

Alternative Interpretation for Light Experiments

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Abstract: The results of scientific experiments are usually evaluated according to their initial intention. Which other hypotheses the experiments support is not included in methodology protocols. Due to the natural specialties of light, which are different from masses/bodies; the results of some light-specific experiments have been reinterpreted.

Keywords: Light Kinematics; Michelson-Morley Exp.; Special Relativity; Light's speed; Methodology.

Introduction

Early approaches to the propagation of light used the ether medium hypothesis, emulating the propagation of sound in air. In the Michelson-Morley (MM) interferometer experiment, the difference in interference fringe depending on the direction could not be detected, so the ether hypothesis could not be proven. Since the light path in the setup is in a short distance, the same experiment was repeated thousands of times by increasing the precision / sensitivity in order to eliminate systematic and humanly errors; but the result did not change. Having adopted the ether hypothesis, Fitzgerald wanted to save/reclaim the ether hypothesis by prophesying that the parallel light paths in the apparatus would shorten by the rate of the earth's relative speed on the universal scale. This possibility or brilliant idea excited many physicists and amateur scientists; In fact, the myth that the person who designed an experiment to support this claim would receive a NOBEL award motivated these people. Lorentz studied the possibility of flexible ether, Lorentz and Poincaré the probability of solid/normal ether, and the change in length and time dimension was associated with the velocity of the object with the Lorentz transformation equations. Einstein, who started his analysis by stating that he accepted Maxwell's proposal for the propagation of light, developed -interestingly- as the special theory of relativity that provides the scientific basis to support the ether hypothesis (the result inference contradicts the initial acceptance). However, Einstein also violated relational integrity -in SR analysis-, light and its source by isolating it from the rest of the universe. By inciting humanity's obsession with mystery through the press and the possibility of "time travel," the theory became famous around the world, with the conviction that some elusive mystery of nature had been solved. A finding (that surpassed human mental performance) was considered as a miracle; idolized and consecrated again in its centennial year.

Applying perfect objectivity or atomic refinement to scientific analysis:

British mathematician and philosopher Bertrand Russell declared in an interview¹ that he defines himself scientific attitude in terms of "atomically precision". This quest for sensitivity draws attention to the need to address the expansions of the information and concepts used in the analysis in such a way that they cannot be divided into smaller parts/details. The most obvious example of this is the superficial use the Galilean relativity principle (uniform motion

¹ <https://www.youtube.com/watch?v=5IEYW5wuk3Y> (5.55/13.06 sec)

for inertial frame) in the SR. Because this principle is valid between objects, that is, between massed objects; there is a first velocity acquisition / transfer by mass means. Light or photon this principle does not apply for light. In the theory SR, the Galilean relativity principle was directly included as a postulate without examining the essence of principle. However in General relativity (GR) theory, If the elevator cabinet was moving by a fixed speed, the same GR theory's mentality would require the photon path to be diagonal line this time. If the Galilean relativity principle was considered in this constant speed (non-accelerated) cabinet experiment, the elevator cabinet would act as an inertial frame and the photon path in question would scan its horizontal path (Discussion 4). There is a similar situation in the special theory of relativity: for the photon emitting for the perpendicular direction to the x-axis, "ineffectiveness" was declared due to projection² [1]. Since the cabin is used as a reference in this mental experiment -and the photon's starting point and destination are combined with the complementarity of the mind - the photon's path is thought to be bent; whereas in the cabinet experiment, the photon directed by a perforated plate has no choice but to go horizontal [2]. Since the gravitational lens is a real natural phenomenon, it seems that the acceleration correlation is not accurate and the gravitational force is a sufficient factor (Swartzchild radius mentality predicts this).

In the Michelson-Morley experiment, the experimenters divide the subject photon packet into two with a semi-permeable mirrored device and bring them together after circulating them in different paths between the mirrors. However, they could not overcome the opinion that the photon packet halves that met on the interference screen were parts of the photon packet emitted at the same time. They had the opinion that these photon packets would traverse their ways of different lengths at $c \pm v$ speed due to the mirrored setup, so the number of interference fringes would change depending on the direction (ether mentality). However, the interference fringes did not change at all in the experiments. The prejudice that halves of the initial photon packet reached the interference screen was not questioned, like a dogma. However, in order for the interference to be monitored, the light source in the experiment had to emit light continuously, so it is not certain that the photon packet halves that finished the experiment belonged to the single photon packet that was emitted at the same time. Probably half of the photon packets emitted at moments T_1 and T_2 reach the interference screen. The reason for the $T_1 \neq T_2$ difference is the instantaneous universal V_{Earth} velocity in the outer space of the experimental environment.

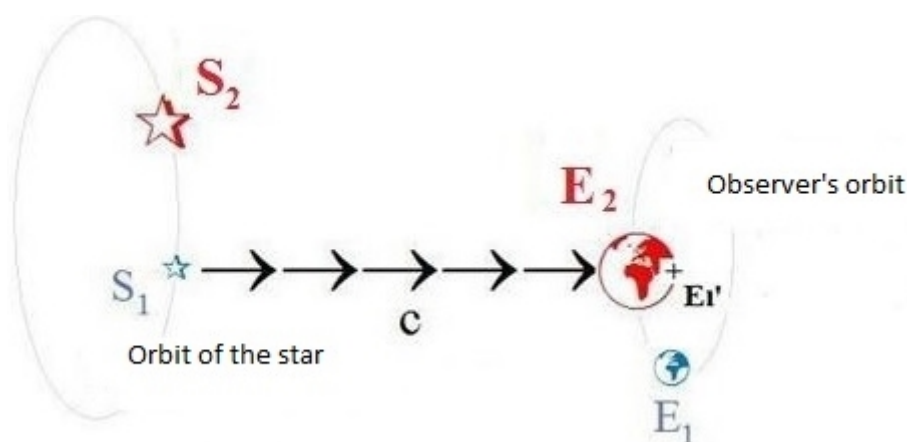


Figure-1 A photon has been arrived to an eye by the speed c .

² If there are problems in the interpretation of experiments, there will be problems in mental experiments.

At the time of T_1 , a photon be emitted in the x-axis/apses direction , when the earth is in the E_1 position and the star is in the S_1 position. At the moment of T_2 , when the world and this photon reach to the E_2 point, eye perception takes place. At the moment of T_2 , the star went to the point S_2 . The photon in question traveled the distance S_1E_2 with speed c . The distance between the star and the observer at the time of T_1 was S_1E_1 . If we consider the analysis entirely on the x-axis, the distance S_1E_1' was actually traveled jointly with the velocity $c + V_{\text{world(projection)}}$. When the perception of an observer or a sensing device is used as a determinant in the experiment, the distance E_1 to E_2 is out of operation/analysis, and the human mind may not be able to clarify the event unless it analyzes it by drawing a figure. The analyzing of Figure-1 proves that every photon has no choice but to come to the eye with speed c . That is, MM experiment actually proves this. The MM experiment is an effective example of "it can prove other hypotheses besides the initial hypothesis". Photon packet halves reaching the interference screen are halves of photon packets emitted at different moments. This option is also available. If this option had come to mind, the MM experiment would not have needed to be repeated thousands of times.

As in the MM experiment, there is a possibility that the result of the experiment supports another hypothesis in the measurement of the speed of light in a similar format.

After Romer, measurements of the speed of light were arranged with a rotating cog/mirror (round-trip) and continuous photon flowing. At that time, the ether hypothesis was on the agenda, and those measuring the speed of light expected to determine the value of $c \pm V_{\text{earth}}$. So the initial intention was to determine the relative speed or rate of change of the distance between the light source and the photon. The result was labeled and used in line with the initial intention; it was a humane attitude; was not criticized. In addition, the measurement process had an experimental reputation. Already in mechanics, the knowledge that every speed measured in physical phenomena and events is relative to the measurement environment (the first reference frame) was settled in the minds; there was not a problem. The speed of light detected with this spontaneity was defined as the "speed away from the source" and was not examined/discussed. Mass interaction/transfer is required to label and use a velocity in its relative definition; but this requirement was neglected and the concept of relativity was ascribed to light. As a result, although it is accepted that light is not affected by the speed of its source, the outside observer's perception that the perception "as if the photon continues to move by adding the source's speed" in the moments after it is released- should cause to confuse. A contradictory situation has been accepted and still is³. Whereas, after a camera flash is fired, while the emitted photon packet moves in the $+x$ direction, the passive/dead flash can be moved to the $-x$ or every direction (the possibility of the flash moving in the opposite direction in a spacecraft and at high speeds is also a natural fact). In this case, the distance between the light and the emitted photon packet grows with the value of $c + V_{\text{flash}}$ (but if it is measured with the current mirrored experiment, the value of c will be found again⁴). When we think about it on this axis, we arrive at the option that "with the mirrored/uninterrupted light measurement experiment can be measured only the relative speed of light with respect to space". This option is not a dry claim: We can find that supporting factors are readily available: The speed of light measurements are direction-independent (isotropic). The current measurement method is light-

³ According to the LCS method: If the point of photon emission is marked in free space (possible on paper), the photon moves away from that point with speed c ; the source has passed that point at the moment of emission and has continued on its way (figure-1).

⁴ Because, the mirrored system can only measure the speed of light relative to the vacuum /LCS.

specific; It is not used to measure the speed of another object. It is a systematic error originating from human mental performance. Experimenters and interpreters had directly used the result as the speed of a mass/body. Not every speed measurement has to be locally relative; for example, the light-specific method can measure the speed of light relative to the outermost reference frame (space); cannot measure the speed of moving away from the source.

The assumption that the speed at which light moves away from the local medium is measured is the secret postulate of the special theory of relativity that has never been mentioned. The proposed new opening to the content of this initial presupposition threatens the special theory of relativity fundamentally. The superficial view of the special theory of relativity is not limited to these. After 1929, the hierarchical order of reference frames became more evident. Microframes, satellite, planet, star system, galaxy, galaxy groups, supercluster, universe, multiverse and all-encompassing outer space. Einstein reinforced his belief that the measurement would give a result of c in all these reference frames, saying, "The laws of physics are the same everywhere in the universe." However, this principle is valid in the sense that "the current mirrored measurement device measures the universal speed of light (relative speed according to macro reference frame; it is space or LCS) as c everywhere in the universe". The majority neglects the nuance.

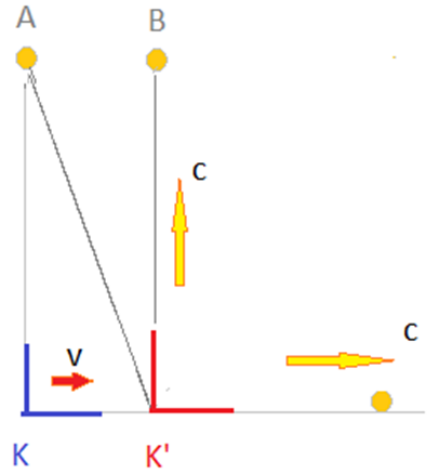
Discussion

1- In the first text of the special theory of relativity, its name is "Electrodynamics of a moving body". Research main axis should be defined accurately according to the relational integrity rules; According to this principle, the name and main axis of the special theory of relativity should be "light kinematics". Light kinematics requires ten main factors; SR used two and a half postula.

2- This study/analysis assigns the first and last reference frame of light as the space (in practical application it is "Light coordinate system: LCS"). The space is not a tangible reference; however, surface of a sheet of paper is functional for analysis.

3- Definition of the measured speed of light as relative to outer space rather than local environment or source/observer leaves special and general relativity theories without scientific basis.

4- SR arranged the analysis while both source and photon go to direction $+x$ and it claimed that the distance (between the source and the photon at time T_2) will be scan with the speed c . If this mentality is considered for a perpendicular photon's path (Figure-2); it will be K'A way (but K'A path requires unit deformation by SR mentality), Einstein preferred the K'B way for perpendicular photon; because K'B way is ineffective because of projection. That is, he considered Galilei relativity principle for inertial frame. However in GR analysis this principle has been neglected.



Şekil-2 Hangisi dik giden fotonun izleği K'A ; K'B ?

5- Each of the celestial objects -we see simultaneously in the night sky frame- is at its previous position and age equal to the amount of time it takes for their distance to scan their distance to us with the speed of light. We cannot see anything simultaneously. The sky painting is a magnificent illusion. The reason of illusion is due to the fact that the speed of light has limited value. This known fact is consistent with the alternative hypothesis of the MM experiment.

6- The special theory of relativity does not allow for cosmological analysis, because SR claims the time tempos of the celestial bodies will work differently due to their own speed. On the other hand, in science it is more valuable to propose an alternative/functional method, instead of the exposing the flaws of a theory. The LCS method [3] presents the possibility of multifactorial, multidimensional, detailed cosmological analysis. The compatible analysis with observational data was generated [4] [5]. The age of the universe obtained by this method is 19.28 billion years.

Conclusion

It is shown that the Michelson Morley interference experiment actually proves that photons emitted at all different times reach the eye or the detector with the same velocity c . The postulates of the special theory of relativity were shown - on closer examination - to be incorrect. The theory SR claims that the photon's path, which it has not yet traveled, will shorten - or numerically grow - due to the speed of the source from which it originated, and that the tempo of time will slow down [6]. This claim, which is contrary to natural reality and the principle of causality, has stalled humanity for more than a hundred years, and cosmological analyses have been hampered by the belief in nonsimultaneity. Guided by the signal of incompatibility, the LCS method was developed instead of the theory and cosmological analysis became possible.

Some natural phenomena and events can challenge human mental performance. First approaches can often be inaccurate due to missing factors. The complementarity and shortcutting (shortcut/superficial view) attitude of the human mind mentioned in psychology and neurology literature is also effective. It can also be said that mental references are randomly considered on the axis of reward-oriented. There is a need for disciplined and efficient management of mental references, especially in scientific research and in all areas of life, with

the care of perfect objectivity, and the intervention of consciousness/awareness should be developed.

Copernicus and Galilei provided an explanation for the rotation of the earth around the sun; humanity has comprehended that visual illusion is caused by the axial rotation of the earth, and that looking at the actual reference object from a relative position causes misleading perception. Nevertheless, some theories, especially the theories of special and general relativity, continued to analyze universal phenomena from a local (Earth centric) perspective. The necessity of assigning the reference role to light, which is the universal reality, in the light-object relationship has been made clear by this study. Relativity theories will be remembered in the history of science as the second Galilei event.

References

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