightness caused by the law of addition of velocities from a moving source is also observed in spectrally binaries. It has some peculiarities. The components of these stars are comparable in intensity to each other; therefore, their brightness change is less pronounced, since a decrease in the brightness of one star is compensated by an increase in the brightness of another at the same time. However, the change in the intensity of the spectral lines of each star is not subject to compensation, which is observed with confidence [11, p. 199].

Simultaneous observation of the magnitude of the change in brightness and the displacement of spectral lines in variable "pulsating" and spectrally binary stars makes it possible to determine, in addition to the parameters of their orbital movements, also the distance to these objects from the Earth (see Fig. 11). Our calculations show that, for example, the variable Cepheid star δ Cephei (parameters: brightness change is 0.7 stellar magnitude, period - 5.37 days) is 28 light years from the solar system; Cepheid RTAurigae (parameters: brightness change 0.8 magnitude, period 3.73 days) at a distance of 25 light years; Cepheid ηAquilae (parameters: brightness change of 1.2 magnitude, period 7.18 days) at a distance of 65 light years. This is significantly different from the modern concept of distances to these objects.

a b c

Fig. 11



a - $L = 0.25L_0$, b - $L = L_0$ and c) - $L = 1.5L$. The upper curve of each figure is the magnitude of the variable (double), expressed in magnitudes (for each branch separately, without preliminary summation). The bottom curve of each figure is the radial velocities of light coming from a variable (double). (Calculations and graphs were made by M.S.Serbulenko).

4.7. Measuring the speed of the sun's light

At the end of the 40's, XX century, during the preparation in the USSR of a discussion about the essence of the theory of relativity, S.I. Vavilov, President of the USSR Academy of Sciences, it was decided to conduct a laboratory experiment to verify the reliability of the postulate *c = const*. As a moving source, it was supposed to use canal beams, rapidly moving excited atoms and molecules, in particular,

hydrogen. But the sudden death of Vavilov and the organizational difficulties that arose in connection with this, as well as the technical imperfection of the equipment available at that time, transformed the planned experiment into one that was carried out under the direction of Bonch-Bruevich [12]. The qualitative side of the experience does not meet the task at hand. The moving source was the edges of the rotating Sun, the linear velocity of which is 2 km / s. An alternate comparison was made of the speed of light from the edges of the Sun, approaching and moving away from the observer.

So, the speed of light $c = 3 \cdot 10^8$ km / s. The desired value of 2 km / s is 0.001% of the measured value and is "masked" by the fact that the emitting surface of the Sun consists of moving liquid and gas streams with a speed much greater than 2 km / s. In addition, the base on which the measurements were carried out was in the Earth's atmosphere, which has a variable optical density and introduces a significant error in the measurements. Under the conditions of these experiments, there were increased measurement errors. For comparison, it can be indicated that the most accurate laboratory measurements of the speed of light, performed in 1926 by Michelson, with an error of plus/minus 4 km / s had a spread of results of 60 km / s [13, p. 67].

Therefore, it is not surprising that the authors of the described experiment did not find a change in the speed of light of 2 km / s. And the deviations of the speed of light of hundreds of km / s observed in some series of measurements, which were probably caused by the emission of solar matter emissions, were considered erroneous, were not taken into account.

4.8. Venus radar

In the twentieth century, when it became possible to carry out accurate interplanetary radar, experiments were carried out to determine the distance to Venus, in which, in addition to two American observatories (the Massachusetts station and the station in Puerto Rico), the Crimean Observatory of the USSR Academy of Sciences also participated. In June 1964 it was found that the signal delay in the USSR was always less than in America. The difference was 5 times greater than the possible measurement errors. The analysis carried out by B. Wallace [14] showed that the circumferential speed of the Earth's rotation was superimposed

on the signal transmission speed. While in Crimea the latter was directed towards the signals from Venus, in the USA it had the opposite direction, that is, "the relative speed of light in space is c + v, not c."

These measurements are of great scientific value, however, the Crimean Observatory refused to further participate in the work and its signature does not appear in the measurement results.

4.9. Corpuscular Light Model

In the experiments and observations described above, it has been proved that the motion of an object of nature, called light, like all other objects of nature, obeys the classical law of addition of velocities. Its other properties have also been studied, by which it is possible and necessary to construct an approximate model consistent with these properties. Its basis should be the corpuscular model of light by I. Newton, confirmed by the latest discoveries: the phenomenon of the external photoelectric effect, in which, under the action of light, electrons are pulled out of matter, and the Compton phenomenon, which consists in the interaction of electromagnetic radiation with free electrons. Convincing evidence that radiation consists of directionally propagating photons are stimulated emission devices: lasers, masers, etc., in which, in the case of energy distribution over a spherical surface, the luminosity would always be determined by the geometric parameters of the emitter. The existence of directed stimulated radiation shows that particles (atoms, molecules) emit photons (quanta) only in certain directions.

According to our ideas, the light flux consists of photons, the characteristic size of the flux structure λ is a link. It can be represented as a continuous sequence of double charges: two electrical, positive and negative, and two magnetic - also positive and negative. The charges are located in two centers, the distance between which is λ/2 (Fig. 12).

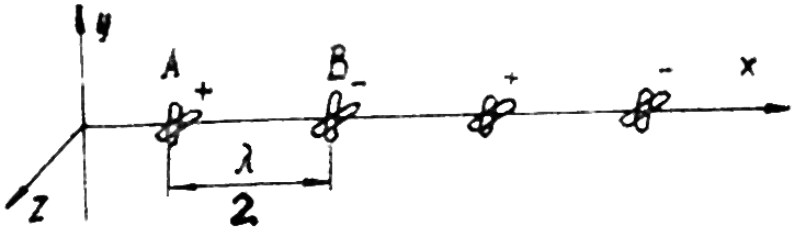


Fig. 12

In the first center, there are positive charges electric and magnetic in a mutually perpendicular direction, therefore the strengths of the electric and magnetic fields are also in a mutually perpendicular direction in the plane perpendicular to the direction of motion (Fig. 13) and (Fig. 14).

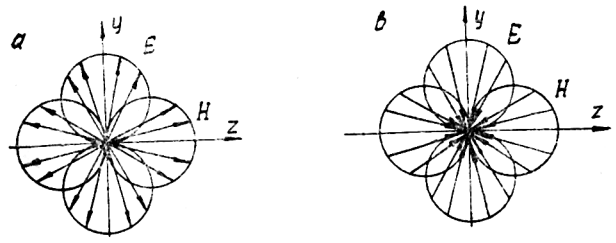


Fig. 13

Diagram of the strength of the electric E and magnetic H fields and the photon flux in the yz plane of the point A (a) and point B (c)

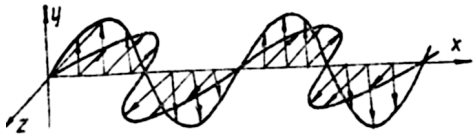


Fig. 14

The projection of the strength of the electric E and magnetic H fields in the xy and xz planes, respectively, of the photon flux

In the second similar center negative charges are in a similar position. An ensemble of two consecutive centers is a photon.

Such a structure of a photon leads to the fact that during radiation there is a predominantly collective output of photons, coordinated with each other along the length and cross section, they are stationary relative to each other. This group of photons is called a train. The zug becomes a rigid structure, stable in time and space, resembling a crystalline one. The size and configuration is determined by the conditions of the emitting body. Dividing a train into parts does not change the properties of the parts. When light propagates over cosmic distances for a long time, despite a significant decrease in the number of photons in the train, they retain their properties unchanged. The inhomogeneous structure of the flow, consisting of links, when moving, is similar to waves and can be described by the corresponding mathematical equations.

The speed of propagation of light relative to the source is approximately 3×10^8 m / s. If the source moves relative to the receiver, then in the receiver system the speed of light is a vector sum of the speed of light and the speed of the emitter.

The studied properties of light give reason to consider it no longer a simple stream of elementary balls independent of each other - photons, but a complex object of nature, an essential part of the real world. Electromagnetic radiation occupies an intermediate position in the hierarchy of matter between elementary particles, such as electrons, positrons, and the structural elements that make up the fields - electric, magnetic and gravitational.

* * *

From the observations of O. Römer it unambiguously follows that the speed of light obeys the classical law of addition of speeds. Therefore, for example, it is inappropriate to consider experiments with measuring the speed of synchrotron radiation as proof of the truth of the postulate $c = const$. The authors of these experiments unreasonably assume that the emitter is an electron in the orbit of the accelerator, and not the accelerator itself. The electron in the hydrogen atom is not considered as an emitter; the emitting object is a hydrogen atom, and for synchrotron radiation - an accelerator.

The examples given show that the second postulate of the theory of relativity - $c = const$ contradicts the experimental data, and the speed of light obeys the classical law of addition of velocities. Although it is obvious that a theory that adequately describes the real world cannot be built on such a postulate, nevertheless, for greater substantiation, let us consider the first postulate of the theory of relativity - Einstein's principle of relativity.

5. The first postulate of the theory of relativity

It is generally accepted that the first postulate of the theory of relativity is a development of Galileo's principle of relativity. However, it is not.

The summary of Galileo's principle of relativity is as follows: no experiments inside an isolated system can determine whether the system moves uniformly and rectilinearly or is at rest. In other words: mechanical, optical, electromagnetic and other natural phenomena in all inertial systems proceed in the same way. Inertial systems are those systems that move uniformly and rectilinearly relative to each other. Galileo's principle of relativity arose from the generalization of observations and experiments. The mathematical description of spatial and temporal quantities in inertial systems moving relative to each other is called Galileo's transformations and has the following form in a rectangular coordinate system:

$$x_1 = x - v\,t,\ y_1 = y,\ z_1 = z,\ t_1 = t; \qquad (33)$$

$$x = x_1 + v\,t,\ y = y_1,\ z = z_1,\ t = t_1.$$

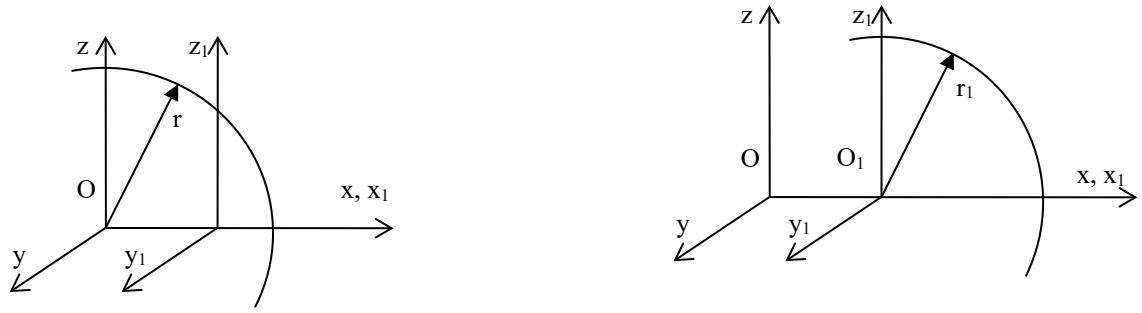
These equations describe the coordinates and time of one and the same point body in the Oxyzt frame of reference - conventionally stationary, and $O_1x_1y_1z_1t_1$ - moving relative to the first along the Ox axis with velocity v. Time is counted from the moment O and O_1 coincide.

Agreeing with Galileo's principle of relativity, Newton introduced the concepts of absolute, true, space and absolute, true, time, which is unchanged regardless of anything. The measures of these quantities - the distance between two points of a straight line and the time interval between two events in inertial systems - are unchanged, they are called invariants of Galileo's transformations.

Indeed, we take a straight line segment - Δx and a time interval - Δt in the system O, and equal to them - Δx_1 and Δt_1 in the O_1 system. Then we give the system O_1 the speed $v_1 \neq v$. In the moving frame O_1, according to Galileo's principle of relativity, it is impossible to determine empirically a new inertial state in comparison with the previous one. It follows from this that the line segment Δx_1 and the time interval Δt_1 remain the same and equal to Δx and Δt.

As an illustration of the manifestation of Galileo's principle of relativity, let us consider an example necessary in the further

presentation. We represent two frames of reference: fixed, conventional, Oxyzt, and one moving relative to the first along the Ox axis with a speed v, $O_1x_1y_1z_1t_1$. The direction of the corresponding axes coincides, (Fig. 15, a). At the moment of alignment of the origin of coordinates at point OO_1, a flash of light occurs. If this moment is taken as the origin of time, then the position of the front of light propagation at time t will be described by the equation of a sphere of radius r equal to the center at point O, if the source was stationary relative to the Oxyzt system at the moment of the outburst. With respect to the center O_1, the speed of light along the x axis is equal to the difference (c - V). And vice versa, if the source was motionless relative to the $O_1x_1y_1z_1t_1$ system, then the center of the sphere will be at the point O_1, and relative to O the speed of light along the x axis is equal to the sum (c + V), (Fig. 15, b).



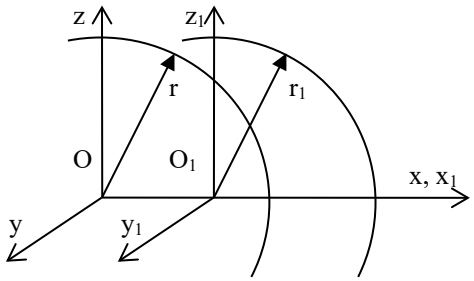
а) б)

Fig. 15

A typical presentation of the first postulate of the theory of relativity is as follows: mechanical, optical and electromagnetic phenomena in all inertial frames of reference proceed in the same way [3, 305].

But the stated formulation is camouflage, the postulate has a completely different meaning than that given in the definition. Introducing the second postulate into the theory, Einstein comes into conflict with Galileo's principle of relativity, which is incompatible with the postulate *c = const*. The incompatibility is clearly demonstrated as follows.

Let's go back to the example shown in Fig. 15. Under the same conditions, at the moment of coincidence of the origin of coordinates, a flash of light occurs (Fig. 16), this moment is taken as the origin of time.



Puc. 16

Now, without taking into account where the source is located in the O, or O_1 system, since in both systems the speed of light from the same source according to the postulate *c = const* is equal to c, we have that, on the one hand, the position of the front of light propagation at the time instant t will be described by the equation of a sphere of radius

$$r = ct = \sqrt{x^2 + y^2 + z^2} \tag{34}$$

centered at point O, on the other hand, the front of light propagation at time t_1 will be described by the equation of a sphere of radius

$$r_1 = ct_1 = \sqrt{x_1^2 + y_1^2 + z_1^2} \tag{35}$$

centered at point O_1. Thus, at the same time $t = t_1$, the front of light propagation will reach different points in space, which is meaningless.

Einstein resolves the created contradiction by rejecting the concepts of absolute, true, space and absolute, true, Newton's time and by introducing the concepts of relative space and relativity of simultaneity formulated by A. Poincaré and G. Lorentz. This innovation replaces Galileo's principle of relativity with a completely different principle, according to which in inertial frames of reference moving relative to the observer, the processes of nature proceed differently. The transformation of coordinates and time of Einstein's principle of relativity, written in the form of equations describing the coordinates and time of one and the same point body in systems moving one relative to another at a speed v along the Ox axis, have the form:

$$x_1 = \frac{x - vt}{\sqrt{1-\beta^2}},\ y_1 = y,\ z_1 = z,\ t_1 = \frac{t - \frac{vx}{c^2}}{\sqrt{1-\beta^2}}$$

$$x = \frac{x_1 + vt_1}{\sqrt{1-\beta^2}},\ y = y_1,\ z = z_1,\ t = \frac{t_1 + \frac{vx_1}{c^2}}{\sqrt{1-\beta^2}} \qquad (36)$$

Here, in a moving system, a straight line segment $\Delta x_1 = \Delta x\sqrt{1-\beta^2}$, and the time interval $\Delta t_1 = \Delta t/\sqrt{1-\beta^2}$ where $\beta = v/c$.

These equations are called Lorentz coordinate and time transformations. A reduction in Δx_1 in $\sqrt{1-\beta^2}$ and an increase in the time interval by an inverse value in a moving frame are called, respectively, Lorentz contraction of space and Lorentz time dilation. The invariant in these transformations is *c = const*. The speed of light is a quantity derived from the measures of space and time, is accepted by Einstein as basic, independent, and the fundamental concepts - space and time, on the contrary, are dependent, variables.

According to Lorentz transformations, the example shown in Fig. 14 under the same conditions takes the form shown in Fig. 17.

The front of light propagation in the O system has the shape of a ball

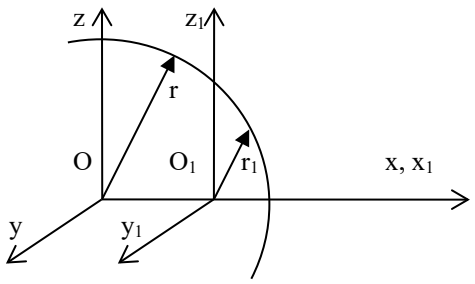


Fig. 17

of radius r = ct centered at point O, and in the O_1 system, the same front of light propagation has the shape of a ball of radius $r_1 = ct_1$, but centered at point O_1. Thus, we have one and the same front of light propagation in the form of a ball with two non-aligned centers (!).

The first postulate of the theory of relativity, or Einstein's principle of relativity, translated from the language of mathematics into the colloquial language, has the following formulation: *In inertial systems moving relative to the one in which the observer is located, the dimensions of the bodies decrease in the direction of motion, and the time intervals and mass increase in proportion to the ratio of speed the motion of systems to*

the speed of light c = const, that is, the processes of nature in moving systems proceed differently than in the observer's system.

According to the theory of relativity, for an observer A, who is in a stationary frame "A", his and all moving inertial systems, including one of them, "B", are unequal. The value of inequality for observer A is determined by the speed of movement of each system relative to him.

Observer B is in the moving frame "B". But for him his own system is stationary, and all the others are moving, including "A", stationary for observer A. Therefore, for observer B, inertial systems are also unequal, but exactly the opposite. According to his observations in the "A" system, the dimensions of the bodies decrease in the direction of motion, and the time intervals and mass increase, the processes of nature occur differently than in his system.

The question arises: "Are there any predictable changes?"

In response to it, Einstein wrote: "*The question of whether the Lorentz contraction is real does not make sense. Contraction is not real, since it does not exist for an observer moving with the body, but it is real, since it can be fundamentally proven by physical means for an observer who does not move with the body*"[2, p. 187, Vol. 1].

Unfortunately, he did not indicate the physical means by which this paradox could be resolved. He did not indicate for a simple reason - there are no physical means by which one can experimentally check the predicted changes. If Galileo's principle of relativity is the result of a generalization of observations and experiments, then Einstein's principle of relativity does not and cannot have experimental verification.

Indeed, any physical measurement consists of two parts: the first is the choice of a standard, a measure for measuring the value, the second is the measurement by a certain method (measurement procedure). Inside an inertially moving system, and we can take any speed of the system, according to relativistic concepts, everything contracts (space) or increases (time, mass) - both the measured object and the standard. Therefore, it is impossible to check the proposed changes objectively, by experience, regardless of our judgments.

Einstein's principle of relativity, in which the essence of the theory of relativity is formulated, has no independent meaning. It is a logical consequence of the *c = const* postulate, which contradicts reality,

therefore the very principle of Einstein's relativity and the theory of relativity also contradict reality.

The general theory of relativity (GTR) also contradicts reality, since it is based on the same postulate of the constancy of the speed of light. To it, in the general theory, one more, arbitrary, it is not clear from where taken postulate is added: *the velocity of propagation of the gravitational field v_g is equal to c, that is, $v_g = c = const.$* According to the postulate of the general theory of relativity, it is believed that the speed of propagation of the gravitational field is v_g = 300,000 km / s, and this speed does not obey the classical law of addition of speeds.

The assertions that some natural phenomena find their explanation only as a consequence of the theory of relativity, and thereby prove its correctness and justify the necessity, are not substantiated either. On the contrary, all natural phenomena, except for thought experiments such as the "paradox of twins", are logically consistent and simply described in terms of classical physics. Let's take a look at some of them as an example.

6. Consequences of the theory of relativity

6.1. Lifetime

Let us consider the change in the lifetime of elementary particles, for example, cosmic π-mesons, arising from the interaction of cosmic rays with the Earth's atmosphere.

<…> Artificial mesons move relatively slowly, and their lifetime is practically close to the lifetime of mesons at rest. Experiments of this kind make it possible to find out the proper lifetime of π-mesons: $T_0 = 10^{-8}$ sec.

So, if the speed of cosmic mesons is so high that it will approach the speed of light, then the distances that they can travel will be approximately $c \cdot T_0 = 3 \cdot 10^{10} \cdot 10^{-8} = 3 \cdot 10^2$ cm. But very high energies were even observed at sea level. How does it happen that they penetrate into the atmosphere, passing in it distances h = 30 km = $3 \cdot 10^6$ cm for short periods of their lifetime? This paradox is easy to figure out given the time dilation; the lifetime T when observed on Earth turns out to be much greater than T_0. Indeed, we have $T = T_0 / \sqrt{1-\beta^2}$; for π-mesons to reach the Earth, this time must be greater than the height of the atmosphere divided by the meson velocity v; the minimum speed, therefore, must satisfy the condition

$$\frac{T_0}{\sqrt{1-\beta^2}} = \frac{h}{v} \text{ or } \frac{v/c}{\sqrt{1-\beta^2}} = \frac{h}{cT_0} = \frac{3 \cdot 10^6}{10^{-8} \cdot 3 \cdot 10^{10}} = 10^4 \qquad (37)$$

From here you can calculate the v/c ratio:

$$v = c \cdot (1 - 0.5 \cdot 10^{-8}) = 0.9999999995 \cdot c \qquad \text{[15, c. 256]»} \quad (38)$$

Carrying out such complex reasoning and calculations is caused by the arbitrary introduction of a limit on the speed of motion of cosmic particles. Everything falls into place if, from the observed behavior of high-energy π-mesons, their velocity is found in the normal way: by dividing the distance traveled by the time during which they moved

$$v = \frac{h}{T_0} = \frac{3 \cdot 10^4 \text{ м}}{10^{-8} \text{ сек}} = 3 \cdot 10^{12} \text{ м/сек}. \qquad (39)$$

We have that the speed of cosmic π-mesons is much greater than the speed of light.

This observation shows the inconsistency of another statement contained in the postulate $c = const$, that the speed of light in a vacuum, be it, is the maximum possible in nature.

6.2. Deflection of a ray of light in the gravitational field of the sun

"The first test of Einstein's predictions was carried out mainly thanks to the initiative of the British astronomer Eddington on May 29, 1919. Two British expeditions were sent to observe a total solar eclipse, one to the west coast of Africa, the other to northern Brazil. Both returned with a series of photographs of the stars surrounding the Sun (Fig. 18). The results of studying the photographs obtained were announced on November 6, 1919. They proclaimed the triumph of Einstein's theory. The displacement predicted by Einstein, amounting to 1.75 arc seconds, was fully confirmed"[15, p. 249]. Note that carrying out such experiments is a big technical problem, so the reliability of the results of Eddington's expeditions is questionable [16, p. 131].

Let us leave the question of the curvature of space according to the theory of relativity, or the magnitude of the mass of a photon according to another theory - this is still an unsolved problem and it is not included in the scope of this presentation, we will consider the ambiguity of the observations of these expeditions. Measurement of the deflection of a ray in the gravitational field of the Sun is possible in the presence of a vacuum near it. But it is known that the Sun is surrounded by a hot atmosphere - a corona that distorts the ray trajectory. The observed deflection of a ray of light in the vicinity of the Sun is due to the optical density of the corona, which is unknown. The deflection of the beam should primarily serve as an indicator of the density of the corona at the corresponding height above the surface of the Sun. Such measurements in modern conditions with telescopes in the Earth's orbit would be interesting.

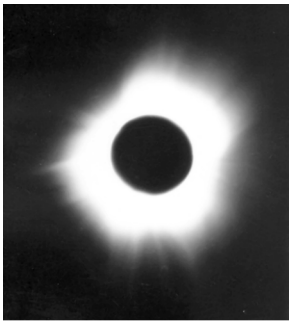


Рис. 19

In Fig. 19 shows a photograph of the solar eclipse on July 31, 1981, Novosibirsk region. The image clearly shows the corona surrounding the Sun.

6.3. Mass growth versus speed

The representation of the dependence of mass on velocity occupies a special position in modern physics. The history of the formation of the ratio between mass and energy is described by VV Cheshev in work [1], where, in particular, it is said: “The idea of an increase in the mass of an electron was partly initiated by the ether hypothesis. In 1881, J.J. Thomson, proceeding from theoretical considerations, pointed out that “an electrically charged body, due to the magnetic field that it causes, according to Maxwell's theory, should behave as if its mass increased by a certain amount depending from its charge and form”. Subsequently, Thomson showed that the mass of a moving charge should increase with an increase in its motion. Kaufman's experiments have consolidated the idea of an increase in the mass of a moving electron ”[1, p. 117].

Thomson's initial, uncertain assumption about the observed "as if" mass growth has now grown into a certainty of equivalence between mass and energy, fixed in the well-known formula $E = mc^2$, where E is energy, m is mass. For our case, the following remark from the cited work is essential: "The results of Kaufman's experiments suggest that the action exerted by the field on a moving charge differs from its action on a resting charge" [1, p. 117].

This phenomenon seems to manifest itself in the operation of particle accelerators. But in charged particle accelerators, there is not a change in the mass of particles depending on the speed (this is impossible to observe), but a change in the acceleration of charged particles, which is

inexplicable in modern physical concepts, under controlled electric and magnetic fields.

From Newton's second law a = F / m, where a is acceleration, F is force, m is mass, it is seen that acceleration depends on both force and mass. Therefore, it seems more logical to explain the observed acceleration not by an increase in mass, but by the result of a change in the forces of interaction of electric and magnetic fields with charged particles moving in these fields.

The change in the forces of interaction is determined by the final speed of propagation of the disturbance (change) of the field strength. The invariance of the forces of interaction during the motion of interacting bodies is possible only if the velocity of propagation of the disturbance is infinite.

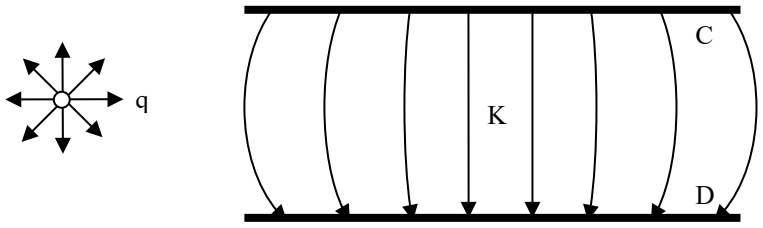


Fig. 20

No matter how quickly the charge q is moved to the point K of the electric field of strength E (Fig. 20), created by the charged plates C and D, the position shown in Fig. 21, can take place only after a finite time interval determined by the speed of propagation of the disturbance in the field E.

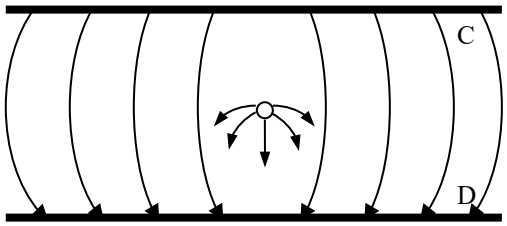


Fig. 21

We believe that the interaction of the field with a charged particle in a vacuum occurs with a speed of c, the speed of propagation of the

electromagnetic field, while maintaining the equality of the momentum of the force to the moment of momentum. Then the force of interaction F(v) of an electric field of strength E and a particle having a charge q and moving in this field with a speed v will be equal to:

$$F(v) = (1 - \frac{v}{c}) \cdot E \cdot q \cdot \sin\alpha \qquad (40)$$

where α is the angle between the vectors of intensity E and velocity v.

Under the influence of the accelerating field, the velocity increases, and with it the kinetic energy of the particle. In this case, a certain change in the configuration of the accelerating field and the intrinsic field of the accelerated particle occurs, which leads to an increase in its potential energy, i.e., the transition of the potential energy of the accelerating field into kinetic energy and potential energy of the accelerated charge. The total energy of the particle A, equal to qU (U is the traversed potential difference), is summed up of its kinetic energy - E_k and potential - E_p

$$A = E_k + E_p . \qquad (41)$$

The kinetic energy of the accelerated particle is limited by the limit

$$E = \frac{mc^2}{2}, \qquad (42)$$

the potential energy of the accelerated particle, perhaps, has no limit, until it is visible. Therefore, the total energy of the accelerated particle, despite the speed limitation, continues to grow and is determined only by the potential difference passed. This process is reversible; when the accelerated particle interacts with the braking field, the stored energy is released.

The Lorentz force - F(v), acting on a charge moving in a magnetic field, is determined in a similar way:

$$F(v) = (1 - \frac{v}{c}) \cdot q \cdot [\vec{v} \times \vec{B}] = (1 - \frac{v}{c}) \cdot B \cdot q \cdot v \sin\alpha , \qquad (43)$$

where B is induction, α is the angle between the directions of velocity and induction. The Lorentz force is directed perpendicularly to the plane in which the vectors $\vec{B}$ and $\vec{v}$ lie.

6.4. On the invariance of Maxwell's equations

The requirement of invariance (invariance) of Maxwell's equations when describing the propagation of electromagnetic radiation in a system

with respect to which the source moves at a certain speed is a mathematical form of expressing the postulate $c = const$.

Maxwell's equations describing the propagation of electromagnetic radiation in systems inertially moving one relative to another, taking into account the law of addition of velocities for light, in the system relative to which the source is moving, and in the system where it is at rest, have a different form. But these equations are invariant under Galileo transformations, and in such a mathematical description all inertial reference frames remain equal [17, p. 176-195 (Appendix 1)].

6.5. Nuclear energy

The most ridiculous legend about the theory of relativity is the legend that humanity would not have mastered the secrets of nuclear energy without the theory of relativity.

To find the truth here, let us recall the main milestones on the way to the goal.

1896 - A. Becquerel discovered radioactivity, spontaneous decay of nuclei.

Pierre and Marie Curie in France, E. Rutherford and F. Soddy in England studied radioactivity in detail and by 1903 they found that the process of spontaneous transformation of some nuclei into others proceeds with the release of a huge amount of energy.

1932 - Rutherford's student D. Chadwick discovers the neutron.

1938 - O. Hahn and F. Strassmann carry out the fission of uranium nuclei under the action of neutron bombardment.

The next year F. Joliot-Curie determines the average number of neutrons emitted during the decay of uranium nuclei and finds the fundamental possibility of a chain reaction.

The final stage is the launch of E. Fermi's nuclear reactor in 1942.

Perhaps this list should include the artificial transformation of nuclei, carried out in 1919 by E. Rutherford, the discovery of artificial radioactivity by the spouses Irene and Frederic Joliot-Curie in 1934, and some other. It also does not contain the names of thousands and thousands of engineers and technologists, workers and slaves of uranium mines and chemical processing plants who created both the base and the nuclear reactors themselves.

But in this list there is no place for Einstein with his theory - they had no effect on the mastery of nuclear energy. The use of the formula for the equivalence of mass and energy in calculations is nothing more than idle mathematical exercises.

The above analysis shows that the postulates underlying the theory of relativity contradict the experimental data. The paradoxical consequences of this theory have a simple explanation in terms of classical physics. All this obliges us to conclude that the theory of relativity is not a naturally scientific theory.

7. Methodological foundations of the theory of relativity

"To follow the questions raised by the latest revolution in the field of natural science is a task, without the solution of which militant materialism can in no case be either militant or materialism."

V. I. Lenin

As noted above, the first postulate of the theory of relativity has no independent meaning, it is a logical consequence of the second postulate, when discussing the methodological foundations of which the comparison of the concepts of “absolute” and “relative” motion acquires the most significant significance. And they, in turn, are associated with different concepts of space and time. If in classical science the objectivity of space and time is recognized, their independence from the cognitive actions of the observer, then in relativistics the properties of space and time turn out to be dependent on the position of the observer. On the one hand, motion in its essence and by definition is relative, that is, it reveals itself in a change in the relative position of bodies in time. In this sense, the idea of relative motion was accepted by classical physics, its methodology was based on the materialistically understood idea of cognition of objective reality. At the same time, I. Newton used the concept of absolute motion, which is rejected by the theory of relativity. Absolute motion, as motion relative to an absolutely resting frame of reference, is not detectable due to the absence of such a frame. However, a different meaning is laid in the concept of "absolute motion" of Newton. It consists in the fact that through the concept of absolute motion the idea of objectivity of motion as a natural process is expressed [1].

The concept of movement as an objective process expresses the basic principles of materialistic philosophy. From these positions, one should consider the classical ideas about the relativity of motion. Since the essence of motion consists in changing the relative position of spatial objects, the fixation of the body's movement necessarily presupposes a group of objects that are stationary relative to each other and define a frame of reference for fixing the relative displacements of the body. Movement relative to the frame of reference is characterized by the relative speed of the moving bodies. The term relative speed in this case means that the speed is defined in a specific frame of reference. Therefore, for the same object, several relative velocities can be found,

depending on the choice of the frame of reference. This circumstance, in the course of the approval of the ideas of relativism, became the basis for an explicit or implicit doubt about the objectivity of motion, acting under the guise of denying Newton's absolute motion. The trivial and popular assertion "relative motion" has acquired the tinge of epistemological relativism, which makes the existence of motion dependent on the choice of a frame of reference, which is identified with the choice of a frame of reference. The conventional choice of a moving or stationary system is based on this.

This arbitrariness exists only in the sphere of reasoning, deliberately limiting itself to the relative motion of two bodies, with one of which a coordinate system must be associated (in the actual absence of a frame of reference). However, abstract representations of this kind ignore real physical connections and distort the real situation to the point of absurdity. In real physical practice, arbitrariness in the choice of the frame of reference does not exist.

"And the apple can be considered falling on the Earth with the same right as the Earth falling on the apple" - say relativists, followers of Einstein. But Newton's dynamics introduces a significant correction to this issue: according to the corollary of Newton's third law, “the center of gravity of a system of two or more bodies from the interaction of bodies on each other does not change its state of rest or motion. Therefore, the center of gravity of the system of all bodies acting on each other, or is at rest, or moves uniformly and rectilinearly." From which it follows that the speed and magnitude of mutual displacements are proportional to their masses, and for the same time an apple, for example, will shift relative to the general center of gravity of the "Earth-apple" system by an amount 10^{26} times greater than the Earth. Therefore, the expression "an apple falls to the Earth" is just as much more logical than the opposite! " [17, p. 180].

Frames of reference physically distinguished by their properties (Earth, a system of fixed stars, etc.) provide the basis for both practical activity and natural scientific experiment. It is true that for one reason or another of a theoretical nature, we can associate the coordinate system with any of the moving bodies and recalculate all the characteristics of the relative motion with respect to this body. But this technique is possible only because there is a real, physically separated frame of reference, in the transition to which all calculated values acquire physical

meaning and can be the basis for practical measurements and practical actions. The possibility of choosing different reference systems (and coordinate systems) and the dependence on this choice of the speed of relative motion does not deny the idea of the objective nature of motion.

With the understanding of motion as an objective physical process, a mathematical description of which can be given in different coordinate systems, it is necessary to consider the concept of "relative speed". This value characterizes the movement of the body relative to a specific frame of reference K'. If this system, in turn, moves relative to another system K, then in relation to the latter, all relative velocities will acquire a different meaning. Here you can use the analogy with other dimensions. For example, if rod A is two times shorter than rod B, and rod B is n times shorter than rod C, then we consider (and this is confirmed by spatial measurements) that rod A is 2n times shorter than rod C. Otherwise, the very basis of logical thinking and meaningful practical action is destroyed.

From these positions, it is necessary to consider the postulate $c = const$, which asserts that the same moving object (quantum of light, front of a light train) has the same speed with respect to all reference bodies, no matter how these bodies move relative to each other. Then a quantum of light must have the same speed c relative to body A and relative to body B even under the condition that body B moves relative to body A (for example, in the direction of motion of a light pulse) at any speed less than the speed of light c. It is easy to see that such reasoning rejects the above idea of the relativity of motion, because the motion of light, determined in the general case with respect to the reference frame, turns out to be in no way dependent on this ratio, i.e., independent of the choice of the coordinate system, in other words , "Absolute".

Can such a view be theoretically and empirically proven? This postulate is not combined with the consistently pursued idea of objectivity of movement. The methodological assessment of this postulate leads only to one conclusion: the postulate $c=const$ has the character of a convention, a kind of theoretical (more correctly, mathematical) convention.

A. Poincaré suggested using *the agreement* on the constancy of the speed of light relative to observers making time measurements when determining the time. A. Einstein indirectly proposes the same in his article of 1905 [2]. It would seem that this solves the question of the physical meaning of the SRT kinematics, which also takes on a conditional character, in connection with which the different aging rates

of twins should also be considered as a theoretical invention. The question about the conventional nature of the second postulate of SRT *c* = *const*, which is not endowed with physical meaning, becomes quite clear. The speed of light, like the speed of any object in the real world, can be determined mathematically only relative to the frame of reference, but physically - relative to the reference body. The definition "the speed of light as such, regardless of anything - *c* = *const*" introduces a new concept into science that has nothing to do with the real world. Using this concept and carrying out standard mathematical operations with it, as with real speed, A. Einstein makes the theory of relativity a mathematical abstraction that contradicts reality, a philosophical idea of an idealistic direction. And the author himself, in his own words, "... is more of a philosopher than a physicist, and he must certainly be considered and evaluated as a philosopher, even if he had to work primarily as an "indirect philosopher", this is necessary due to the factual philosophical content of his scientific creativity "[18, p. 15].

It is precisely because of its philosophical content that the theory of relativity has become widespread. In order to more fully imagine how a philosophical idea became a physical theory, one should turn to the history of the formation of this idea.

8. Etheric theory of light

Based on observations and experiments, the theory of the nature of light was first put forward by I. Newton at the end of the 17th century, in which light was considered as a stream of particles, corpuscles, emitted by a light source and propagating rectilinearly in a homogeneous medium. Reflection from a mirror was compared with the rebound of an elastic ball from a wall, refraction was explained by the attraction of a corpuscle when passing from one medium to another. Römer's definition of the speed of light undoubtedly influenced Newton when he created a corpuscular theory of light, from which it follows that the speed of light obeys Galileo's principle of relativity.

Simultaneously with Newton's theory, there was a wave theory outlined by C. Huygens in his work "Treatise on Light", where light was defined as an elastic impulse propagating in a special medium - ether filling space, that is, the wave theory considered light as ether waves and likened it to waves in the air.

In the 19th century, the development of concepts of the ethereal nature of light was facilitated by the works of A. Fresnel. Study of electrical and magnetic phenomena by M. Faraday, J. Maxwell's construction of the theory, in which it was shown that light is of an electromagnetic nature. And, finally, the experimental study by H. Hertz of electromagnetic radiation, which was considered to be waves, led to the fact that the hypothesis of mechanical ether was replaced by the hypothesis of electromagnetic ether - an all-pervading medium capable of transmitting electromagnetic signals, which is a carrier of electric and magnetic fields and electromagnetic oscillations. The electromagnetic field was supposed to be a form of ether movement. The existence of the all-pervading ether made inertial systems in the study of electromagnetic phenomena not isolated from it, therefore Galileo's principle of relativity became inapplicable in these cases. Within the framework of the theory of electromagnetic ether, Newtonian absolute space was identified with the World ether, in connection with which an attempt was made to detect the "etheric wind", that is, to detect motion relative to the ether, this would be absolute motion.

To determine the absolute motion in 1881, Michelson set up an experiment according to the following scheme (Fig. 22). The light from the source I on the semitransparent mirror M_3 is divided into two beams 1 and II, which fall on the mirrors M_1 and M_2 and are reflected from them. Beam 1, traversed the path $M_3M_1M_3$, and beam II, traversed the path $M_3M_2M_3$, meeting, give an interference pattern seen by the observer H. Let the interferometer move relative to the ether with a velocity v along the shoulder H - M_2 and interference is observed in the device. When the interferometer is rotated by 90° relative to the initial motion in the ether, the path traversed by beams 1 and II in the presence of the "ether wind" will be different than in the first case, and the interference pattern will change.

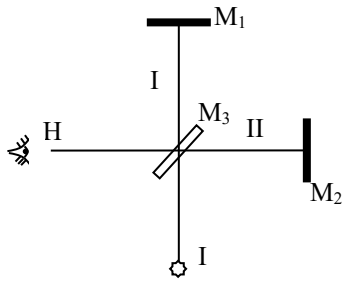


Fig. 22

The experience of A. Michelson showed that the interference pattern does not change its kind, that is, there is no ether wind, Galileo's principle of relativity turned out to be valid for electromagnetic phenomena, therefore, there is no ether as such. Subsequently, A. Michelson's experiment was repeated many times in various versions and in all cases with the same result.

In addition to Michelson's experiment, the aetheric theory encountered other difficulties. Polarization of light leads to the need to consider light waves as transverse, and transverse, or shear, waves exist only in solids. The propagation of light over long distances indicates a small attenuation of these waves, which is possible only in absolutely rigid and elastic bodies. On the other hand, the ether must be permeable and penetrate, since the bodies moving in it do not experience resistance to their movement, it must freely penetrate into solid transparent bodies

through which light passes. Thus, the ether must have mutually exclusive properties.

Wave-like interaction of light with light - interference and light with an obstacle - diffraction, cannot serve as confirmation of the presence of a light-carrying medium, since the presence of waves does not unambiguously follow from the wave-like interaction. For example, moving at a certain speed relative to a corrugated surface (washboard) and feeling it, we get a wave-like interaction, the same as the interaction of waves on water with a floating plug, a test body. With the same mathematical description, in the second case, we have the interaction of the wave and the test body, and in the first case, there are no waves.

When calculating the speed of light in an inertial frame moving relative to the emitter with a certain speed v, or, which is the same, in the frame relative to which the emitter moves at the same speed v, in order to obtain a constant speed of light, one must initially agree with the fact that that space and time change according to the rules of Lorentz transformations. But such a technique should be seen as an agreement - philosophical conventionalism for the postulate $c = const$. The right to apply the Lorentz transformations in the ether theory was the result of an attempt to reconcile the absence of the "ether wind" and the existence of the ether itself. But since later it was finally established that there is no single medium of the carrier of the electromagnetic radiation of the ether, the use of Lorentz's transformations has become anything unjustified arbitrariness. Therefore, observations and experiments on measuring the speed of light from a moving source should be considered by methods and in terms of classical physics, as was done above.

If we take the position of the materialist methodology of the cognizability of the world, the experimental substantiation of the theories put forward, then the ethereal theories with their fundamentally unknowable mystical elements should be rejected.

Despite all the above contradictions, most of which were known by the end of the 19th century, Huygens' ethereal theory supplanted the Newtonian corpuscular theory and took a dominant position. However, its contradictions not only did not disappear, but took on crisis features of an ideological nature: electromagnetic waves exist, are observed, are recorded, and the medium, the carrier of these waves, ether, cannot be detected. All sorts of tricks in the construction of ether models, including the revision of the fundamental fundamental concepts of space, time,

matter, did not give a logically and experimentally consistent picture of the world.

9. Invention of the theory of relativity

Under the conditions described above, the invention of the theory of relativity was, to some extent, a natural act, but its appearance only aggravated the existing crisis. Here the word "invention" for the theory of relativity is not a reservation, but a statement that it was really invented, assembled entirely from the elements of the ether theory, only in a different order, like in a children's designer. There is not a single new element in it in comparison with its predecessor, there is not a single new discovery. This is well shown, for example, in the work "Einstein's Theory of Relativity" by Max Born, the author "who personally took an active part in the main scientific events of the first half of the twentieth century." The recommended book is voluminous, but the theories described in it can be schematically outlined rather briefly [15].

The essence of the ether theory. Experimental advances in the study of optical phenomena in the 19th century convinced the scientific world that light is waves of ether. But the experiment on detection of the ether wind, carried out in 1881 by A. Michelson, spoiled the harmonious picture. There was no ethereal wind, the speed of light in all directions relative to the source was the same. Many physicists could not accept the obvious conclusion from the named experiment: the ideas about the existence of the ether are false and one should return to the corpuscular ideas of I. Newton. They began to look for other reasons. To reconcile Michelson's experience and the ether existing in their imagination, some scientists presented fantastic, one might say, delusional thoughts.

In 1892 J. Fitzgerald suggested that *bodies in motion, interacting with the ether, contract in the direction of their motion* and the distortion of the device compensates for the undetectable motion relative to the ether. J. Larmor adhered to similar views. G. Lorentz acted most radically. Translating Fitzgerald's ideas into mathematical formulas in order to obtain a constant in magnitude the speed of light, he comes *to the need to count* not only the change in the size of bodies in a moving system, but also *a change in the flow of time* in proportion to the speed of the system relative to the ether. Let us emphasize especially that the change in the flow of time was found by Lorentz not as a result of experiments and observations, but by a school method in the course of *mathematical adjustment* of Michelson's experiments to etheric representations. The resulting mathematical equations later became

known as Lorentz transformations. When calculating according to these equations, the speed of light always turns out to be the same, therefore, the movement relative to the ether cannot be fixed. This is how the experimental constancy of the speed of light was combined with an imaginary ether.

These ideas were supported and approved by the famous mathematician and philosopher A. Poincaré.

As an employee of the patent office, A. Einstein knew the rules for drafting applications, according to which he composed a new invention from elements of the borrowed. After many years of searching, the main "a*chievement*" of the aetherists was *the "explanation" of the constancy of the speed of light* in Michelson's experiments. Einstein makes this "achievement" the basis of his theory, puts it as a postulate "*... light in emptiness always propagates at a certain speed V, independent of the movement of the emitting body",* in which the connection with ethereal ideas is clearly visible: *"... with a certain speed V, independent of the motion of the emitting body.*" It is in the medium (ether) that the speed of wave propagation does not depend on the motion of the emitter. Only later, under the onslaught of questions, Einstein gave a different, expanded and somewhat different meaning, definition of the postulate as a self-evident property of nature without any justification: *"The same light ray propagates in emptiness with speed "c" not only in the frame of reference K, but also in every other frame of reference K', moving uniformly and rectilinearly relative to K".*

Using the announced postulate and ready-made mathematics - the Lorentz transformations, he gets that in systems moving relative to the observer, bodies contract, and time flows in a different way than in the observer's system. In his fundamental work, A. Einstein did not indicate a single previous work, from which he borrowed ideas and mathematics. Typical "creative" plagiarist approach. In modern literature, this fact is constantly noted, but is considered by apologists no more than a prank of a genius.

The most inconvenient element of the ether theory was the proof of the existence of the ether itself. Ether in the ether theory manifests itself and exists only during the passage of waves through it. No waves, no ether. Therefore, in the new theory, it is declaratively excluded from consideration. However, light in the theory of relativity is considered as waves. A wave, by definition, is the propagation of a disturbance in a

medium. Therefore, if there are waves, then there must be a medium, a carrier of waves. Yes, it seems so, but this is no longer ether, but, say, a vacuum. But vacuum is emptiness, nothing, there can be no waves in it. Then - "physical vacuum", "physical field", or something like that, indefinite, called dualism. The main thing is that now it is not necessary to consider the physical characteristics of the light-carrying medium, it is not in theory, and to coordinate them with the parameters of the waves of the medium. Light, and with it all electromagnetic radiation, have become a kind of abstraction, devoid of any real, consistent properties: waves - without a medium, particles - without mass.

The result is a chimerical theory, similar to the ethereal one, but without ether. It contains all the developments of the ether theory, but its main element, the ether itself, is excluded, there are waves, but the medium, the carrier of waves, is not. What was a consequence of mathematical calculations in the ether theory - the constancy of the speed of light, as a result of changes in the size of bodies and time intervals, in the new theory is set as the cause. And the reason for the ether theory - the change in the size of bodies and time intervals, was a consequence of the constancy of the speed of light. What united both theories is that the predicted changes in the size of bodies, time intervals and mass are fundamentally undetectable, mystical. If in moving inertial systems time and distance change in accordance with the Lorentz transformations, then this applies not only to measured bodies and phenomena, but standard measures of length and control clocks.

Unlike the ethereal theory, in which even mythical causes and mechanisms of interaction of phenomena were considered, in the invented theory its predictions have *neither reasons nor mechanism* of changes, they cannot be confirmed or refuted by scientific methods. Everything must be taken on faith. Instead of the obligatory concept - "I know", a new concept - "I believe" is introduced into science, which makes this problem similar to the scholastic task of the Middle Ages: how many devils can fit on the point of a needle?

Instead of returning to the views of Galileo-Newton while studying the nature of light and on this basis to develop physics further, as W. Ritz tried to do, Einstein introduced one of his own fictions - the postulate $c = const$, and all the other fictions of the Etherists based on the postulate logically tied one by one.

Perhaps the scientific community and the world would have survived such a metamorphosis calmly, and the theory of relativity, along with the ether theory, would have taken their rightful place in the list of curiosities in the history of science, if politics and politicians had not intervened in the development of events.

10. The world at the turn of the 19th and 20th centuries

“A very special atmosphere has been created around the theory of relativity. She defends herself with extraordinary passion, and her opponents are subjected to all kinds of attacks, from which it is clear that this is not at all about the details of some theory, but that here in this area the class struggle is reflected, the participants of which do not even realize that they participate in it. "

A.K. Timiryazev. Introduction to theoretical physics. M., 1933.

The end of the 19th and the beginning of the 20th centuries are characterized not only by great achievements in the field of science and technology, but by the intensification of interstate and class struggle.

People died in the savannas of Africa, the jungles of Asia, in the fields of Manchuria, drowned in the waters of the Sea of Japan. Under these conditions, the ideas of solving social problems through the class approach became more and more attractive, and the philosophical base of Marxism, as you know, is materialism. The struggle acquired a particularly fierce character when the death of universal human values in Europe became global and Russia began to put into practice the formula of social justice: from each according to his ability, to each according to his work. Einstein's philosophy, "scientifically" refuting materialism, turned out to be the most convenient way for those who were scared to take advantage of the successful outcome of social undertakings in Russia.

In search of ways to win the class struggle against the working people, many bourgeois ideologists seized on the philosophy of the theory of relativity as an antidote to the philosophy of the working people - dialectical and historical materialism - the philosophy of the optimal existence of society as a whole and the optimal existence of each of its members.

The introduction of the theory of relativity and related worldview ideas into the consciousness of wide circles of the public was an act of undermining the foundations of materialistic philosophy by substituting and perverting the basic concepts of this philosophy: time, space, matter, energy and others. The speed of light, like the speed of any object, is a quantity that characterizes the ratio of objects of the material world in space and time; it was arbitrarily declared the basic concept. And the former naturally scientific, fundamental concepts of the real world, which

have become philosophical categories: space, time, mass, are dependent quantities, variables. A simple method of admitting a relatively small "technical" error was able to disguise and push through a large philosophical and worldview problem - to turn the cognized world upside down. According to its purpose, the theory of relativity began to perform some of the functions of *religious and mystical doctrines* losing their positions and, first of all, very successfully *the function of discrediting common sense, perverting the methods of scientific knowledge.* (What are the holy miracles, if, for example, science has "proven" that a twin flying under certain conditions on a space flight, after returning, can meet with a much older twin brother, or even with a son who has become older than his father). This theory took over from religion not only the structure of its construction, it is based on dogmatic postulates that contradict common sense and reality, but also methods of asserting its dominance: substitution of concepts, ruthless suppression of opponents. She also incorporated elements of religious mythology into her content: the creation of the world as a result of the Big Bang and, possibly, the end of the world due to scattering and dispersal.

The theory of relativity was formed gradually, therefore, scientists E. Mach, H. Poincaré, H. Lorentz and others [1], [19], who have done a lot of preparatory work, should be included in its team of authors. And although each of them strove to reveal the truth in natural science, in essence they worked for philosophical concepts that were contrary to common sense, in other words, for mysticism and idealism. It should also be borne in mind that this theory was not created specifically for the purposes for which it began to serve, just some were mistaken in search of truth, while others passed off these errors as truth. There is hardly another such period in the history of mankind, an example of the concentrated influence of physics on philosophy and, therefore, on politics. This is clearly seen in the publications of those years, starting from the works of Mach, in which things are viewed as complexes of sensations, the cognizability of the world, causality and regularity, space and time are interpreted subjectively, idealistically. For example, Mach writes: “We have as many substantial quantities as bodies have properties, and there is no other function for matter, except for expressing the constant connection of individual properties, among which there is only one mass” [20, p. 165].

According to Herneck, “the Newtonian concept of the absolute nature of time, space and motion, despite the doubts expressed by Leibniz, remained unshakable for two centuries. Not a single physicist thought or dared to question these propositions of Newton.

The first natural scientist to criticize these propositions was E. Mach. In his Prague report of 1871, he rejected Newton's concept of "absolute time". In his "Mechanics" he criticized Newton's views on "absolute space" and "absolute time" in their totality and tried to refute them "[18, p. 91]. Mach's ideas were formalized in Einstein's theory. This was recognized by the supporters of Einstein (Academician VA Fock wrote that in the creation of the theory of relativity, “the philosophical position of Einstein, who had been under the influence of Mach's ideas all his life, played a role”) [21, p. 13].

Einstein himself was aware of this: “Mach clearly understood the weaknesses of classical mechanics and was not far from coming to the general theory of relativity. And this is half a century before its creation! " [2, p. 31, T.4].

In 1908, during a very difficult period for the revolutionary movement, V. I. Lenin wrote the book "Materialism and Empirio-criticism", dedicated to the struggle against the perversions of dialectical and historical materialism, precisely with those theses that were formulated by Mach and Poincaré and which formed the basis of the theory of relativity. In the section "Two Trends in Modern Physics and German Idealism" V. I. Lenin notes that the famous Kantian idealist G. Cohen "takes the basic philosophical tendency of that school in physics, which is now associated with Mach, Poincaré, etc., this tendency as idealistic ”[22, p. 297, T. 18].

The adherence to the German school of idealistic physicists allowed Einstein "to carry out a complete relativization of space and time" ... exerting "a decisive influence on the philosophical foundation of the theory of knowledge" [23, p. 84] and become the author of a "doctrine", the direction and essence of which Lenin revealed with amazing accuracy at a time when he did not yet know that such a "doctrine" had already been created: "Hartmann is a German idealist, much more reactionary than Cohen, shade" correctly feels that the idealism of the new physics is precisely a "fashion" and not a serious philosophical turn away from natural-historical materialism, and he therefore correctly explains to physicists that in order to transform "mfashion" into a consistent, integral,

philosophical idealism, it is necessary to radically alter the doctrine of the objective reality of time, space, causality and the laws of nature. It is impossible only atoms, electrons, ether to be considered a simple symbol, a simple "working hypothesis" - it is necessary to declare a "working hypothesis" and time and space, and the laws of nature, and the entire external world "[22, p. 301, T.18].

Analyzing the reasons for the penetration of idealist currents into the new physics, which led to its crisis, V. I. Lenin shows the way out of this situation: “The materialistic basic spirit of physics, like all modern natural science, will conquer all and all crises, but only with the indispensable replacement of materialism metaphysical dialectical materialism” [22, p. 321 Vol. 18]. However, the work of V.I. Lenin remained incomprehensible and has not yet exerted the proper influence.

One more important factor should be taken into account that influenced the development of events around the theory of relativity.

In the nineteenth century ghosts roamed Europe, not only the ghost of communism, but also the ghost of Zionism. In the twentieth century, "ideas took possession of the masses", their confrontation began.

Communism has set itself the goal of building a paradise on Earth for all people on the planet - the elimination of the exploitation of man by man, racial and national inequality, the satisfaction of the material and cultural needs of society on the basis of a universal and equal obligation to work. The philosophical basis of communism was dialectical and historical materialism, based on the achievements of classical science, including physics. The key points of the philosophy of communism are the recognition of the materiality of the world, the primacy of matter and the secondary nature of consciousness, the acceptance of cause and effect relationships, the materialistic development of nature and human civilization, the denial of any religion.

Zionism also set the goal of creating a paradise on Earth, but in one country and only for one people - the Jews. The ideological basis of Zionism is Judaism, in which the main shrine is the "chosen by God" Jewish people. His chosenness of God in relations with other nations should ensure privileged well-being, not only moral, but also material. Judaism, like any religion, is an idealistic teaching that recognizes the primacy of spirit and the secondary nature of matter.

Under the cover of advertising noise, one of the elements of which was Eddington's astronomical observations, the development of the

situation around the theory of relativity and its author was given a new direction. “Until 1919, Einstein, who was then already forty years old, was engaged in ordinary scientific activities in close contact with a number of his - quite, by the way, his worthy colleagues and had equal fame with them. But in 1919 there was an unexpected and unheard-of explosion in Einstein's popularity, which can be learned from any of his life stories.

Einstein's change in status was truly incredible and startling. "This is what the memoirist K. Blumenfeld writes.“ Until 1919, Einstein had no connection with either Zionism or the Zionist way of thinking. In February 1919, our meeting took place, which revolutionized Einstein's attitude towards the Jewish people.

At this time, Felix Rosenblum (now Israel's Minister of Justice Pinchas Rosen, 1956) presented a list of Jewish scholars in whom we wanted to awaken an interest in Zionism. Einstein was among them. Natural scientists have known for many years about the significance of this man, but when we visited him ... there was still no crowd of interviewers, photographers and curious people who besieged him in the future."

(Quotes are taken from the article by Vadim Kozhinov: "N. Agursky's Zionism and International Zionism", "Our Contemporary", No. 6, 1990, p. 152. The latter is cited by the author of an article from the well-known collection "Light Time - Dark Time" (He11e Zeit - Dunkle Zeit. In Memoriof Albert Einstein. Europa Verlag, 1956, p. 74), expressing regret that this collection has not been published in our country. It should be added - it is a pity that there is no translation and publication in Russian of Einstein's book "Mine worldview "(Albert Einstein. Mein Weltbild Zveite Auflage Amsterdam, Quarido Verlag, 1934). These works contain interesting facts from the life of the famous physicist).

From that time on, Einstein came under the tutelage and service of world Zionism, which became one of the reasons for the incredible popularity of his creation. Since then, any criticism of the theory of relativity, in the spirit of Zionist practice, has been declared "anti-Semitism." And the senseless theory of relativity is used to fool the national elites of the goyim, to prepare them for the perception of the irrational and illogical. They are taught that common sense - direct sensible judgment and the very ability to think normally - does not exist, and that science has "proven" this.

The philosophical idealistic doctrine of relativity, the conventions of human knowledge - relativism received a "scientific" justification for the approval of mystical teachings and prejudices. Fertilized with mysticism, the mind can more easily perceive religious dogmas, biblical stories and social deception. The existence of orders, when some acquire villas and yachts, and build temples, synagogues, mosques and temples on the remains, while others drag out a miserable existence for years, cannot take place without interference beyond natural forces. The physical destruction of opponents is to some extent a solution to the problem, de-ideologization is much more effective - there are only sheep left for wool and skins.

The attack on the materialistic worldview met with resistance in our country. In the journal "Pod Znamenem Marksizma" (No. 1–2, 1922) the physicist prof. A.K. Timiryazev publishes an article where he points out that drawing public attention to the theory of relativity is necessary for those "friends of the revolution" who would like to destroy the sciences and restore "... the authority of religion and various currents of idealist philosophy at its service" the main merit of this theory is that it delivers a "fatal blow to materialism!"

Analyzing the physical and philosophical essence of the theory, Timiryazev writes about its inconsistency. He shows that “Einstein gives real meaning to imaginary constructions,” and he sees the reason for this situation in the fact that “questions connected with the theory of relativity concern areas where we, with our technical means, cannot yet solve cases by laboratory experiments. And where the scientist is deprived of his faithful support, his mind can go crazy very easily."

In No. 3 of the same journal, V. I. Lenin published an article "On the Significance of Militant Materialism," in which he defines the main tasks of the journal in strengthening the ideological foundations of our state. He sets the task of rallying the forces of all consistent materialists under the leadership of the Communist Party as one of the primary ones, considering it very important "an alliance with representatives of modern natural science, who are inclined towards materialism and are not afraid to defend and profess it ...". As an example, Lenin notes that "A. Timiryazev's article on Einstein's theory of relativity allows us to hope that the journal will succeed in implementing this second alliance." This alliance is necessary because "without a solid philosophical foundation, no science, no materialism can withstand the struggle against the

onslaught of bourgeois ideas and the restoration of the bourgeois world outlook."

Lenin's testament was not fulfilled. Under the patronage of L. Trotsky, an ardent propagandist of relativism, A. M. Deborin (Ioffe), took the post of editor-in-chief of the journal Pod Znamenem Marksizma, without being a member of the ruling party. The popularization of the theory of relativity began to grow steadily. In a still illiterate country, the years of devastation "... the period 1922-1925. was published brochures and books on the theory of relativity with a total circulation of up to 100 thousand copies. Among the authors of brochures and books, let us name Cassier, Eddington, Born, Harry Schmidt, Lehmann, Auerbach, Moshkovsky, S. Norman; from Russian authors - Semkovsky, E. London, Fredericks, S. Lifshitz, B. Duchesse, Tan-Bogaz, and others. " ("Under the Banner of Marxism", No. 7, 1937, p. 46), and the total number of editions of Einstein's works and about Einstein in subsequent years is more than 1 million 300 thousand copies. ("Science and Technology", No. 9, 1984, p. 29). Not only mass propaganda began to be used, but also other methods of disseminating the theory. Here is what Acad. A.P. Alexandrov. "Soon after the war, it seems, in 1946, I was summoned to the Central Committee of the party and a conversation was started that quantum theory, the theory of relativity — all this is nonsense. Some company, not very clear to me, gathered. Two figures from Moscow State University tried especially hard. But I told them very simply: "The atomic bomb itself demonstrates the kind of transformation of matter and energy that follows from these new theories and from nothing else. Therefore, if we refuse them, then we must also refuse the bomb. Please give up quantum mechanics and make the bomb yourself, however you want " (Izvestia, No. 205, July 23, 1988).

A bold statement, I must say, the future president of the Academy of Sciences knew the strength of himself if he could engage in blackmailing I. V. Stalin and L. P. Beria.

The article by Acad. BM Kedrova, written in 1978, and published after his death in 1988 in the journal "Questions of Philosophy" No. 4 about the history of the creation of this journal. It revives again the assessment of A.K. Timiryazev's activities, which has become widespread since the speech of Acad. AF Ioffe in 1937 ("On the situation on the philosophical front"), when he attacked with political accusations

against A.K. Timiryazev and N.P. Kasterin ("two figures from Moscow State University"), as well as Academician ... VF Mitkevich and member of the editorial board of the magazine "Pod Znamenem Marksizma" A. A. Maksimov: "I affirm that the path of Timiryazev, Mitkevich, Kasterin is the path of anti-Leninist, anti-Stalinist, this is the path of struggle against dialectical materialism." He did not say anything about the essence of the discussion, limiting himself to political persecution, mainly of Timiryazev and Kasterin. In particular, Ioffe said that Kasterin and Timiryazev are "... on Soviet soil, propaganda of the fascist ideas of obscurantists Stark, Lenart, Venelt and others." ("Under the Banner of Marxism", 1937, No. 11-12, p.142).

In the summer of 1947, a broad philosophical discussion took place in Moscow. During its implementation, Kedrov writes, a request arose to recreate a philosophical journal to replace the journal Pod Znamenem Marksizma, which had ceased to exist in 1943. Stalin gave permission to create a new journal with the condition to place the full texts of speeches in its first issue, “... moreover, he strictly forbade making any changes, since, at the direction of J. V. Stalin, the discussion was completely free and everyone was given the opportunity to do everything what he considered or wanted to say". Despite this, Kedrov achieved an agreement to reduce the publication of Timiryazev's text, in which, as he himself writes: “... our Soviet leading physicists - AF Ioffe, VA Fok, SI Vavilov and others "(P. 96).

The MSU archive contains the full text of Timiryazev's speech. Comparing with him published in the journal, it is clear that the criticism of the scientist proceeded from his fundamental convictions as a physicist-materialist and is associated with the specific facts of publications of these persons [24].

As a result, the forces turned out to be unequal, the theory of relativity has now taken the leading position in the ideological basis of physics and philosophy, and its materialism can be judged by the statement of Einstein himself: "No fundamental provisions contradict the introduction of this hypothesis, thanks to which space and time are deprived of the last trace of objective reality" [2, p. 439, Vol. 1]. According to the general philosophical definition, space and time are forms of the existence of matter, and if these forms are deprived of the last trace of objective reality, then the fact of the existence of matter is also deprived of reality. No wonder AK Timiryazev wrote in 1926: “All idealist philosophers

rejoice, proving that this theory has finally and irrevocably refuted materialism" [25, p. 162, T.2].

Dialectical materialism, which is the pinnacle of the development of the human worldview, cannot be refuted just like that, in passing, with a single hoax, albeit a global one. But in modern textbooks and monographs of many authors under the name of dialectical materialism, subjective idealism is presented - a freak, obtained from the crossing of positivism with the theory of relativity. The substitution started by academicians Ioffe, physicist Abram Fedorovich and philosopher Abram Moiseevich and their associates has been brought to its logical conclusion. The substitution illustration is the work "Philosophy and Progress of Physics", M., 1986, authors: editor-in-chief of the journal "Philosophical Sciences" prof. V.S.Gott and Assoc. V.S.Sidorov. In it, in particular, it is stated: "… on the same experimental basis, the initial principles of SRT allow constructing two mutually exclusive, internally consistent and equivalent descriptions in terms of physical meaning" (p. 95). This became possible after, according to the authors, "... the connection between space, time and motion was understood, which was revealed by the special theory of relativity, and which was formulated in general form even earlier in the philosophy of dialectical materialism" (p. 129).

The use of the theory of relativity as a philosophical idea from the very beginning did not attract the approval of the majority of scientists, including those who indirectly created it. Indicative in this respect is the position of H. Lorentz, who acted as a natural scientist when, formulating his transformations, he tried to eliminate the inconsistency between the hypothesis of the electromagnetic ether and Michelson's experiment with the help of mathematical equations and physical assumptions. The scientific world of physicists at that time was convinced of the existence of the ether and that Michelson would determine the absolute speed by his experiment. The negative result of this experiment prompted Lorentz to build a physical model, in which such extravagant assumptions as changes in space and time of moving charges and other material bodies were applied, and others - to treat this model with conciliation. Earlier, a similar assumption was made by J.J. Thomson in relation to the mass of a moving electron.

Einstein's contribution to the creation of the theory of relativity was manifested in the fact that, with his paradoxical postulate $c = const$, he

transferred the difficulties of Lorentz's ethereal model to the field of formal reasoning and thought experiments, where there was no longer any place for any physical assumptions. That was to puzzle over the mystery of the nature of the constancy of the speed of light in the Michelson interferometer, it is better to simply declare: the speed of light is a constant value, without explanation and justification. Then the supposed cause of this phenomenon - the Lorentz transformation - logically becomes its consequence.

Simple and brilliant!

This cheating trick obtained the invulnerability of the theory of relativity for such a long time. Before physicists, it is protected by a philosophical orientation, before philosophers - by technical complexity, and before everyone else - by casuistic confusion and politicking.

Later, Lorenz did not see his offspring in the theory of relativity, so he never claimed co-authorship. In the presentation of Einstein, this theory has ceased even to resemble a physical theory. In it, no longer material bodies in motion, interacting with the ether, changed their forms in space and time, as in Lorentz, but space and time themselves have lost their classical forms. While Lorenz tacitly rejected the theory of relativity, others spoke out openly. The apologists of Machism present these statements as a manifestation of inertia and stupidity. So, N. Gardner wrote: “Many scientists were unable to free themselves from the old, Newtonian way of thinking. They were in many ways reminiscent of the scientists of the distant days of Galileo, who could not bring themselves to admit that Aristotle could be wrong. Michelson himself, whose knowledge of mathematics was limited, did not recognize the theory of relativity, although his great experiment paved the way for the special theory of relativity."

No, this is not sluggishness and stupidity - these words are in fact evidence of Michelson's steadfastness and deep understanding of the essence of the problem.

“Later in 1935,” Gardner continues, “when I was a student at the University of Chicago, Prof. William Macmillan, a well-known scientist. He openly said that the theory of relativity was a sad misunderstanding. We, the modern generation, are too impatient to wait for anything, ”Macmillan wrote in 1927. - In the forty years that have passed since Michelson's attempt to detect the expected motion of the Earth relative to the ether, we have abandoned everything that we had been taught before,

created a postulate, the most meaningless of all that we could only think of, and created a non-Newtonian mechanics consistent with this postulate. The achieved success is an excellent tribute to our mental activity and our wit, but there is no certainty that our common sense ”[26, p. 112].

Giving preference to judgment over experience, contributing to the erosion of the criteria for the truth of our knowledge, both natural science and socio-historical, the debatable hypothesis is used by certain forces in the political struggle, which is why it has not yet suffered the fate of many other hypotheses that have turned out to be scientifically untenable. Its assertion was also facilitated by the fact that, according to A. K. Timiryazev, “the theory of relativity is such an area of physics that not only has significant, but even supposed practical applications” [24, p. 164, T.2].

11. Criticism of the theory of relativity by the aetherists

The theory of relativity is a mirror image of the ether theory, therefore the criticism of the theory of relativity by the proponents of the ether theory is superficial, frivolous. Etherists oppose the incorporeal essence of the theory of relativity (there are waves, but there is no medium, the carrier of waves), therefore some of them call it idealistic, but they are not against all its absurdities. For example, on the pages of the journal "Inventor and Rationalizer" O. Gorozhanin, very wittily and reasonably showed logical contradictions in the theory of relativity. And at the end of the article he writes: "... everything turns out to be in its place, if the original meaning is returned to the Lorentz transformations: v is not the speed in relation to an arbitrarily moving inertial system, but the absolute speed in a stationary and not entrained ether" (No. 8, 1988. , p. 22).

An "excellent" conclusion! As if he does not know about the contradictions of ethereal theories to experiments and observations, or these contradictions are not his decree ?!

A similar meaning and conclusions are contained in the work of A. A. Denisov "Myths of the Theory of Relativity", Vilnius, 1989, with the only difference that it is less clear and witty in presentation than O. Gorozhanin. In an interview with Literaturnaya Gazeta (28.02.90), Deputy of the Supreme Soviet of the USSR A. Denisov complains about troubles with publications like it: “For example, Academician A. Logunov had the same difficulties when he wanted to publish a book, where he also subjected criticized a recognized theory. "

The difficulties of the vice-president of the Academy of Sciences, the rector of Moscow State University, a member of the Central Committee of the CPSU A. Logunov are specific. The publishing house of the university, which is under his jurisdiction, and where he publishes his works, the magazines "Science and Life" with polemical articles by A. Logunov and V. Ginzburg, "Reports of the Academy of Sciences", obliged to publish the works of academicians, as well as the tribune of UNESCO and the department of Moscow State University , with which the academician spoke, expressing his views, is clearly not enough. It is also required that what is published and expressed is perceived accordingly. But after all, Academician A. Logunov's theory, although

"new", is again relativistic, there is little novelty in it, but the flaws are the same as in the "old" one.

Acquaintance with the materials of such discussions, speeches and interviews creates the impression that many authors deliberately or rather unwittingly play the role of decoy ducks. The theory of relativity, after all, is far from the everyday needs of workers. And, having read in the authoritative scientific journal "Uspekhi fizicheskikh nauk" (v.160, issue 4) a review of A. Denisov's "Myths", where, together with justified indications of the author's incompetence, it was said that the theory of relativity "... forms the foundation of modern physics and is of great ideological and practical importance. It lies at the basis of modern physics of elementary particles, atomic and nuclear spectroscopy, atomic energy and other areas of physics and technology, all modern particle accelerators are calculated using SRT formulas. Due to their fundamental importance, the foundations of SRT are included in physics programs not only in higher, but even in secondary school "- after reading this, many will learn or remember the existence of a recognized theory and, not suspecting the irresponsibility and dishonesty of the reviewers, will take the written" at face value ".

Criticism by opposing the ethereal theory of the theory of relativity is a balm for the soul of relativists. The roots of both are the same, the difference is the following. Etherists believe that bodies, for example, an interferometer, and time processes, including those in devices that record time - clocks, moving in the ether and interacting with it, reduce their dimensions in the direction of motion and change the time course according to the Lorentz transformations, therefore the speed light turns out to be constant.

Relativists, on the other hand, believe that the speed of light is a constant quantity, therefore the spatial and temporal quantities change according to the Lorentz transformations.

The effects of changing the size of bodies, time intervals and mass, both in the etherists and in the relativists, are undetected, mystical. It's just that the etherists, figuratively speaking, have a steam locomotive in front of the carriages, while the relativists, on the contrary, have the cars in front of the locomotive. But the path and the destination station are the same.

However, when viewed from the outside, the position of the Aethyrists is more vulnerable. There are a lot of broadcast models and

they are so contradictory that they are not taken seriously, except for their authors. And relativists have no models at all, there is nothing to discuss, they only have a set of terms and equations that are incomprehensible for the "uninitiated". He who does not understand them is stupid, an enemy of science, now this is suggested from school. It is unpleasant to be publicly stupid, everyone is intimidated and silent, from the Maineics to the academicians. A new breed of physicists who “understand” the theory of relativity (in fact, take it for granted) has been developed by long-term selection. Those who do not understand are not physicists, they are "techies", "lyricists" and so on, their opinion does not count. As a result, the etherists are again "in a puddle", and the relativists "on horseback".

12. The theory of relativity is a brake on science

The exposition of the theory of relativity has always been distinguished and is notable for its confusion, ambiguity, clarification of minor details that are not relevant to the essence of the matter. The myth is maintained that the meaning of the theory is not available to mere mortals. All this is necessary for the approval of the opinion about the high scientific character and significance of the theory. Authors striving for this goal go so far as to stop understanding what they write about or lie. Thus, Academician AB Migdal writes in a book from the Scientists to Schoolchild series: “In 1887, the American physicist Albert Michelson measured with colossal accuracy the speed of light along and across the motion of the Earth. Michelson's experiment proved that the speed of light does not depend on the speed of the source in a stationary and moving coordinate system. The principle of relativity turned out to be true for light.

Very strange at first glance. In classical mechanics, the movement speeds add up. If a person walks on carriages along the course of a train at a speed of five kilometers per hour, and the train itself moves at a speed of fifty kilometers per hour, then the speed of a passenger walking relative to the Earth will be fifty-five kilometers per hour. The same, according to the classical law of addition of speed, should be the case with light. But in fact, the speed of light is always the same ”[27, p. 87].

Two comments on this quote.

First, A. Michelson set up his experiments to determine the speed of the Earth's motion relative to the ether, he was looking for the etheric wind, assuming that the measuring system on Earth, an interferometer with a source and a receiver, is not isolated with respect to the external environment, ether. He took into account that in this case Galileo's principle of relativity, which underlies classical mechanics and is valid only for isolated systems, is not applicable. In A. Michelson's experiments, the source and the receiver were motionless relative to each other. These and other experiments and observations on this topic showed that electromagnetic and optical phenomena obey Galileo's principle of relativity. Consequently, the world ether, as a single medium - the carrier of electromagnetic waves, is absent, which is now generally recognized.

Second, from these experiments it follows that the speed of light in inertial systems from a moving and stationary source should be different and should be calculated according to the classical law of addition of speeds.

In modern physics textbooks, mass is defined not as a measure of the amount of matter, matter (the law of conservation of matter), but as a measure of inertia. Inertness, according to relativistics, depends on the frame of reference, the observer, therefore, this is not an objective reality, but a subjective characteristic given to us in sensations. Rejecting the objective existence of matter, the theory of relativity subjectively and idealistically interprets the cognizability of the world. According to both Galileo's principle of relativity and Einstein's principle of relativity, experimental data show that inside an isolated system it is impossible to determine various inertial states, i.e., for any uniform and rectilinear movement within the system, all natural phenomena proceed in the same way. But if in classical physics this implies an admission: this is the real world, while in relativistics: changes are not observed, inside the system you cannot find them by experiments, but they are. Einstein wrote about it this way: “The question of whether the Lorentz contraction is real does not make sense. Contraction is not real, since it does not exist for an observer moving with the body, but it is real, since it can be fundamentally proven by physical means for an observer who does not move with the body”[2, p. 187, Vol. 1]. It follows from this that, being in an inertial system, it makes no sense to talk about the reality of the surrounding world, since observers from the outside, having all kinds of relative speeds, simultaneously determine various contractions or increases. As many observers as there are evidences - this is the pluralism of truth according to relativistics, or according to "new dialectical materialism", consistent with the theory of relativity.

To bring the Soviet education system in line with this philosophy, under the guise of borrowing the overseas education system, in the 60s of the twentieth century, an educational reform was carried out in our country. The teacher Stanislav Khoroshavin in the article "Who and How Destroys School Education?" ("Young Guard", No. 9. 1990, p. 211) writes: “The initiators of the transition to a new content of education were I. K. Kikoin and A. N. Kolmogorov. They declared their readiness to develop new textbooks that would supposedly raise the Soviet school to a new level of the scientific level of the content of these

subjects. And, unfortunately, they did it. "Unfortunately" because, completely ignorant of the school, the laws of pedagogy, the laws of the development of the psyche of children, academicians have created such textbooks of physics and mathematics that for three decades have instilled in millions and millions of students a persistent aversion to physics and mathematics.

Striving for a "high scientific level", IK Kikoin tore physics away from nature, from life, from technology, encrypted it with the dead language of abstractions, and confused it with the jungle of mathematical transformations.

The same fate befell the geometry presented by Kolmogorov.

It is interesting that Kolmogorov's school geometry course is not understood not only by students, but also by academic mathematicians. Academician Pontryagin, in his letter to the Kommunist magazine, spoke with indignation about this school textbook. "

It should be noted that textbooks have become incomprehensible not only for the above reasons. Speaking at the discussion in 1947, A. K. Timiryazev noted: “At present, the prevailing opinion among our 'leading' circles in the field of theoretical physics is the thesis that physics is divided into two areas: old physics (on the basis of which all technology up to the technology of building atomic bombs, inclusive) and new (theory of relativity and quantum mechanics. - *author's note*). The old physics is accessible to the human mind, the new one is inaccessible: you cannot understand it, you can only get used to it! “There is no reason to expect the former close connection between the“ reasonable genius of man” and the “living power of nature”. To achieve the former harmony and understanding, a person needs to change biologically." (S. I. Vavilov. In memory of Karl Marx, M., 1933, p. 215) "[24].

Humanity has not yet had time to biologically change towards understanding the theory of relativity, therefore, the remark of Yu. B. Rumer in the afterword to his book "What is the theory of relativity" (Moscow, 1975), reprinted with Academician L. D. Landau, does not cause a smile. after the death of the academician: “I remember the humorous review that Landau himself gave to this book: “Two crooks persuade the third that for a dime he can understand what the theory of relativity is”. (p. 75).

The authors of modern textbooks on physics for universities, and after them for school, are also probably "joking" when presenting the theory of relativity.

The school textbook gives the concept of the postulate: *“A postulate in physical theory plays the same role as an axiom in mathematics. This is a basic proposition that cannot be logically proven. In physics, a postulate is the result of a generalization of experimental facts."* Let us use this most precise definition of the postulate and look at a typical presentation of the theory, for example, in the textbook for universities "Optics" by GS Landsberg [9]. The first postulate: "According to the principle of relativity, phenomena in all inertial reference frames proceed in the same way" (p. 454).

This is a rigging, since the stated postulate is Galileo's principle of relativity, which really is the result of observations and experiments. According to Einstein's principle of relativity, in frames of reference moving uniformly and rectilinearly relative to the one in which the observer is located, the phenomena proceed differently than in the observer's system: the segments of straight lines contract in the direction of motion, the mass increases, and the time processes slow down. This is confirmed by the Lorentz formulas given in the textbook after the postulates. But it is silent here that predicted changes cannot be detected by experiments.

Further, the second postulate of STO, or *"The principle of constancy of the speed of light, according to which the speed of light in a vacuum does not depend on the movement of sources and receivers and it is a universal constant c"* (p. 454).

This is a lie - the second postulate has no experiments to support it. On the contrary, O. Römer 's observations of the motion of Jupiter's moon Io disprove the postulate. Therefore, neither textbooks nor monographs contain a complete normal description of O. Römer's observations. Also, there is no complete description of the Römer effect and the aberration of D. Bradley's stars.

However, can the description of Römer's observations in textbooks and monographs be a refutation of the postulate of the constancy of the speed of light, if the authors of the textbooks themselves do not understand the essence of these observations? So, in the quoted "Optics" it is written: *“Astronomical observations over the satellites of Jupiter show that the average time interval between two successive eclipses of*

any particular moon of Jupiter depends on how far the Earth and Jupiter are from each other during the observation” (p. 418).

In fact, the observed average time interval between two successive eclipses of any particular satellite of Jupiter depends on the speed and direction of motion of the Earth relative to Jupiter along the Earth-Jupiter straight line, and not on the distance between them at the time of observation.

The theory of relativity, like any manifestation of philosophical idealism, has a particularly detrimental effect on the immature consciousness of adolescence, since its ideas cannot be understood, cannot be correlated, harmonized, put into a system with previously obtained knowledge, they can only be taken on faith and remembered. Therefore, teaching theory in schools and universities leads to the education of an inferiority complex, when, having made every effort, a person does not understand anything and considers his abilities as the reason for this, or double-dealing, when, without understanding, it is stated aloud that everything is clear. And in all cases, ideological omnivorousness, eclecticism and lack of conviction are brought up.

/ In January 1992, a seminar of physics teachers from the Leninsky district of Novosibirsk was held, organized by the methodologist of the RONO A. I. Leontovich. There were about thirty people, including three teachers from the pedagogical institute, the author's work "Theory of relativity - the mystification of the century" was discussed. In her closing remarks, one of the teachers said: “I have been working for a long time. But for the last ten years, as soon as the study of the section of the theory of relativity began, my partner fell ill, and I had to teach her classes. And all these years I did not understand what I was repeating to my students from the textbook, and I blamed my abilities as the reason. Now I know that I am a normal person. Thank you, you have given me back my own self-respect ”/.

As a result, as Khoroshavin writes: "... generations of people have been brought up who are willing to believe in 'little green men', and in evil spirits that have settled in the apartment, and in A. Chumak, and in God, and in the devil ..."

At the present time, as a result of the development of science and technology, Einstein's theory has found itself in the center of some areas of physics.

At the XIII International Conference on High Energy Accelerators (Novosibirsk, August 7–11, 1986), in a survey report on the state of work and prospects in high energy physics, Corresponding Member of the Russian Academy of Sciences The USSR Academy of Sciences L. Okun noted: “... the most active young theorists have gone to superstrings, they work mainly in 2, 10, 26, ... 506 dimensions and avoid trivial, “everyday” problems of the four-dimensional world, in which phenomenologists, experimenters and accelerators are doomed to work (superstrings, in short, are a new model of elementary particles, based on an attempt to unite quantum theory and general relativity with access to multidimensional space. — *approx. editor of the newspaper "Science in Siberia") "* [28].

The basis of superstring theory, as well as the basis of the “trivial” problems of the four-dimensional world, is the general theory of relativity, according to L. Brillouin, “a brilliant example of a magnificent mathematical theory built on the sand and leading to an ever greater heap of mathematics in cosmology (a typical example of science fiction) "[16, p. 28]. Science fiction is at the heart of the section of modern physics, on the development of which huge funds are spent. A very urgent problem, according to the same report by L. Okun, is "the cosmic scenario of the first three picoseconds, which determined the entire further development of the Universe" after the Big Bang.

The speaker also expressed regret at the lack of proper accelerators required to search for the "Ultimate Physical Truth". These are the goals and tasks facing fundamental physics now.

The theory of relativity is a brake on world science. During its existence, despite the invention of quantum generators, which happened despite the prevailing at that time statements of the impossibility of their creation, science did not advance in understanding the nature of electromagnetic radiation. The method of cognition formed by relativism, in which mathematical notation and graphic symbols are taken for real objects and studied, leads to a dead end. The misconception that there is no rest mass of photons (γ-quanta) emitted in the process of nuclear transformations and carrying away part of the mass makes numerous and expensive experiments to search for hypothetical neutrinos be carried out. The methodological concept of creating theories based on arbitrary postulates and propositions breeds empty theories and distracts intellectual forces from solving real problems. Understanding, the

discovery of new sides of the phenomenon usually occurs when working out some kind of model concepts. Now it is impossible to come up with a single model of light that would be consistent with the postulate $c = const$. Any attempts to circumvent the canons of the theory of relativity are equated, if not with sheer madness, then with the invention of a perpetual motion machine, arousing the wrath of academic Olympus and anathema of the apostates.

The performance in the theater of the absurd - in the education system, accompanied by Strum's refrain, a character from V. Grossman's novel “Life and Fate”, pronounced “in an arrogant teacher’s voice”: “… physics without Einstein is the physics of monkeys”, continues.

13. Fragments of history about theory

The above astronomical observations of O. Römer and D. Bradley, as well as laboratory experiments, convincingly confirm the subordination of the motion of light to the law of addition of velocities. It is unclear whether Einstein knew about them at the time of his theory invention. But it is reliably known that other physicists, including those who write modern textbooks and monographs with an exposition of the theory of relativity, know, as they write about them, albeit in a peculiar interpretation. Does this cause confusion, do the authors of textbooks and monographs deliberately mislead readers, or do they not understand what they are writing about?

But not everything is so hopeless, there are those who understand.

* * *

13.1. Address to Academician L. N. Koshkin

In 1987, I turned to Academician Lev Nikolaevich Koshkin with a request to give a recommendation for publication in the journal "Reports of the USSR Academy of Sciences", my article "Essay on the theory of relativity." This journal publishes the works of members of the Academy of Sciences, and other authors on the personal recommendation of academicians. The reason for the appeal was LN Koshkin's excellent speech on television under the heading "Meetings with Interesting People", where, in particular, he expressed concern about the poor philosophical preparedness of young specialists. Here's what he answered:

“Vladimir Ilyich, I have read your essay on the theory of relativity. In the essay, you substantiated the inconsistency of Einstein's theory of relativity as a physical science and its idealistic philosophical orientation. But due to the fact that the issues you are considering are not the subject of our specialty, I cannot help you with your request.

I am returning the essay and article by Comrade Cheshev.”

Respectfully yours, General Director of MNTK ROTOR,
academician L. N. Koshkin ".

01/11/88

13.2. Edition of "Essay on the Theory of Relativity"

As soon as it was allowed to publish works at the expense of the authors, the first scientific publication of the Novosibirsk book publishing house in 1988, after a long break, according to its editor-in-chief A.I. Plitchenko, following the publication of the book by Yu.V. Kondratyuk in 1929. “The Conquest Interplanetary Spaces ”,“ Sketch ”was released. For the Publishing House, as a recommendation for the publication of the brochure, reviews written by researchers were presented.

REVIEW

AT WORK V. I. SEKERIN

"ESSAY ON THE THEORY OF RELATIVITY"

The work of V.I. Sekerin "Essay on the theory of relativity", about 2.75 author's pages, is devoted to criticism of the basic postulates of the theory of relativity of A. Einstein. It consistently sets out well-known and little-known to the general public, experimental facts that fundamentally contradict the principle of constancy of the speed of light. Specifically, these are: 1. Römer's experiments on observing eclipses of Jupiter's satellites. 2. Annual aberrations of stars caused by the addition of the speed of light and the speed of the Earth in its orbit. 3. Ritz's construction for binary stars, which, brought by the author to a direct calculation, unambiguously describes the course of brightness and their spectral properties for a wide class of binaries. 4. Experiments on the radar of Venus, the analysis of which was carried out by the American astronomer B. Wallace in 1961-1966, and in which the Crimean Astrophysical Observatory of the Academy of Sciences also took part.

All these experiments, without any doubt, contradict the theory of relativity. Among them, the most interesting are the annual stellar aberration and the radar of Venus. If, from the point of view of the practice of science, corrections for aberration were introduced and will always be introduced by any astronomer measuring the positions of the stars, while not at all worrying about the discomfort of the Einsteinians (practice requires accuracy, not worship of authorities), then in the case of radar of Venus, once again which confirmed that the speed of the source (relative to the observer on Earth)

and the speed of the electromagnetic wave emitted by it are added (subtracted), ignoring this knowledge promises big trouble for scientists, astronauts and, especially, for the military in the near future.

Further, V.I.Sekerin has a set of examples demonstrating new possibilities in explaining various physical phenomena, without resorting to the postulate of the constancy of the speed of light. It is not all successful here in a purely didactic sense. There are rhetorically vulnerable spots, both in the author of the essay and in potential opponents.

The last, philosophical part of the work requires professional discussion, and we omit it. And, nevertheless, it is necessary to note the following, It has long been accepted in every self-respecting science that if in the constructed theory, system of evidence or experimental foundations, at least one fact appears that contradicts the previous laws, then the theory, system of evidence, the experimental foundations are rejected or radically revised. And so, despite a wide range of experiments, where the constancy of the speed of light does not take place, Einstein's physics continues to live. Only the deeply rooted cult of Einstein's personality can explain this situation in physics.

As always, the cult creates a situation in which zones outside of criticism appear. In modern physics, any confirmation of the violation of the principle of constancy of the speed of light has become such a zone of silence. We are sure that a reasonable physicist perfectly feels the falsity in the presentation of his subject, but a cult with all the attributes of suppression of dissent and a repressive apparatus and methods - a doubting physicist (this is enough) immediately declares not a physicist with all the ensuing consequences for a scientist's career ... An active position in the criticism of the cult threatened quite recently with the announcement of the obstinate physicist mentally ill.

Cults must be broken. Any. Including the cult of Einstein. It is this circumstance that gives rise to the need to publish the polemical materials of V.I.Sekerin, designed to make a breakthrough into one of the closed zones of world science.

Serbulenko Mikhail Georgievich, candidate of physical and mathematical sciences, senior researcher Institute of Geology and Geophysics, Siberian Branch of the USSR Academy of Sciences.

May 11, 1988

REVIEW

to the brochure V. I. Sekerin "Essay on the theory of relativity"

The essay offered to readers is devoted to a topical issue - the

experimental substantiation of the second postulate of the special theory of relativity - about the constancy of the speed of light in all inertial reference frames. The author analyzes in detail the generally accepted experiments, and also, which is especially interesting, draws on the classical experiments of Bradley and Römer, using Newtonian concepts of space and time and Galilean transformations to add velocities.

The brochure contains the author's original calculations regarding the variable brightness of binary stars. The problem was solved in classical terms, and the calculation results coincided with the known experimental dependences.

VI Sekerin makes a well-founded excursion into the history of the issue and examines the philosophical aspects of the problem. The essay is written in a simple and clear language, the author does not use a complex mathematical apparatus. The brochure will be interesting and useful for students of physical, mathematical and technical specialties of universities, as well as for everyone interested in the special theory of relativity. Apparently, it is advisable for the first time to publish "Essay on the special theory of relativity" in a small print run of 5-10 thousand copies, and the issue of a mass publication to decide later.

Senior Lecturer of the Department of General Physics, Novosibirsk State Pedagogical Institute, Candidate of Physical and Mathematical Sciences V.G. Zhdanov

May 4, 1988

13.3 Communication with the President of the USSR Academy of Sciences

At the beginning of 1990, NSU professor Yu.A. Voronin told me that the President of the USSR Academy of Sciences G.I. publication of the brochure.

Giving the materials, I expressed the hope that after getting acquainted, the teaching of the theory of relativity at school will be stopped.

Six months later, Voronin told me that, on Marchuk's instructions, his assistant Romanov looked through the archive of the Academy and did not find in it a decree prohibiting criticism of the theory of relativity. It should be noted that I did not apply with such a request, but I considered this information as approval of my actions.

In June 1991, without waiting for any results, he wrote a letter to the President of the Academy of Sciences of the USSR, Academician G.I. Marchuk.

“Dear Guriy Ivanovich!

A year and a half ago, Yuri Aleksandrovich Voronin, at your request, took from me the brochure "Essay on the Theory of Relativity" and reviews about it, written by Ph.D. Serbulen-ko M.G. and Ph.D. Zhdanov V.G., which were necessary for the Novo-Siberian Book Publishing House for the publication of "Sketch".

I was hoping that your interest would lead to practical results. The first and foremost of them is the termination of teaching the theory of relativity in secondary schools, where, as is known, the foundation of all subsequent knowledge is laid, and where there is no place for debatable, all the more, deliberately false theories and positions.

I am sending you the supplemented brochure “Theory of Relativity - the mystification of the century”, republished at my own expense, and again I hope that your competence will allow, and your post will oblige you to make reasoned and responsible decisions.

V. Sekerin ".

There was no reaction to this letter either. Although, in several International Leningrad conferences that took place in subsequent years, at which the theory of relativity was sharply criticized, the list of organizers included the Academy of Sciences of the USSR, later the Russian Academy of Sciences, and its members were among the participants. But that's all.

In the summer of 1997, during a break in the ceremonial meeting dedicated to the fortieth anniversary of the Siberian Branch of the Russian Academy of Sciences, I reminded Marchuk about the brochure and said: “Guriy Ivanovich, the urgency of the problem has not disappeared, is it possible to speak at your institute at a seminar, discuss the problem and intensify its solution ? "

- But we are not experts in this area, so if you have mathematical problems, then please.

- How - not experts, you are the author of a book on the calculations of nuclear reactors!

- And when calculating nuclear reactors, the theory of relativity is not needed at all. I advise you to contact physicists.

This is a sensible advice, but for almost forty years I have constantly addressed and communicated with physicists on this problem, including very titled ones. Nobody essentially objected, the majority in private conversations agree that the problem needs to be solved, but do not speak publicly.

Another moment in this conversation surprised. The calculation of nuclear reactors is in principle similar to the calculation of nuclear bombs. And if in these calculations the theory of relativity is not needed, then what about the statement of the previous president of the USSR Academy of Sciences A.P. Aleksandrov that without the theory of relativity it was impossible to create a nuclear bomb.

13.4. Communication with the Chairman of the SB RAS

In 1992, a meeting of the Presidium of the Siberian Branch of the Russian Academy of Sciences was held, at which the activities of the Design and Technological Institute of Single Crystals were examined. One of the noted disadvantages of our work was the lack of fundamental research. I had to speak and say that, firstly, our institute, according to its status, is basically obliged to bring the developments of academic institutes to technology; and secondly, being a participant in several discussions about "fundamental" research, I never heard a clear definition of "fundamental". If anyone present is ready to give this definition, then I will be grateful.

After the end of the meeting, I approached the Chairman of the SB RAS, VA Koptyug, he chaired the meeting, and said: “In my spare time I am engaged in a topic that may fit the definition of fundamental, but it is not in the profile of the institute. I would like to know your opinion. " I gave him my brochure "Theory of Relativity - the mystification of the century" and the text of the "Appeal" of the participants of the 2nd International Conference "Problems of Space and Time in Natural Science" to scientists and educators, adopted on 20.09.1991.

In the "Address" scientists from Russia, the USA, Germany, Great Britain, Italy and other countries stated that the theory of relativity slows down the development of science and has a detrimental effect on the moral state of the scientific community. Therefore, it was proposed to abandon the teaching of this theory at school.

Valentin Afanasyevich read the "Appeal", skimmed through the brochure and said:

- I am not an expert in this area, I cannot judge.

- Why teach schoolchildren what you, an academician, cannot judge ?!

You and I were lucky, we did not teach this theory at school, and at the institute you probably did not need it either. But you know that in Akademgorodok from time to time there are discussions about the theory of relativity, and if the question arose about the legality of teaching it at school, then, I think, it will not be difficult for you to master what is taught to schoolchildren and deal with the arguments, set out in the brochure. Two weeks later they met again, and at my suggestion it was decided that the brochure would be submitted for review to Academician of the Russian Academy of Sciences LM Barkov and Corresponding Member. RAS Rautianu S. G. The brochure consists of several parts. Reviews of the first twenty pages, where experiments are presented that refute the postulate of the constancy of the speed of light, should be an aid in the search for truth.

Reviews were received only thanks to the persistence of V.A.Koptyug .. almost a year later. The first review from Rautian S.G.

V. A. Koptyugu

On the essay of V.I.Sekerin

"The theory of relativity - the mystification of the century"

V. I. Sekerin's essay contains statements and considerations of three kinds:

1. Considerations of a physical nature, at least with a claim to such.

2. Philosophical and historical-philosophical considerations.

3. Frankly journalistic statements.

The title of the essay, chosen by the author, testifies to the fact that for him the journalistic side is more important than the scientific, indeed, according to the dictionary of S. I. Ozhegov (22nd ed., 1990), the hoax is “Deliberate deception, misleading.” VI Dal gives a different interpretation: "comic deception or keeping a person in a funny and long-term mistake" (1881).

For 110 years the meaning of the word has changed and, one must think, V.I.Sekerin had in mind its modern meaning. Therefore, we can talk not only about the journalistic, but also about the offensive orientation of the

essay. A scientist comes to science for the sake of obtaining Truth, and not for the sake of deliberate deception. To raise the charge of deliberate deception on people who enjoy universal respect both scientifically and in human terms is to insult them, insult science and undeservedly insult them.

The feeling of disgust that begins with the title does not dissipate, but is reinforced by the text (pp. 3, 5, 33–54). This is all the more unpleasant for me because at the beginning of our acquaintance with V.I.Sekerin, more than two years ago, I had a different opinion of him.

On the scientific side of the matter. I do not consider it necessary to analyze the experimental and theoretical results that substantiate the theory of relativity. Such work has been done by qualified physicists and is described in many books and textbooks at various levels (deeply scientific, popular, etc.). I consider VI Sekerin's attempt to refute the theory of relativity untenable. This opinion of mine is most vividly illustrated on pages 28–32 of the essay, which discusses the dependence of mass on speed and the relationship between mass and energy. For example, all criticism of the mentioned famous ratio is concentrated in the phrase: "And the determination of the internal binding energy of nuclei through the mass defect using the formula for the equivalence of mass and energy is nothing more than idle mathematical exercises" (p. 32). The barefacedness of this criticism is obvious. It is all the more amusing to read the phrase that immediately follows the one quoted above: “The above analysis shows that the postulates underlying the theory of relativity contradict the experimental data” (p. 32). The price of "given analysis" is visible from three previous phrases.

/ ° R V / / S.G. Rautian 

Long before these events I had a conversation with Rautian S.G. on this topic.

In the fall of 1977, acquired the fifth edition of the textbook "Optics" by GS Landsberg. I saw a familiar name among the editorial staff. I called on the phone and said that there was an error in the published textbook. We met.

- The presentation of observations over binary stars is erroneous. The deviations from Kepler's laws in the motion of binary stars not observed by astronomers are explained not by the fact that the postulate of the constancy of the speed of light is correct, as it is commonly believed, after de Sitter, but by the fact that these deviations are so small that with our technical capabilities it is impossible to see them. To observe them, the

resolution of telescopes must be increased by about an order of magnitude.

Sergei Glebovich listened to all this, checked the formulas and numbers and remarked melancholy: "Do not write refutations about this !?"

My objection: “Do not deceive the students further,” hung in the air.

After that, in the response, instead of an apology for many years of lying and deceiving students about de Sitter's reasoning, and for an incomplete presentation in textbooks of the observations of O. Römer and D. Bradley, analysis and conclusions from them, a passage with a claim: “A scientist comes to science for the sake of obtaining Truth, and not for the sake of deliberate deception. To raise the charge of deliberate deception on people who enjoy universal respect both scientifically and humanly is to insult them, insult science, and undeservedly insult them. "

But in essence: "I consider VI Sekerin's attempt to refute the theory of relativity untenable."

Not much! Where is the sentence that it's time to stop "comic cheating or keeping a person in a funny and long-term mistake ”?

Two months later, a response was received from LM Barkov, who at that time held the post of chairman of the Novosibirsk Physical Society, two years before that my brochure was given to him and the request to speak at a meeting of the society, refused.

Brief review
on pages 6–20 of V. I. Sekerin's brochure

At the end of the 20th century, only a person who is completely unfamiliar with the state of modern science can talk about the classical addition of speeds. For example, atomic and nuclear physics, physics of elementary particles, laser physics, modern technology for measuring distances and velocities in space are unthinkable without Einstein's special theory of relativity.

From the analysis of signals from space objects, including those discovered in recent decades, it follows that, with monstrous accuracy, the speed of light does not depend on either the frequency of electromagnetic radiation or the speed of the radiation source. One can only regret the author of the brochure for not understanding de Sitter's explanation, with which all skeptics agreed at the beginning of the century. Let's take a simple and

intuitive one; an example from particle physics, demonstrating the independence of the photon speed from the speed of the radiation source. An experimenter who registers the transit time of a photon from the decay of a neutral pion sees in direct measurement that a photon emitted in the direction of the pion's motion and in the opposite direction has exactly the same velocities. Another example. Special experiments to search for hypothetical particles "tachyons" - particles moving at a speed greater than the speed of light, gave a negative result. No such particles have been found in nature.

The text presented in the brochure and devoted to the interpretation of experiments concerning the measurement of the speed of light was written at a level so low and unscientific that its criticism seems to be completely meaningless. True, there is a silver lining. The brochure can be recommended as a test for incompetence. If the reader says that there is “something” in this brochure, then he does not know physics.

Academician L. M. Barkov
02/03/93

Instead of counterarguments on the text of the brochure, the academician praised the theory of relativity. *“At the end of the 20th century, only a person who is completely unfamiliar with the state of modern science can talk about the classical addition of speeds. For example, atomic and nuclear physics, elementary particle physics, laser physics, modern technology for measuring distances and velocities in space are inconceivable without Einstein's special theory of relativity."*

Considering what was stated on the first 20 pages of the brochure under review, it can be safely asserted that in the twentieth century the role of the theory of relativity in the development of science and technology is the role of a fly or a gadfly in agricultural work.

For a heretic who encroached on holy things, L.M.Barkov wrote: *“One can only regret the author of the pamphlet that he did not understand de Sitter's explanation, with which all skeptics agreed at the beginning of the century.”*

For skeptics who have understood or accepted de Sitter's explanation, a very remarkable case is pertinent.

Late evening in August 1964. We, the then employees of the Institute of Nuclear Physics: head. In the theoretical department, Professor Viktor Mikhailovich Galitsky, his graduate student Volodya Yakimets and I, a laboratory assistant in the experimental department, lie on the shore of the

Ob Sea by a burning fire, inhale the overheated air of a pine forest and observe how, against the background of bright stars, the third stage of the rocket launches another Soviet satellite into orbit. The conversation turns to the themes of the universe. Yakimets mentions something about the beauty of the theory of relativity, I sharply object: "This theory is a bluff, its second postulate has not been confirmed by any experience or observation." Viktor Mikhailovich's face is more than amazed. An aborigine who has just caught a quick fish and fed it with a wonderful (in his opinion) fish soup, suddenly says such things.

“And what about de Sitter’s evidence for the motion of binary stars?”

- The existing deviation in the motion of binary stars in orbits from that calculated according to Kepler's laws is very small. And it depends not only on the distance to the star, as is commonly believed, but also on the speed of the star in its orbit and is proportional to the ratio of the speed of the star in its orbit to the speed of light squared.

Viktor Mikhailovich thinks about it. Silence. The fire dies out.

- Yes, you are right, indeed the deviation is equal to this value with a small coefficient.

Now it's my turn to be surprised. I did not say anything about the coefficient, or about the fact that I spent three months on this calculation, however, as a student. And here in fifteen minutes, in the mind!

We discussed the resolution of the telescopes and agreed that the amount of deflection is impossible to detect with modern equipment.

Upon returning to college, I tried to continue our conversation, but was coldly rejected. And although in the future we drank more than one bucket of fish soup together, we never returned to this topic.

About "Search for hypothetical particles of" tachyons" and others like them.

Particles moving faster than light cannot, in principle, be detected by relativists.

It is known that any speed is not measured, but calculated after measuring the distance traveled and time. For particles that move faster than light, relativists in the formula for calculating the speed are multiplied by the Lorentz coefficient, so their calculated particle speed is always less than the speed of light. (see section 6.1).

Final phrase of the review: *“True, there is a silver lining. The brochure can be recommended as a test for incompetence. If the reader says that there is “something” in this brochure, then he does not know physics, ”* - a stone in VA Koptyug's garden for his persistence.

After receiving the reviews, we had another meeting, at which Koptyug said: “You are right, but there is nothing more I can do. Write, we will help you publish, perhaps a preprint."

13.5. Discussion in the newspaper "Science in Siberia"

In the fall of 1996, I brought the article “Olaf Römer against Albert Einstein” to the editor of the Nauka v Sibiri newspaper and, in response to the editor's objection, said that Valentin Afanasyevich had promised me assistance in publishing.

After the newspaper came out with the article, he called the editor and expressed his dissatisfaction with the reductions made, to which he received the answer: "But we have kept the main thing!"

As a result of editing, the main paragraph in the article became the last paragraph: *“All these well-known facts are ignored in the presentation of the theory of relativity, that is, there is a deliberate deception of schoolchildren and students. It's time to include in the textbooks a complete and truthful description of Römer's observations, which, by the way, can always be repeated in the school astronomy circle. "*

This article in the printed organ of the Academy of Sciences could not be overlooked, there were responses, both "for" and "against". The editor gave me copies of them and promised to post two alongside opposing opinions to increase interest. Here is one of them.

WHERE IS ALL THE DEVILRY

The excellent article by Vladimir Ilyich Sekerin "Olaf Roemer against Albert Einstein" ("Science in Siberia", 1996, No. 47, p. 7) is simple and clear, against the obvious absurdities in the theory of relativity (STO). It is difficult for it to argue, I think, even for relativists. The logic of THAT, its argumentation is, of course, a perverted form of thinking. The inclusion of the theory of relativity in the school curriculum is tantamount to educating the younger generation on the thinking of the inhabitants of an insane asylum. On the same page "Science in Siberia" there is an article by prof. R Boretsky "Academics and every devilry", which expresses the concern of scientists about the dominance of mysticism and occultism in society. Unfortunately, the professor does not see the real reasons for these phenomena.

V.I.Sekerin convincingly shows the absurdities of STO, precisely those

that led to the creation of a relativistic worldview. Among the many features of the relativistic worldview, I will only mention three. It denies common sense, completely rejects doubts about the truth of THAT, and created an imaginary world. All modern physics of the micro and macroworld is built on this worldview. The highest achievement of this physics is an attempt to create a unified theory of the world, thereby opening it to people, for example, a four-dimensional curved-closed space-time. Until this theory is created, the real world around us is not legitimate, as they like to say now. That is, you and I, readers, live outside the law, and all perversions are allowed. On the other hand, truth criteria are lost, common sense cannot be guided. And the man lost faith in his mind. The closer a person is to science, to theoretical physics, the less he believes his reason. As one theologian put it: “Small science separates man from religion, big science — I mean relativistic — brings people closer.” It was the theory of relativity that led modern society to superstition and occultism. For example, such a well-known scientist as ID Novikov in his scientific work "Analysis of the time machine", ZhETF, 1989, vol. 95, issue 3, pp. 769–776, reports that he has developed the theoretical foundations of a time machine. So soon a mechanized academic fortune teller will compete with non-academic fortune tellers.

It is hard to imagine that with such an unprecedented penetration into the depths of space, into the depths of the Earth, into the depths of time of the past (geology and archeology), into the depths of consciousness (psychology), man and society, when studying STO, forget all knowledge about nature and are guided by fiction about the world ... Isn't that crazy ?! And this madness is due to modern science. It superimposes the fictional on the real, and the real is interpreted through the fictional. To the greatest extent of all sciences, modern physics is affected by the relativistic worldview, like a cancerous tumor. It has become a rule of good manners for scientists to express their loyalty (tolerance, as they now like to say in a learned way) to religion, astrology and other superstitions. For many, physics and superstition have become related concepts. Works are already being written: Fridtjof Kapra “The Tao of Physics. Investigation of parallels between modern physics and the mysticism of the East ”, St. Petersburg, Oris, 1994, - 303 p.

A new dissident physics is now developing in all countries. This physics, unlike the official one, does not have a modern technical base, therefore it is forced to limit itself to a logical analysis of our knowledge of nature. Nevertheless, such results have been obtained that make it possible to completely abandon the theory of relativity and consider all natural phenomena on a neoclassical basis.

I join VI Sekerin's call to protect the school from the theory of relativity.

Chief Researcher, Doctor of Physical and Mathematical Sciences I. I. Smulsky

12.24.96. Institute of the Cryosphere of the Earth, 625000, Tyumen, PO Box 1230.

But the sudden death of V.A.Koptyug changed the situation. In the issue of the newspaper with a portrait of the deceased in a mourning frame and an obituary, two reviews were placed on the penultimate page, contrary to the editor's promise, both were negative.

The editors could not find a more suitable material for the newspaper in the mournful days for the Siberian Branch of the RAS.

The first article by A. Shalagin, Corresponding Member of the RAS: "How V. Sekerin cut A. Einstein", ("Science in Siberia" No. 1, 1997). If we exclude emotions and maxims, as well as humor and satire from the text, then the problem is brief.

“I don’t presume to judge whether V. Sekerin himself invented this or used unsuccessful books, but the definition of inertial systems already given by him and the interpretation of the principle of relativity (that is, the basics from which both classical mechanics and the theory of relativity begin) are at odds with the generally accepted and essentially not scientific. According to V. Sekerin: "An inertial system is a system that moves uniformly and rectilinearly" (sorry, about what ?!). Scientifically, an inertial reference frame is a system in which the free movement of bodies that are not under the influence of external forces occurs at a constant speed (uniformly and rectilinearly). The principle of relativity according to V. Sekerin: "All processes of nature proceed in the same way in any inertial reference frame" ... V. Sekerin preferred to blame the theory of relativity for the absurdity that arose after this, and not himself. I will give an example of a strictly scientific formulation of the principle of relativity that does not allow for a free interpretation (L. Landau and E. Lifshits. "Field Theory", 1973): "... all laws of nature are the same in all inertial reference frames. In other words, the equations expressing the laws of nature are invariant with respect to transformations of coordinates and time from one inertial system to another. This means that the equation describing a certain law of nature, being expressed in terms of coordinates and time in different inertial reference frames, has the same form." Such an understanding of the principle of relativity existed before the theory of relativity, but it was perceived without changes. It is quite obvious that the principle of relativity does not assert the immutability of either time, or the size and mass of the body, for they are not

"laws of nature", that is, they are not "equations."

Let's interrupt the story. *"According to V. Sekerin:" An inertial system is a system that moves uniformly and rectilinearly "(sorry, about what ?!)".*

The answer, omitted for brevity in the newspaper article, is unambiguous: "relative to another inertial system."

The definition of the inertial system, given by A. Shalagin, as strictly scientific: *"Scientifically, an inertial frame of reference is a system in which the free movement of bodies that are not under the influence of external forces occurs at a constant speed (uniformly and rectilinearly)"* - does not fundamentally differ from the widespread and quoted by me.

The first definition of an inertial system is given, figuratively speaking, "from the outside", and the second - "from the inside." Both are true, they complement each other, and it is not legitimate to give preference to any of them as "strictly scientific". These discrepancies are not worth further discussion.

But with *"Strictly scientific formulation of the principle of relativity: ... all laws of nature are the same in all inertial reference frames"* — you cannot agree.

The laws of nature and natural phenomena are far from equivalent concepts. In nature there are phenomena, processes, laws of nature and their mathematical description, equations are the fruit of the activities of scientists, scientific workers. Therefore, the laws of nature and equations can be correct, adequately describe, reflect natural phenomena, or they can be false. In the modern scientific community, the vicious methodology of cognition is being strengthened, according to which, instead of objects, processes of nature, graphic symbols, mathematical equations, and laws of nature are often studied as equivalent to them. Now, if, together with the verbal formulation of any law of nature, there is its mathematical description, then, regardless of any considerations of its derivation, for example, Lorentz transformations, this is no longer delusional fabrications, but the ultimate truth. A vivid example of this methodology is the replacement of A. Shalagin, together with L. Landau and E. Lifshitz, of natural phenomena by "laws of nature." therefore *"Completely unscientific definition that allows a free interpretation"*, principle of relativity, taken by me from a school textbook, more scientifically than what A. Shalagin cites.

And the statement is completely beyond the bounds of sanity: *“It is quite obvious that the principle of relativity does not affirm the invariability of neither time, nor the size and mass of the body, because they are not" laws of nature ", that is, they are not" equations."*

Here the supremacy, the priority of the invented "laws of nature" and "equations" over nature itself is declared. Since the dimensions of bodies, mass and the passage of time are not "*Laws of nature*", i.e, "*Equations*", then they, according to A. Shalagin, can change!

Galileo's principle of relativity, the result of experiments and observations, asserts the invariability of the flow of time, size and mass of bodies, regardless of the speed of the system: "all processes of nature proceed identically in any inertial frame of reference." And according to the theory of relativity in inertial systems moving relative to the observer, a change in the flow of time, size and mass of bodies - leads to changes in the processes of nature in these systems. Therefore, A. Shalagin, in order to disguise, hide obvious contradictions in the formulation of Einstein's principle of relativity, has to change the "processes of nature" to "laws of nature."

“Now about Römer's experiment. V. Sekerin tries to create the impression among the reader that supporters of the theory of relativity deliberately avoid discussing it, since this experiment, according to V. Sekerin, unequivocally and irrevocably puts an end to the theory of relativity ".

Observations, experiments of O. Römer, carried out more than two hundred years before the invention of the theory of relativity, have not yet put an end to it, probably because for the creator of the theory and his followers the essence of these observations remained unknown, or turned out to be difficult to understand.

“Alas, we will have to disappoint the“ overthrower ”and those who managed to believe him. I, like V. Sekerin, also did not meet discussions of Römer's experiment in connection with the substantiation of relativistic mechanics and, frankly, would be surprised if I did, but for a different reason than V. Sekerin. What's the matter? It’s just that there is no subject for discussion. Indeed, the change in the periods of rotation of Jupiter's satellites when observed from Earth is due to the Doppler effect, only this effect must be understood correctly, scientifically. According to the classical theory of Maxwell (I want to hope that V. Sekerin has not yet formed claims to Maxwell) ... " I have no complaints about the classical

theory of J. Maxwell. But J. Maxwell, if he were alive, would have big claims to relativists (see Appendix 1). "… The essence of the Doppler effect is that the frequency of the radiation perceived by the receiver changes depending on the value of the projection of the relative velocity of the receiver and the source that connects them. The frequencies of all periodic movements, information about which is carried by this radiation, also change in the same proportion.

The Doppler effect, which, by the way, has nothing to do with electromagnetic radiation, "A. Shalagin and K^0 "look like "law of nature", in my understanding, "Scientifically". But even in this sense, not everything is "legal". If we accept the presence of the Doppler effect, then we must accept that the movement of light is the propagation of waves in any medium, only in the medium there is the Doppler effect, and then these light waves will have not only different frequencies, but also *different speeds* relative to the emitter or receiver depending on the experimental conditions.

Here is the Römer effect (see section 4.2), and it should be considered as a multifaceted phenomenon of nature as a whole, without exceptions. In it, the observed *change in frequency* of periodic structures of radiation, a change in its kinetic energy, are constituent parts of *changes in motion* of periodic structures of radiation, and a change in motion is *a change in the speed of radiation (light)*.

However, a complete consideration of the Römer effect contradicts the postulate of the theory of relativity $c = const$, therefore this part of the effect is a change in the speed of light, A. Shalagin does not know (or pretends not to know), but only indicates a change in frequency.

The second article is no less interesting: "A reliable recipe for critics". Authors: Senior Research Fellow. E. Vasiliev and chief researcher S. Brandt. Institute of the Earth's Crust SB RAS, Irkutsk. In this article, too, a lot of space is given to emotions and few arguments. Let's read a little morality and move on to the essence.

"Part of the reason is that the theory of relativity requires increased intellectual effort and knowledge. Concepts such as the four-dimensional space-time continuum, Riemannian curvature, covariant differentiation, and the very formulation of Einstein's law of gravitation (the fundamental metric tensor is equal to the product of the Ricci tensor and the energy-momentum

tensor) reliably block access to the uninitiated to relativistic territory. Well, of course, a person who overcame these barriers on sleepless nights, and bloody sweat and finally saw the whole picture, has the right to be proud, can give the impression of an epigone, and is inclined to answer naive questions: "Long to explain!"

This hurts the pride of some who stand "on the other side of the barrier": "Look, you are so clean, now I will clean your face!"

Ignoring that the theory of relativity gave a quantitative explanation of many phenomena, the critic begins to attack the initial postulates of the theory, which are simple, but seem completely ridiculous to a biased and ignorant mind: "This can not be because it can never be!" The critic does not know that the postulates of the theory of relativity were adopted, so to speak, "not from a good life," not from a desire to be original, but forcedly, under the onslaught of such experimental facts, which from the traditional point of view "did not climb into any gate." There were hypothetical judgments: IF we assume ... (for example, the invariance of the interval), THEN the phenomena ... (for example, the dependence of masses on speed) become explainable. "

Authors of the article in the course, *"That the postulates of the theory of relativity were accepted, so to speak," not from a good life ", not from a desire to be original, but forced, under the onslaught of such experimental facts, which from the traditional point of view" did not climb into any gate".*

A new word in the methods of science: for experimental facts that do not enter the traditional gates, not traditional gates are drawn - postulates that themselves "do not climb into any gates. "*Incomprehensible* natural phenomena are dependent on *false* judgment, and the theory is ready! This is what: "Science, or - pseudoscience?"

"Let's see now if two bright minds - Olaf Roemer and Albert Einstein, would quarrel, if they, due to some monstrous curvature of space, met each other. First of all, let us turn to the Physical Encyclopedia of 1938, vol. IV, which in a calm tone sets out the essence of Römer's experiment. "ABOUT. Römer in 1675 found that when the Earth (W) is moving away from Jupiter (S), the intervals between successive eclipses of the satellite Yu Io are larger than when Z approaches S. This phenomenon was interpreted by Roemer as a result of the finite speed of light and the change in the distance from W to S, caused by the movement of W during the time between two successive

arrivals of the satellite Yu into its shadow. As W approaches S, the path of light from the satellite is shortened; as it moves away, it increases. Accordingly, the time it takes for light to travel this distance also changes. We see that there is no question of adding the speed of light to the speed of 3. Contrary to the author's assertion, Römer operated only with the distances from W to S (GS Landsberg also speaks of this). The stellar aberration and the Doppler effect do not contradict the invariance of the speed of light. Sorry, as the saying goes: "Too long to explain!"

The presentation of an extremely interesting and difficult problem solved by O. Römer, cited from the Physical Encyclopedia, can be done in this way, vaguely, not to mention the change in the speed of light relative to the Earth: “As W approaches S, the path of light from the satellite is shortened, while moving away, it increases. Accordingly, the time spent by light to travel this distance also changes". Taking this into account, let us help the authors of the encyclopedia, divide the path by time and find that the speed of light reflected by Io's satellite changes *in the Earth's system*. At first it increases, and as the Earth moves away from Jupiter, the opposite is true, the light catches up with the Earth, the speed decreases.

Opponents, on the other hand, do not want, or cannot see the obvious, read about changing the path and changing the time to travel this path, but make a strange conclusion: *"We see that* ***there is no question of adding the speed of light to the speed of Z****."*

Scientists have mastered the bloody sweat on sleepless nights and Riemannian curvature, and the Ricci tensor, and many other wisdom. The simplest task from the school curriculum on relative movement is not available to them.

In early February 1997 I sent a letter to the Presidium of the SB RAS.

Chairman of the Siberian Branch of the Russian Academy of Sciences

Academician Dobretsov N.L.

Dear Nikolai Leontievich!

In No. 47.1996. the newspaper "Science in Siberia", my article "Olaf Römer against Albert Einstein" was published, which indicated the inconsistency between the postulates of the theory of relativity and its conclusions, and also showed that the second postulate of this theory is

refuted by the available experiments and observations. This information contradicts what is written in reference books and textbooks, and hiding it from schoolchildren and students becomes their deliberate deception. Responses to the note in No. 1, "Science in Siberia", published articles by Corresponding Member. RAS A. Shalagin "How V. Sekerin" cut "A. Einstein" and researchers E. Vasiliev and S. Brandt "A reliable recipe for critics." In these articles, there are no reasoned objections to the essence of the issues raised, but a lot of space is devoted to the negative personality traits of the author of the first note, as well as the personalities of his possible associates. This turn of the discussion may be interesting for certain readers, but it does not add anything to the matter of solving the problem raised.

In the polemic that began, the editor-in-chief of the newspaper, I N Glotov, refuses to publish my second article "Here is a fairy tale come true", as well as the articles on this topic with a content other than the two mentioned above, received by the editorial board. By this he puts himself in an ambiguous position, and renders the Siberian branch a "disservice". In the article by E. Vasiliev and S. Brandt there is a remark: “*A picture is drawn of a kind of confrontation between the light forces of good and truth (opponents of the theory of relativity) and thick-skinned, stupid officials from science - relativists. Non-specialists and the general public may get the impression of a certain semblance of Lysenkoism, using force and reason in spite of the overwhelming opponents*.”

If the discussion is not continued, then the general public can really believe in the existence of an influential lobby consisting of "*thick-skinned, stupid officials from science - relativists*.".

I hope that you and the Presidium of the SB RAS will allow all interested and competent scientists in this matter to appear on the pages of the newspaper "Science in Siberia", because, firstly, the printed organ of an academic organization is the most suitable place for scientific discussion, and secondly, discussion - one of the most effective forms of the search for truth, and thirdly, the topic under discussion is important not only in scientific circles, but also outside of them.

V. Sekerin

Soon the Presidium replied that physicists did not recommend continuing the discussion. The controversy ended there.

13.6. Some conclusions

The absolute accessibility and fragmentation of our knowledge, and in this regard, the apparent simplicity of electromagnetic radiation, plays harshly with people. From early childhood, everyone hears about radio waves, about broadcasting television and radio stations, at school they learn about the unity of the radiation spectrum from ultra-short waves to radio waves, and as a result, they intuitively accept the existence of the ether, the medium - the carrier of these waves. The fact that light is a stream of particles, corpuscles, they hear so, by the way. Then they suddenly find out that there is no ether, but there is the theory of relativity, which is understood only by the gifted.

- But what about radio waves?

A painful rethinking begins. Nobody remembers the corpuscles of light. Some, rejecting doubts, take THAT on faith, get used to it, do not see and do not want to know its absurdity, they become professionals, they are part of the clan of the “chosen ones”. Others are looking for a hypothetical ether. For the rest of the majority, it all ends with uncertainty, dissatisfaction and complexes.

“The biggest mystery of the Cosmos is the mystery of infinity. What is, so to speak, "beyond the horizon"? Everybody got sick with such questions to one degree or another, but nobody recovered completely. Therefore, most prefer to rely on Einstein. Say, his theory of relativity explains everything. It is more comfortable. The alcohol of delusion tones up, and the unknown does not gnaw. But the theory of relativity explains nothing, but only transfers the riddle from one place to another.

Let's take SRT (special theory of relativity), which was born in 1905 against the background of amazement at the Michelson-Morley experiments.

So, right or wrong, at that time physicists, on the basis of the mentioned experiments, came to the conclusion that light propagates in all inertial systems with the same speed

$$c = 2.998\ 1010\ cm / s.$$

Of course - savagery from the point of view of common sense. A tank traveling at a speed of V shoots a projectile at a speed of v - and the projectile flies at a speed of v + V. And the light emitted by the headlights of the same tank at a speed of c, for some reason, propagates at the same speed c, not c + V ...

It seems that no one knows how the world works, but some pretend ...

The latter greatly confuses the situation, but gives work to a large army of scientists" [30, p. 151].

About ten years ago, the Presidium of the Russian Academy of Sciences organized a Commission to combat pseudoscience: pseudoscientific theories, religion, occultism, shamanism, astrology, all the obscurantism that relativism, on behalf of science, sanctifies with its mysticism. The commission, consisting mainly of physicists, however, stands guard over the very theory of relativity - the progenitor of modern scientific quackery and pseudoscience. It cannot be otherwise. The adherence of relativistic physicists to the theory of relativity, which became for them a divine message describing miracles, is similar to the adherence to the attitude of the Holy Inquisition to religion and Ptolemy's geocentric system with the same interest as the Inquisition.

14. Conclusion

Returning to the image of Einstein on the cover, such facial expressions are common among children, but not accepted in the adult world, therefore, it is shocking and puzzling.

The portrait must be taken literally. Involved in political intrigues, Einstein, presumably, understood that he had become a participant in a hoax and that it was impossible to deceive everyone and all the time. Not wanting to be an ordinary cheat in the eyes of his descendants, he spreads a photograph, a hoaxer, a magician, on which, more eloquently than any words, it is said that take the deception you have done as a joke.

The hoax was definitely a success. If the picture of K. Malevich is a mockery of the "creative" public, which sees deep meaning in it, then the theory of relativity is a mockery of the advanced part of the scientific elite of the whole world, which for the second century is also looking for and finds deep meaning in absolute nonsense.

Thus, together with the formula "2 x 2 = 5" - a symbol of obvious absurdity, all three plots in this part of I. Glazunov's painting show stupidity and charlatanism in different areas of human activity - in everyday life, art and science.

Many in the world have already figured out the scientific deception. Appropriate conclusions have been drawn from the results of the radar of Venus in America. B. G. Wallace writes that the increase in censorship associated with preparations for "Star Wars" makes it very likely that the US military considers the relative speed of light in outer space with + v top secret information. Such information came from the Department of the Air Force ” [26].

In the book by V.N.Demin and V.P.Seleznev, "Comprehending the Universe ..." their cost without the cost of launches is more than 800 million rubles, or 1 billion dollars) is the calculation of the location and flight trajectory according to the STO formulas (p. 140). Whereas the American spacecraft, the trajectory of which was calculated according to classical mechanics, having flown around all the planets, left the solar system.

It would be time for Russia to understand the perniciousness of relativism as well.

The theory of relativity is untenable as a physical theory. Consequently, its further teaching in schools and universities is a

deliberate deception and leads to moral damage to pupils and students, and the continuation of financing false research projects to material losses of the state.

Who should be responsible for this?

The second postulate of the theory of relativity - $c = const$ is refuted by observations and experiments. Therefore, relativistic mechanics has nothing to do with the description of the real world. The theory of relativity, special and general, is the result of uncritical imagination, incompetence and outright deceit, a scientific pile in which there is no pearl grain, there is nothing to dig into and look for any meaning in it. This is a collection of fantastic inventions and logical manipulations. The theory can be used as a kind of test for the readers' common sense and resistance to suggestibility, but it is better to push it further. And the problems, supposedly described by relativistic mechanics, must be rethought and their solutions must be found. First of all, to study and understand the nature of electromagnetic radiation, which is an essential part of the universe.

NOVOSIBIRSK

1958-2007

Author's publications on the topic of the book

1. V.I.Sekerin. Gnoseological features of the interpretation of observations. (On the example of double stars). Collection of works "Modern science and patterns of its development." Issue IV. Publication of Tomsk University. Tomsk - 1987.

2. V. I. Sekerin. Methodological and experimental foundations of the postulate of the constancy of the speed of light. Collection of works "Modern science and patterns of its development." Issue V. Publication of Tomsk University. Tomsk - 1988.

3. V. I. Sekerin. "Essay on the theory of relativity." Novosibirsk: Novosibirsk book. publishing house, 1988

4. V. I. Sekerin. "The theory of relativity - the mystification of the century." Novosibirsk: Novosibirsk book. publishing house, 1991

5. V. I. Sekerin. The role of astronomical observations for the formation of categories of space and time. Collection of works of the 2nd International Conference "Problems of space and time in modern natural science", St. Petersburg, September 16-21, 1991.

6.V.I.Sekerin. Modern corpuscular model of light. Collection of reports of the International Conference "Newton and Problems of Mechanics of Rigid and Deformable Bodies", St. Petersburg. March 22-27, 1993

7.V.I.Sekerin. The transverse Römer (Doppler) effect in classical physics. *Text of the report at the 2nd International Conference. Leningrad, September 1991.* Collection of articles presented at the International Congress "Fundamental Problems of Natural Science", St. Petersburg, June 21–27, 1998 S.-P., Russia, 1999

LITERATURE

1. Cheshev V.V. The problem of reality in classical and modern physics. Tomsk, TSU, 1984

2. Einstein. A. Collection of scientific papers. M., 1965.

3. Karjakin NI, Bystrov KN, Kireev PS .. A short guide to physics, M., 1962.

4. Logunov A.A. Relativistic theory of gravity and new ideas about space and time. M .; From Moscow State University, 1986.

5. Godzhaev N.I. Optics. M., 1977.

6. H.E. Ives and G.R. Stilwell, J.Opt.Soc.Am. 1938, v. 28, no. 7, p. 215-226.

7. W. Ritz, Ann. De chim. et phys., 13, 145, 1908.

8. W. de Sitter, Phys. Zs., 14, 429, 1913

9. Landsberg G.S. Optics. M., 1976.

10. Kukarkin VV, Parenago PP Physical variables of stars. M.-L., 1937.

11. Struve O. Evolution of stars. M., 1954.

12. Bonch-Bruevich A.I., Molchanov V.A. New optical relativistic experience. Optics and spectroscopy. Vol. 1, no. 2, 1956.

13. Froome K., Essen L. Velocity of light and radio waves. M., 1973.

14. Spectroscopy Letters, US, 1969, vol. 2, 12, p. 361 - 367.

15. Max Born. Einstein's theory of relativity. M., 1973.

16. Brillouin L. A new look at the theory of relativity. Moscow, 1972.

17.S.A.Bazilevsky, M.P. Varin. Einstein's mistake. Sat. works. "Problems of space and time in modern natural science". S. Petersburg. 1991 (Appendix 1).

18. Gerneck F. Albert Einstein. M., 1966.

19. The principle of relativity. Sat. works. Atomizdat, M., 1973.

20. Mach E. Mechanics. S.-P. 1909.

21. Fock. V.A. The theory of space, time and gravitation. M. 1961.

22. Lenin V.I. collection cit., M. 1964

23. Sommerfeld. Ways of knowledge in physics. M., 1973.

24. Archive of Moscow State University. Fund 201. Inventory 1. Unit. storage 197, p. 6.

25. Timiryazev A.K. Physics. Part 2, M. 1926.

26. Gardner M. Theory of relativity for millions. M., 1976.

27. Migdal A.B. How physical theories are born. M., 1984.

28. Newspaper "Science in Siberia" No. 33, 28 August 1986, Novosibirsk.

29. B.C. Wallese. Scientific Ethics, US, 1985, 3, p.l.

30. V. Boss. Intuition and Mathematics. M.: KomKniga, 2007.

Attachment 1 [17]

S. A. Bazilevsky, M. P. Varin

Einstein's mistake. Sat. works. "Problems of space and time in modern natural science". S. Petersburg. 1991 year.

Einstein's ERROR

Doctor of Technical Sciences, prof. S. A. Bazilevsky, Ph.D. M.P. Varin

In the middle of the last century, contradictions were revealed between two directions in physics: classical and relativistic. The first direction retained the traditional objectivity of the true science of nature - the independence of its laws from human thinking; the second trend has shown a desire to replace real facts with the impressions they make on human feelings. In the course of its development, the second direction led to a radical breakdown of the concepts of space, time and matter.

The crisis began with electrodynamics, the basis of which since 1865 was the group of Maxwell's equations, which generalized the experimental results of Coulomb and, mainly, Faraday. Maxwell's electromagnetic theory borrowed its rigor and consistency from mathematics, and from experience - its reliability, wide possibility of criticism and objectivity of verification.

Over time, it was found that when going to high speeds, measured in tens, hundreds or more kilometers per second, inherent in the movement of microparticles, Maxwell's formulas give very noticeable deviations from the experiment. The theory clearly required improvement and refinement.

However, science, thanks to the efforts of some scientists, went off the straight path and started looking for arbitrary postulates that could fit new facts to outdated hypotheses. The epistemological trend in science, according to which pure thinking is accessible to the knowledge of reality, which originates from Plato, was further developed in the second half of the 19th century in the works of Mach, Poincaré, and later Einstein [1].

In the last century, the hypothesis of the ether, a world all-pervading medium that fills all space, was widespread. Ether, as a carrier of light, must have many amazing properties: on the one hand, it must be extremely "thin", weightless, so as not to hinder the movement of microparticles and celestial bodies, on the other hand, it must be incredibly "rigid" in order to transmit transverse waves of light at a speed of hundreds of thousands of kilometers per second. The oscillation frequency possible for it should cover the entire

range, practically from zero to many trillions (10^{18}) per second. But in the second half of the 19th century, the works of Saint-Venant, Rayleigh and Stoletov, it was found that such requirements for a substance are completely incompatible.

Many attempts have been made to save the hypothesis of the ether by complicating its hypothetical properties, but, as S. I. Vavilov wrote, “Under the onslaught of experimental data, the concept of ether has become so cumbersome and uncertain that it is difficult to argue in favor of it even by the fact that it gives quite a visual image of the phenomena. As in Newton's time, we also know little “what ether is”, and perhaps even less than then” [2].

The ether hypothesis was replaced by Maxwell's electromagnetic theory. It had the advantage of replacing the obviously discredited ether with a new concept - "electromagnetic field". This concept had no analogs in the visually observed world and therefore made it possible to ascribe to oneself the desired properties "ad hoc", including the ability to transmit light and electromagnetic waves at a speed 300 times greater than that of the fastest known cosmic bodies (comet Kohoutek) ...

Maxwell's theory at low speeds and in statics perfectly described all electromagnetic phenomena known by that time, but the old ether-wave theory had many attractive features. What was needed was a decisive experiment that could confirm the validity of only one of the competing theories.

And Maxwell found such a scheme. The idea of the experiment was based on the fact that the square of the velocity of any elastic wave is equal only to the ratio of the elastic modulus to the specific density of the substance of the propagation medium, but does not depend on the motion of the source. If the ether, as a material medium, exists, then it is possible to experimentally measure the absolute speed of the Earth in world space. To do this, it is enough to find the speed of propagation of light from an earth source in the direction of the earth's motion and in the opposite direction and take the half-difference of the amplitudes of its value. This will confirm the ether-wave theory.

If the initial ideas of Maxwell's theory are true, then the electromagnetic field created by any source will remain rigidly connected to it and will move with it. Therefore, vibrations in it must propagate at a speed constant relative to the source at the moment of radiation, no matter how it moves after that. This was clearly what Maxwell had expected.

Unfortunately, the experiment he proposed was staged by Michelson only sixteen years after the proposal and two years after the death of the initiator (1879). During his lifetime, Maxwell did not have the opportunity to see for himself the results of the experiment and prove to his contemporaries how right he was!

The experimenter and his contemporaries did not accept Maxwell's idea, remaining in captivity of the ethereal ideas of Huygens, Fizeau, and others. Instead of accepting the simple and convincing explanation given by the electromagnetic theory, they continued to insist on the constancy of the speed of light relative to the world ether, although there was no way to find the latter failed.

In the experiments of Michelson and his followers, the interferometer moved with the Earth and all its parts, including the light emitter, remained *mutually* motionless. It was unacceptable to draw conclusions from these experiments concerning *moving sources and receivers*, unless one admitted in advance and unconditionally the ether-wave theory of light. Therefore, in order to reconcile the results of direct observations with the generally accepted hypothesis, Fitzgerald proposed to consider Michelson's experiment as proof of an amazing fact: not the speed of light depends on the speed of its emitter, but the dimensions of all bodies depend on the speed of their movement relative to the observer. Lorentz substantiated this hypothesis with his electronic theory, and Poincaré based on it a new theory of relativity, sharply different from Newton's theory.

Later, all these abstract reasoning, taken as reality, took the form of Einstein's second postulate: "The speed of light in any coordinate system is the same and does not depend on the movement of its source in it." In essence, this was a consequence of Fitzgerald's hypothesis, but very soon Fitzgerald's hypothesis began to be considered a consequence, and Einstein's postulate was taken as the basis for Einstein's new theory of relativity, which he completed in 1905 [3] and about which, back in 1914, Professor O.D. Khvolson said that "unheard of paradox" is its "especially characteristic feature!" [4].

Paradox, contrary to common sense, has become, according to A. Tyapkin, almost synonymous with science, progressiveness and fashion. The definitions of space and time, mass and speed, causality and sequence have acquired a paradoxical form. Some scientists are guided by similar motives, more and more complicating their mathematical apparatus.

After the spread of relativism, including to other sciences, Einstein's second postulate turned into a standard "criterion of scientificness" for any new proposal or hypothesis: only such a statement is considered correct and proven that does not contradict Einstein's second postulate and conclusions from it, although it has not been proven by anyone either theoretically or experimentally.

If Michelson's experiment had been correctly interpreted according to Maxwell from the very beginning, then it would follow that the speed of light in a void added up with any other speed participating in this phenomenon,

according to the rules of vector algebra! As Academician LI Mandelstam [5] put it, “... everything could be in order” and neither artificial Lorentz transformations nor Einstein's whole theory of relativity would be needed. But for some reason the academician did not draw any practical conclusions from this sensible remark! He simply stated that Einstein's second postulate has not been proven and that “... we proceed from it, not demanding proofs,” that is, unscientific, And he is the cornerstone of the theory of relativity!

The erroneous interpretation of the experiments of Michelson and his followers forced many physicists to seek a joint solution of the famous Maxwell equations with Fitzgerald's postulate (he is also Einstein's second postulate), and it was this postulate, and not Michelson's experiment, that caused the relativization of the concepts of space and time.

Let's consider in more detail the classical theory of relativity.

The principle of relativity was given by Galileo (1632); he only stated that about any body, regardless of anything, it is impossible to say whether it is at rest or in uniform rectilinear motion. Hence it follows that the position or movement of any body can be detected and measured only in relation to the position and movement of other bodies independent of it. After all, space itself has no reference points. This principle is undeniable.

But it is incomplete. For definiteness, it must be supplemented with some conditions and, depending on their nature and on its basis, not one, but many different "systems of generalized knowledge" - theories can be built. Of all the possible proposals, the most noteworthy is the classical theory of Newton, as the first in time of creation, and the so-called theory of Einstein, as the most passionately defended by its supporters at the present time.

Let us take a closer look at Galileo's principle of relativity, which was formally recognized by Einstein. According to this principle, expressions such as "Earth's distance from Jupiter" and "Jupiter's distance from Earth" are completely identical. The same can be said about "The speed of the light source relative to the receiver" and "The speed of the light receiver relative to its source".

And an apple can be regarded as falling on the Earth with the same right as the Earth falling on an apple, - so the relativists, followers of Einstein, say. But Newton's dynamics introduces a significant correction to this issue: according to corollary IV from III of Newton's law ([6], p. 47) “the center of gravity of a system of two or more bodies from the interaction of bodies on each other does not change either its state of rest or motion; therefore, the center of gravity of the system of all bodies acting on each other ... or is at rest, or moves uniformly and rectilinearly." Therefore, the speed and magnitude of

their mutual displacements are inversely proportional to their masses, and for the same time the apple, for example, will shift relative to the general center of gravity of the "Earth-apple" system by an amount 10^{26} times greater than the Earth. Consequently, the expression "an apple falls to the Earth" is just as much more logical than the opposite!

And Copernicus's heliocentric system, based on the same physical concepts, is 300,000 times more logical than Ptolemy's geocentric system.

Continuing to reason in this direction on the basis of the astronomical picture of the world, we inevitably become convinced that all the bodies of the Universe are grouped into dusty, stellar and galactic systems and their associations, in which the motion of all components obeys the laws of inertia and gravitation so that the center of gravity of each formation will respond to external influences as a single solid body. In the limit, embracing with the imagination all existing matter as a whole, we will come to the idea of "absolute" space in which the center of gravity of the substance will no longer have any displacement meters, that is, it will be absolutely motionless. Independence from anything is the content of the concept "absolute". Note that in the laws of classical mechanics there is absolutely only acceleration.

Classical physics considers such a picture of the world to be quite promising, but it is practically impossible to study the motion of matter in absolute space (in an absolute frame of reference). Therefore, even Newton considered it necessary to isolate for practical purposes from the absolute space some limited, movable part ([6], p. 30), "which is determined by our feelings by its position relative to some bodies and which in everyday life is taken as motionless space." As objects that determine the relative space, it is natural to choose bodies with the greatest mass, the proper motion of which relative to the general center of gravity of the objects under consideration is negligible.

Newton wrote about the characteristic properties of relative space ([6], p. 49):

- "The relative movements of bodies enclosed in any space are the same, whether this space is at rest or moves uniformly and rectilinearly without rotation";

- “If several bodies, moving in any way relative to each other, are subject to the action of uniformly accelerating forces directed along parallel straight lines, then these bodies will continue to move relative to each other in the same way as if the said forces did not act on them ".

200 years before Tsiolkovsky, Newton foresaw in this statement the phenomenon of weightlessness, always accompanying free space flight!

Further development of the classical theory of relativity, originating from Galileo, can be seen in the works of Newton, Laplace, Lagrange, IV Meshchersky and others. This development was especially facilitated by the replacement of the concept of "relative space" by "coordinate system". However, overestimating the significance of this system sometimes leads to no less harmful errors than underestimating it: it is often forgotten that all coordinates exist only in our imagination or on paper. They can be used to describe the spatial properties of real bodies, their relative position and movement, but this does not mean that they are physically connected with this system, that by moving its origin, rotating its axes, changing the scale or giving it one or another speed, we we can influence the relative position, physical dimensions or elements of motion of real bodies. A coordinate system is nothing more than a wireframe, template or scale, applied in the imagination to the products of nature for their study, but in no way connected with them.

We can mentally create any coordinate system. A successful choice of them can greatly simplify the mathematical expressions with which we describe objects and processes, but we cannot control them through the transformation of coordinates, as relativists think. Einstein, for example, directly wrote ([3], p. 425): "A gravitational field can be created by simply changing the coordinate system." Classical physics categorically denies this: after all, such a "field" will remain only on paper, in the form of mathematical symbols, and in nature it will not appear only from the fact that instead of some formulas we will write others!

The coordinate system has no mass or substance. The causal connection of objective phenomena can be carried out only with equally objective bodies and phenomena. Failure to understand this simple law is one of the most key mistakes of relativism.

Laws expressed in different coordinate systems do not always turn out to be universal: their mathematical expression can vary greatly depending on the chosen coordinate system. So, for example, the analytical description of an ellipse in different systems is different, but its real properties and parameters (area, perimeter, eccentricity) remain unchanged. To check the objectivity of the law in this case, use the method of transformation of coordinates: if, after certain transformations, in the new system the mathematical expression of this law does not essentially change, such a law can be considered universal within this type of transformation, and the corresponding equations are called "covariant".

The simplest group of transformations is named after Galileo. It refers to the case of parallel movement of the coordinate axes with a constant speed v

and is presented in all courses in analytical geometry. For the case of movement only along the Ox axis, we have:

$$x' = x - v\,t;\ y' = y;\ z' = z; \tag{1}$$

These equalities are called the transformations of Galileo and only in the XX century they began to add the fourth equality

$$t' = t \tag{2}$$

due to the fact that relativists do not take this equality for granted, which by the way deprives time of objectivity, and phenomena - of causality.

As an example, let's apply this transformation to the propagation of light in world space. Let us assume that at some point *O* there was a flash and the light from it began to spread in all directions with the same speed relative to the source. After *t* seconds, the light reached point *K* at a distance *r* from the place of the flash *O*. Considering all the phenomena in relation to this last position, we write the following equation:

$$r^2 = x^2 + y^2 + z^2 = c^2\,t^2 \tag{3}$$

Exactly the same equation can be written with respect to another coordinate system *O'x'y'z'* moving relative to the first along the *Ox* axis with constant velocity *v*:

$$(r')^2 = (x')^2 + (y')^2 + (z')^2 = (c')^2\,(t')^2 \tag{4}$$

Both equations are equal, since they describe the same phenomenon in the same space. Therefore, they must be compatible. Substituting into equation (4) the formulas of the Galileo transformation (1) and (2) and solving it together with (3) with respect to the speed of light in the "hatched" system, we obtain the main expression of the classical theory of relativity;

$$c' = c\,\sqrt{1 - 2\beta\cos(\varphi) + \beta^2}\ , \tag{5}$$

where $\beta = v/c$, φ — angle between vectors *c* and *v*.

Equality (5) is nothing more than the well-known formula for the vector addition of velocities, which states that the speed of light is added with any other speed involved in consideration, according to the general rules of Newtonian mechanics. Like the speed of any other bodies, it *depends on the choice of the coordinate system* relative to which we measure it, and *on the movement of the source in this system*.

But nothing, except common sense, prevents us from assuming that the speed of light relative to any coordinate system is always the same and does not depend on either its motion or the motion of the source in it. This

assumption is expressed by Lorentz's postulate, consistent with his theory of the structure of matter, but also optional for it:

$$x' = \frac{x - vt}{\sqrt{1-\beta^2}}; \quad t' = \frac{t - \beta x / c}{\sqrt{1-\beta^2}}; \quad y' = y; \quad z' = z \tag{6}$$

Formulas (6) belong to the transformation group named after Lorentz. Relativists consider it to be the only correct one and refer to the fact that only it supposedly leads to the unity of the laws of electrodynamics of moving and stationary bodies. This is not what will be shown below.

Here we want to emphasize once again that all transformations of coordinates (frames of reference) are made in the same three-dimensional space in which the objects that we study and ourselves exist and move in. There is no other space in the world. In this regard, the reification of coordinates, preached by relativists, inevitably leads to the favorite theme of many science fiction novels: to a multitude of worlds that coincide in three dimensions, but are displaced relative to each other in the fourth dimension. This is the only way to interpret the following expressions from VA Ugarov's widespread book "The Special Theory of Relativity" [7], although this is not a novel:

1) "Instruments installed in different reference systems will give different results ..." (p. 18), instead of: "Instruments will give different results depending on the reference system used in them, for which they are graduated."

2) “However, in any frame of reference moving with acceleration relative to any inertial coordinate system ... deviations from Newton's laws will be detected” (p. 23), instead of: “If the coordinate system moves with acceleration, then the devices will also note this acceleration in full compliance with Newton's laws ”.

3) "Let's take in each of the reference systems *K* and *K’* along a ruler of the same length ... The question is how long the *B’C’* ruler will measure the observer from the *K* system and what length of the *BC* ruler will measure the observer from *K’* " (p. 45).

In classical physics, such a question cannot arise at all: real rulers do not change their length depending on who is looking at them and from where. But, from the point of view of Ugarov, this is not only possible, but also necessary!

And Einstein himself wrote ([3], p. 187) that “the question of whether the Lorentz contraction is real or not does not make sense: the contraction is not real for an observer moving with the body, but it is real, since it can be proved by physical means for an observer who is not moving with the body. "

Do not strain yourself, reader, in a thought experiment, as you will have to agree with Einstein on the main point: there really is no point here.

Einstein's theory of relativity, based on the Lorentz transformation, places the blame for the fact that Maxwell's equations do not cover the region of high speeds, not on the author of this theory, but on the Galilean transformation formulas proposed over 300 years ago and firmly included in all works on analytical geometry ...

However, Lorentz's transformations are as arbitrary as Einstein's postulate about the independence of the speed of light from the motion of the source. The canonization of Einstein's II postulate in physics led to the widespread denial of any statement that contradicts it.

Here is one of the simplest examples of the use of this technique, borrowed from the book by M. Bowler "Gravity and Relativity" [8]:

“Consider ... the electric field of a plane wave:

$$E = E_0 \sin (k x — \omega t) \tag{7}$$

Its phase is $\varphi = k x — \omega t$, and the phase velocity is:

$$\frac{\mathbf{d}}{\mathbf{dt}}\mathbf{x} = \frac{\boldsymbol{\omega}}{\mathbf{k}} = \mathbf{c} \tag{8}$$

<…> The phase should be invariant, and on this basis it is possible to determine what happens to k, w during the Galileo transformation, that is, to relate the wavelength and frequency values perceived by one observer and another, moving relative to the first. Since the phase is invariant at all points and at any moments of time, the equality

$$k' x' — \omega' t' = k x — \omega t$$

Substituting here *x’* and *t’* expressed in terms of *x* and *t* based on the Galileo transformation, we obtain

$$k' = k, \quad v k' + \omega' = \omega$$

from where

$$\omega' = \omega (1 — v/c) \tag{9}$$

and the phase velocity in the hatched system is as follows:

$$\mathbf{c}' = \frac{\boldsymbol{\omega}'}{\mathbf{k}'} = \mathbf{c} - \mathbf{v} \tag{10}$$

We will get an expression for the Doppler shift and the expected relationship between the values of the speed of light in the two reference frames. The fact that the speed turns out to be different, in itself indicates the

non-covariance of the equations of the electromagnetic field in relation to the Galileo transformation."

The author of the above quote makes two mistakes here:

Firstly, since Galileo's law was introduced into the initial task and it is not excluded in further transformations, it inevitably remained in the final solution. Nothing else could have been.

Secondly, obtaining different speeds of light with respect to carved coordinate systems only confirms the correctness of the classical law of addition of velocities arising from the Galileo coordinate transformation system and has been repeatedly verified with scrupulous accuracy both on terrestrial installations and in space conditions. On the contrary, M. Bowler's statement that the speed of light "... is a universal constant, the same for all unaccelerated observers," has not been proven by anyone and is a logical error from Michelson's experiments.

A conclusion similar to the one stated above can be obtained in a more general form by referring directly to Maxwell's equations, the non-covariance of which to Galileo's transformations is considered undoubted. Let us show that this is not so, that non-covariance is not inherent in the equations themselves, but in those arbitrary distortions to which they were subjected after the death of their author by some scientists.

Let us write the first group of Maxwell's equations in the form as he wrote it himself in his "Treatise" [9], replacing only its designations with modern symbols.

$$\begin{aligned} \frac{dE_y}{dx} - \frac{dE_x}{dy} &= -\frac{1}{\sigma}\frac{dB_z}{dt} \\ \frac{dE_z}{dy} - \frac{dE_y}{dz} &= -\frac{1}{\sigma}\frac{dB_x}{dt} \\ \frac{dE_x}{dz} - \frac{dE_z}{dx} &= -\frac{1}{\sigma}\frac{dB_y}{dt} \end{aligned} \qquad (11)$$

Here it is indicated: B - magnetic induction, E - electric field strength; both are functions of the four arguments $x, y, z,$ and t.

The same letters with indices x, y, z denote the projections of these quantities onto the coordinate axes.

$\sigma = \frac{CGSE}{CGSM}$ — an electrodynamic constant, numerically equal to the speed of light in a void relative to its source, but physically not identical to it.

Replacing in system (11) the projections B and E by their expressions through the corresponding unit vectors $B_x = iB$, $B_y = jB$, $B_z = kB$, we obtain after vector addition on the left side of the rotor the electric field strength, and

on the right side - the total derivative of the magnetic induction. Consequently, the system of equations (11) is transformed into one:

$$\mathrm{rot(E)} = -\frac{1}{\sigma}\frac{\mathrm{dB}}{\mathrm{dt}} \tag{12}$$

Exactly the same Maxwell equation in differential form is deduced by E. Purcell in the II volume of the "Berkeley course of physics" [10], proceeding from its integral form

$$\int_c EdS = -\frac{1}{c}\frac{d}{dt}\int_s Bda$$

He shows that equation (12) is a consequence of this last equation. But the logic of the following statement of the same E. Purcell is completely paradoxical, he literally writes the following:

"Since B can be position and time dependent, we write ∂B/∂t instead of dB/dt." No further explanation or evidence is provided for this unexpected claim. And there can't be any! Knowing the dependence of *B* (as well as *E*) on four arguments *x, y, z* and *t*, about which E. Purcell impartially writes on page 245 of his book [10], he proposes to exclude three of them from consideration and leave only one and that, which clearly did not appear in the previous mathematical analysis, but was completely arbitrarily introduced at the last moment!

In other courses in relativistic physics, this technique is better disguised. Here are just some of the most famous and common sources.

R. Feynman in his "Feynman Lectures on Physics" considers the formulas of the electromagnetic field with partial derivatives in time, calling them not Maxwell-Hertz equations, like Einstein, but Maxwell's equations, although, as shown above, Maxwell, following Faraday, used in they are full derivatives. R. Feynman writes [11]: "However, Maxwell's equations, apparently, do not obey the principle of relativity: if they are transformed by substitution (Galileo - SB, MV), then their form will not remain the same." But R. Feynman could have made a completely different conclusion if he considered the equations of the electromagnetic field in the form of Maxwell!

In the physics course of SE Frisch and AV Timoreva [12], in the physics reference book for students by NI Karjakin… [13] and many other monographs, Maxwell's equations are given in partial derivatives with respect to time without any justification.

On page 46 of their course, physicists S. E. Frisch and A. D. Timoreva [12] give a short derivation of the Faraday equation

$$E = \frac{\partial u}{\partial n}, \qquad (*)$$

from which Maxwell's equations are later obtained. However, when deriving this equality, the authors forgot that, in general, both the intensity *E* and the potential *u* depend not only on the abscissa of the point under consideration, but also directly on the time *t*, during which the excitation of the emitting center of the entire system *E = E (n, t)*. For this reason, equality (*) needs fixing:

$$E = \frac{du}{dt} = \frac{\partial u}{\partial n} \cdot \frac{dn}{dt} + \frac{\partial u}{\partial t}$$

The same two-term expressions must be written for each of the other coordinate directions. Only after that their system will be justified by all Faraday's experiments, and on their basis it will be possible to build modern, not imaginary, electrodynamics. Moreover, it is the members of the ∂u/∂t type that will provide it with the ability to cover both static and fast-flowing phenomena.

But the authors of this textbook neglect the members ∂u/∂t, which deprives their conclusions of the necessary generality. Later, on pages 462–466, with the introduction of a new variable, the relationship between the electromagnetic field and time returns, but at the same time the connection of the right-hand sides of Maxwell's (and Faraday's) equations with spatial coordinates is lost. And in them lies the very essence of the question.

It is clear that equations distorted in this way cannot give correct results.

For further research, we return to the original Maxwell equation in its general form (12).

Let us expand the value of the total derivative with respect to its partial terms

$$\frac{\mathrm{dB}}{\mathrm{dt}} = \frac{\partial \mathrm{B}}{\partial \mathrm{x}} \frac{\mathrm{dx}}{\mathrm{dt}} + \frac{\partial \mathrm{B}}{\partial \mathrm{y}} \frac{\mathrm{dy}}{\mathrm{dt}} + \frac{\partial \mathrm{B}}{\partial \mathrm{z}} \frac{\mathrm{dz}}{\mathrm{dt}} + \frac{\partial \mathrm{B}}{\mathrm{dt}} \qquad (13)$$

The time derivatives of the coordinates, according to the conditions adopted in the previous section, are equal to the components of the speed of light. Therefore, equality (12) is equivalent to the following:

$$\mathrm{rot(E)} = -\frac{1}{\sigma}\left(\frac{\partial \mathrm{B}}{\partial \mathrm{x}} \mathrm{c}_{\mathrm{x}} + \frac{\partial \mathrm{B}}{\partial \mathrm{y}} \mathrm{c}_{\mathrm{y}} + \frac{\partial \mathrm{B}}{\partial \mathrm{z}} \mathrm{c}_{\mathrm{z}} + \frac{\partial \mathrm{B}}{\partial \mathrm{t}} \right) \qquad (14)$$

We can write the same equation for any other (hatched) coordinate system moving relative to the first in any direction with a speed *v*:

$$\mathrm{rot}(\mathrm{E}') = -\frac{1}{\sigma}\left(\frac{\partial \mathrm{B}'}{\partial \mathrm{x}'}\mathrm{c}'_{\mathrm{x}'} + \frac{\partial \mathrm{B}'}{\partial \mathrm{y}'}\mathrm{c}'_{\mathrm{y}'} + \frac{\partial \mathrm{B}'}{\partial \mathrm{z}'}\mathrm{c}'_{\mathrm{z}'} + \frac{\partial \mathrm{B}'}{\partial \mathrm{t}'}\right) \tag{15}$$

Both equations (14) and (15) refer to the same phenomenon in the same single space. Therefore, they must be compatible. Let us connect them in accordance with the rules of analytical geometry by Galileo transformations in all coordinates:

$$\begin{aligned} x' &= x - v_x\, t \\ y' &= y - v_y\, t \\ z' &= z - v_z\, t \\ t' &= t \end{aligned} \tag{16}$$

After differentiating equality (16), we have:

$$\mathrm{c}'_{\mathrm{x}'} = \frac{\mathrm{dx}'}{\mathrm{dt}'} = \frac{\mathrm{dx}}{\mathrm{dt}} - \mathrm{v}_{\mathrm{x}} = \mathrm{c}_{\mathrm{x}} - \mathrm{v}_{\mathrm{x}}$$

$$\mathrm{c}'_{\mathrm{y}'} = \frac{\mathrm{dy}'}{\mathrm{dt}'} = \frac{\mathrm{dy}}{\mathrm{dt}} - \mathrm{v}_{\mathrm{y}} = \mathrm{c}_{\mathrm{y}} - \mathrm{v}_{\mathrm{y}} \tag{17}$$

$$\mathrm{c}'_{\mathrm{z}'} = \frac{\mathrm{dz}'}{\mathrm{dt}'} = \frac{\mathrm{dz}}{\mathrm{dt}} - \mathrm{v}_{\mathrm{z}} = \mathrm{c}_{\mathrm{z}} - \mathrm{v}_{\mathrm{z}}$$

Substituting these relations into equation (15), we get:

$$\mathrm{rot}(\mathrm{E}') = -\frac{1}{\sigma}\left(\frac{\partial \mathrm{B}'}{\partial \mathrm{x}'}(\mathrm{c}_{\mathrm{x}} - \mathrm{v}_{\mathrm{x}}) + \frac{\partial \mathrm{B}'}{\partial \mathrm{y}'}(\mathrm{c}_{\mathrm{y}} - \mathrm{v}_{\mathrm{y}}) + \frac{\partial \mathrm{B}'}{\partial \mathrm{z}'}(\mathrm{c}_{\mathrm{z}} - \mathrm{v}_{\mathrm{z}}) + \frac{\partial \mathrm{B}'}{\partial \mathrm{t}'}\right) \tag{18}$$

We have obtained an equation that is identical in meaning with equation (14), and differs from it only in that instead of the speed of light "*c*" relative to the source, there is a specific speed of light "*c - v*" relative to the measuring equipment moving together with the system *O'x'y'z'* receiver. This proves the covariance of Maxwell's equation in its general form (12) with respect to the Galilean transformation.

Equation (14) is a special case of equation (18) for the condition $v = 0$, that is, for the case of relative immobility or rather slow motion of the coordinate axes relative to each other. More precisely, one can say, for example, as follows: allowing an error of no more than 0.01%, the fundamental Maxwell equation (14) can be applied for all speeds not

exceeding 30 km / s. When this speed is exceeded, it transforms without discontinuity into equation (18), which fully corresponds to the Galileo transformation, taking into account the direction of the action and Newtonian mechanics.

The gap between the electrodynamics of stationary and fast-moving bodies is thus eliminated.

The second group of Maxwell's equations can be transformed in exactly the same way, leading to the following vector form:

$$\mathbf{rot(B)} = \frac{\mathbf{1}}{\sigma}\frac{\mathbf{dE}}{\mathbf{dt}} + \frac{4\pi}{\sigma}\tau \tag{19}$$

From it, we obtain in the *Oxyz* system in the same way as for relation (14):

$$\mathrm{rotB} = \frac{1}{\sigma}\left(\frac{\partial \mathrm{E}}{\partial \mathrm{x}}\mathrm{c}_{\mathrm{x}} + \frac{\partial \mathrm{E}}{\partial \mathrm{y}}\mathrm{c}_{\mathrm{y}} + \frac{\partial \mathrm{E}}{\partial \mathrm{z}}\mathrm{c}_{\mathrm{z}} + \frac{\partial \mathrm{E}}{\partial \mathrm{t}}\right) + \frac{4\pi}{\sigma}\tau \tag{20}$$

and, accordingly, in the *O'x'y'z'* system:

$$\mathrm{rot}(\mathrm{B}') = \frac{1}{\sigma}\left(\frac{\partial \mathrm{E}'}{\partial \mathrm{x}'}(\mathrm{c}_{\mathrm{x}} - \mathrm{v}_{\mathrm{x}}) + \frac{\partial \mathrm{E}'}{\partial \mathrm{y}'}(\mathrm{c}_{\mathrm{y}} - \mathrm{v}_{\mathrm{y}}) + \frac{\partial \mathrm{E}'}{\partial \mathrm{z}'}(\mathrm{c}_{\mathrm{z}} - \mathrm{v}_{\mathrm{z}}) + \frac{\partial \mathrm{E}'}{\partial \mathrm{t}'}\right) + \frac{4\pi}{\sigma}\tau' \tag{21}$$

Everything that we said about equations (14) and (18) can be referred to these equations.

Thus, the entire group of Maxwell's equations turns out to be covariant to Galileo's transformations and all the authority that it enjoyed until the beginning of the 20th century, inclusive, should be returned to it. It fits exactly into the general system of human knowledge about nature and, unlike Einstein's theory, does not require any breakdown of the basic physical concepts that have developed over the millennia, and a slender building of mathematics created by the greatest geniuses of mankind. All the paradoxes generated by Einstein's second postulate disappear, and there is no need for multidimensional Riemann geometries and Lorentz transformations.

In a word, in the words of Academician Mandelstam, then "everything comes in order"!

The form with partial derivatives, which, contrary to common sense and experience, was given to these equations by Hertz and Heaviside at the dawn of the 20th century, fulfilled its task: Maxwell's equations turned into expressions that were not covariant with respect to the Galileo transformation, which opened the way for the spread of relativism.

As noted in [14], in the writings of Einstein there are almost no references to someone's statements, quotes from like-minded people or predecessors. Consequently, all errors that may be found in them should be attributed to the

author himself. Therefore, the fundamental error that we are talking about - the use of Maxwell's equations with the substitution of the total derivative for the partial derivative - can be called Einstein's error. Although the first to admit it, as we indicated above, were G. Hertz [15] and O. Heaviside [16].

The mechanism of this error can be restored with a high degree of probability by continuing the line of reasoning of S. E. Frisch and A. V. Timoreva ([12], p. 466).

The basis here is the Faraday equation of electromagnetic induction, which indicates the direct proportionality of the induced current strength to the magnitude of the derivative of the magnetic flux. The latter, in turn, is the sum of partial derivatives of the parameter under consideration in three coordinates and time:

$$\frac{\partial \mathbf{B}}{\partial \mathbf{x}}, \frac{\partial \mathbf{B}}{\partial \mathbf{y}}, \frac{\partial \mathbf{B}}{\partial \mathbf{z}}, \frac{\partial \mathbf{B}}{\partial \mathbf{t}}.$$

Of these, classical physics retained all four, while Einstein's physics rejects the first three and leaves only the last.

Above we have seen what the results of such an arbitrary "transformation" lead to.

Thus, we returned to equations of the type (13) and all the previous conclusions from them, which remain valid.

The same conclusions can be reached by comparing the mathematical correctness of the Galileo equations and the Lorentz equations. The former follow directly from the definition of Cartesian coordinates and the elementary geometry of Euclid. They are not subject to any doubt. To pass to the Lorentz group, we would need to introduce an arbitrary factor into all the right (and only right) sides of Galileo's equations $1/\sqrt{1-\beta_i^2}$, where $\beta_i = v_i/c$ depends on the relative speed of the body and the light source v_i and from the direction of their movement, i = 1, 2, 3. This factor retains its real value only within the limits $0 \leq \beta_i < 1$. On the border of value $|\beta_i| = 1$ it goes to infinity, and at $|\beta_i| > 1$ becomes imaginary. The corresponding quantity ceases to exist, and speeds, high speeds of light, are displaced into nothingness.

This creates the appearance of a mathematical foundation for Einstein's theory of relativity and misleads the world community and scientific institutions. Although the inadmissibility of such an operation is well known to any middle school student!

Hertz and Heaviside could confine themselves to the right-hand side of Maxwell's equations only by partial derivatives with respect to time, because they were dealing with practically unlimited, homogeneous spaces, free from unevenly distributed and moving paramagnetic bodies. In this case, the partial derivatives with respect to the coordinates were sufficiently small, and the smallness of the velocities of the charges also reduced their influence. Such equations can be used in stationary transformers and other installations that do not have moving magnetized parts.

More often in technology, devices are used in which partial derivatives with respect to time can be neglected rather than coordinates, when the magnetic field as a whole remains stationary, but is associated with magnetic elements of complex shape, along which conductors carrying current move. In this case, the full derivatives of the magnetic induction and electric field strength must be preserved in Maxwell's equations. In practice, this is observed in all industrial calculations for high current technology.

However, the use of Maxwell's formulas in their natural form is rather difficult. A significant simplification can be achieved only under stationary conditions, when the partial time derivative of the magnetic induction in formula (14) can be equated to zero. In this case, one should choose a coordinate system in which the *Oz* axis coincides with the direction of the field lines of force, and the vector of the relative motion of the charges lies in the plane *OXY*. Then we get: $c_x = c$, $c_y = c_z = 0$, $v_x = v\cos\varphi$, $v_y = v\sin\varphi$ and $v_z = 0$. 3 here through φ the angle between the vectors *c and v*.

In this case, the calculation of the speed of light relative to any coordinate system will be reduced to one equality, derived more simply earlier (5):

$$c' = \sqrt{(c_x - v_x)^2 - (c_y - v_y)^2} = c\sqrt{1 - 2\beta\cos(\varphi) + \beta^2}$$

The directional angle Ψ between the resulting velocity c' and the initial c can be found according to the usual trigonometric ratio:

$$\sin(\Psi) = \frac{v}{c'}\sin(\varphi) \approx \beta\sin(\varphi) \qquad (22)$$

Practical verification of the formulas given was shown by S. A. Bazilevsky in his earlier works on the analysis of the results of seventeen series of dissimilar experiments and observations. They also included such major works as measurements of the speed of the solar and radio beams in interplanetary space, performed by A.M.Bonch-Bruevich and V.A.Molchanov (1727 measurements), as well as the processing of radar observations of Venus by B.G. Wallace (1961 measurement). When compared with empirical data, the

results of calculations using classical formulas have always turned out to be more accurate than those calculated using Einstein's formulas. Especially characteristic in this respect is the diagram placed by BG Wallace in his article [17]. It shows that the results of radar observations of Venus, processed according to Newton's laws, and calculations made according to his own theoretical formulas, ideally coincide. At the same time, similar operations performed by Einstein's methods give discrepancies 170 times greater than the possible error of observations and calculations! The practice of the 20th century has shown quite clearly and indisputably that Einstein's second postulate contradicts reality, that it must be rejected and forgotten. And in this case, the existence of Einstein's whole theory of relativity is impossible.

The combined influence of Galileo's principle of relativity, Newton's theory, the fundamental laws of analytic geometry, Maxwell's equations, and all experiments carried out at different times and by different persons created a system of proofs that turned the theory of relativity of classical physics into a completely indestructible fortress.

Thus, the mistakes that Lorentz, Poincaré and Einstein suspected of classical physics turned out to be mistakes of their own thinking and the result of a misinterpretation of the first experiments in the new area of ultrahigh speeds and energies. Our task is to correct these errors and their consequences.

This work, fortunately, will not be too burdensome, since the errors introduced by Einstein's theory of relativity, in the overwhelming majority of practically interesting cases, do not exceed thousandths of a percent. You don't need to fix them. But a return to classical physics is necessary in new works, which will increase the accuracy and credibility of their results.

LITERATURE

1. Gerneck F. Albert Einstein. M., Mir, 1979, p. 112.
2. Vavilov SI Collection of Op. M., ed. USSR Academy of Sciences, 1956, vol. 4, p. 61.
3. Einstein A. Collected scientific works. M., Nauka, 1965, vol. 1, p. 7.
4. Khvolson OD The principle of relativity. SPb, 1914, p. 8.
5. Mandelstam LI Lectures on optics, theory of relativity and quantum mechanics. M., Science, 1972, p. 134.
6. Newton I. Mathematical principles of natural philosophy. In the book: Collected Works of Academician A. N. Krylov. M.-L., ed. USSR Academy of Sciences, 1936, vol. 7.
7. Ugarov VA Special theory of relativity. M., Science, 1969.
8. Bowler M. Gravitation and Relativity. M., Mir, 1979, p. 16.
9. Maxwell DK Selected works of the electromagnetic field. M, Gostekhizdat,

1954, p. 486.
10. Purcell E. Berkeley course of physics. M., Nauka, 1975, vol. 2, p. 245.
11. Feynman R. Feynman lectures on physics. Book. 2, M., Mir. 1965, p. 7.
12. Frisch S. É. And Timoreva A. V. Course of General Physics, vol. 2, Moscow, Izd. technical-theoretician lit., 1957.
13. Karjakin NI, Bystrov KN, Kireev PS A short guide to physics. M., Higher School, 1964, p. 230.
14. Livanova A. Physics about physicists. M., Young Guard, 1968, p. 43.
15. H. Hertz. Uber die Beziehungen zwischen ben Maxwellschen electro-dynamischen Grundgleichungen und den Grundgleichungen der gegnerischen Electrodynamik. Ann Phys., 1884, Bd. 25, s. 84-103.
16. O. Heaviside. Electrical Papers. L., 1892, vol. 1, p. 429-451.
17. B. G. Wallace, Spectroscopy Letters, 1969, 2 (12), p. 361-367.

Appendix 2

APPEAL
participants of the 2nd International Conference
"Problems of space and time in natural science"
to scientists and educators

September 16–21, 1991, St. Petersburg, USSR

The technical revolution of the 20th century has infinitely expanded the experimental basis of science, which always creates a powerful impetus for the progress of fundamental research. However, the spread of relativistic mechanics (special theory of relativity) contributed to a distorted interpretation of the results of many studies and slowed down the development of classical directions in astronomy and celestial mechanics, geophysics and cosmology, quantum mechanics and electrodynamics. The dominance of relativistic authorities has had a detrimental effect on philosophy and the moral state of the scientific community.

The prohibition or suppression of publications that contradict Einstein's teachings have brought modern theoretical physics and astrophysics into a state of crisis. The reports of the conference participants demonstrated the inconsistency of the postulates of the theory of relativity and the absence of convincing experimental confirmation of this theory.

We propose to give up teaching the theory of relativity in secondary school, devoting the free hours to history and substantiating the methods of classical mechanics and physics. We propose to accompany the teaching of the theory of relativity in higher educational institutions with criticism and presentation of alternative approaches.

We encourage researchers to focus their efforts on the development of theories based on classical principles and in-depth analysis of past experience, to improve

observations and experiments and methods for analyzing their results.

We hope that the rejection of the policy of confrontation of social systems and opposition to military blocs will create a more favorable atmosphere for the development of science and public education and make it impossible to evade scientific discussion under the pretext of keeping state secrets.

Conference participants from the USSR, USA, Canada, Italy, Great Britain, Switzerland, Germany, Brazil, Austria, Finland.

Chairman of the conference organizing committee M. P. Varin

September 20, 1991.

CONTENT

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