

A DISCUSSION ABOUT CONTINUITY OF RELATIVITY (The Achilles' heel of STR¹)

Özgen Ersan

zgnrsn@gmail.com

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Abstract: Karl Popper had written: "Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavor to make the mesh ever finer and finer". When we apply a mental method like micro-surgery, we may distinguish the momentary relativity in some natural events on mechanics and light kinematics. If a momentary relativity is considered like continuous relativity; this improper/superficial presupposing can cause to improve a theory (Special Relativity). And we human may waste time on fantasy inferences and their ad-hoc supports.

Key words: Special Relativity, momentary relativity, postulate revision, ad-hoc.

Introduction

The repositioning is defined by four dimensions (x, y, z, t). The power (or energy), mass, the reference frame of motion, speeds; accelerating etc. are other components of definition. The motion of an object is realized by pushing itself, jump also by being pushed, be thrown and by gravity and reaction force etc. The relativistic speed quality of these options must be discussed / queried seriously. There may be some nuances; we cannot label all of them as "relative value" or we must distinguish the master reference frame for relativity concept.

Theoretical analysis

While a vehicle is moving on the road, it pushes the road or the mass of the Earth by frictional power transmission; its speed is a value according to the road or Earth. The label or the mean "genuine relativity" will be kept if the relation (between power applying and the mass of the Earth) continues. The continuity of the interaction of power-mass has critical importance for the relative value of a speed according to the reference frame (that is the mass which force is applied). Otherwise, if an experimenter throws a piece of stone; the throwing force is momentary / instant. The function and action of the power is ended after throwing. On this situation, what does the concept of relativity happen? The speed of stone has a relative value according to the Earth or local place. But, it is not claimed anymore that the relativity's permanency according to the person who had thrown it (except a standing man); because, he gets a role as a tool and he can go towards anywhere after the moment of throwing. On a moment of following time, the equation " $L = V_{\text{stone}} (T_1 - T_0)$ " for the distance (between the stone and him) does not represent the reality; but this formula is valid for the throwing point (where is marked on the Earth). Unfortunately, STR claims and uses this equation for the distance between the source and its photon. The master reference frame (or ratio authority) for the relative speed of the stone is the throwing point on the local ground. The surface of the earth is a co-reference frame for the stone and the experimenter. Although the experimenter caused its movement, he may not be a reference frame for the stone's relative speed.

¹ STR : Special Theory of Relativity

Another similar sample: In a football game, the player can follow the ball after shooting; or usually, he goes towards his new position. The speed of the ball has actually a relative value according to shooting point on the ground and at the moments of following time the distance between this point and the ball is calculated by the relation $L = V_{\text{Ball}} (T_1 - T_0)$. This analysis contains easiness; because we have a co-reference frame (stadium's ground). But if we isolate the player and the ball from everything and we set a relativity analysis with only these operation actors (that is exactly STR concept) this equation [$L_{(\text{player-ball})} = V_{\text{Ball}} (T_1 - T_0)$] and results of following analyses will require time dilation and length contraction on the football game. The cursoriness on determining the master reference frame (or the rate authority) can cause a fantasy theory like STR.

STR considers only the light and its source, and isolates them from everything (so, it does not allow another/ or outer co-reference frames). Lorentz's concept added an outer frame too; but, he considers the new positions of the source on this frame as a point that the light always escapes by the value "c" from the point.

It does not require applying a force for the radiation or travel of the light. The photons are emitted by a source of energy and radiate. The light moves by electro-magnetic cycles of energy and its velocity is actually the speed of the cycles (Maxwell's definition). To consider the light as a mass/body and to attribute the relativity for the light source and to suppose the continuous form of relativity may be a first approach by a net which its meshes are large. But, we perceive that even in mechanics the relativity (which has not continuity) may be possible; or some mistakes may be possible about assigning the master reference frame for relative speeds. The relation of relativity for the light and its source can make transparent by the analogy of "lake surface" [1].

Discussion

There are many experiments and articles that support the STR. Similarly, there were powerful and visual evidences for the dogmatic opinion "The sun turns around the earth". Sometimes, the majority determination may be inadequate to verify a thesis. The result of an experiment can support another thesis except its preliminary intention. If we do not distinguish/consider this probability; the science may allow for new fantasy theories. So, if the first thesis is not precise; following verifying will be code by the ad-hoc concept. For example, Phlogiston thesis is an ad-hoc and it was accredited until the discovering oxidation. Similarly, the Fitzgerald contraction is an ad-hoc no more.

Otherwise, the interpretation of experiment Michelson-Morley have a mistake; because the light is used by continuity form and the photons (which had come to interferometer screen) may not be always the halves of same light pulse. Probably, one of them emits on the moment T_i ; and the other emits on the moment T_{ii} . But in this case, the amount of interference fringes does not change; because every light pulse always arrives to a receptor by the speed value "c" [1] (in accordance with the examining on figure 2; all results of the M-M experiment will be find same inevitably). If this experiment can be repeated on LCS; it will give same result again.

The light is used on continuous form in its specific measuring experiments for the velocity of light (although by perforated wheel) and the experiment has a problem: the experimenter assumes that the starting and finishing moments of the motion had been determined by a unique photon; whereas, it is possible that these moments can be defined due to two different light pulses. While the starting moment of measuring detect due to the x numbered photon, the finish moment of measuring may be detect due to the y numbered photon. Anybody does not guarantee that the main actor of measuring experiment is a unique photon (It is possible $x < y$ and $x > y$; the probability of $x = y$ is possible too; but only if the measurement is organized on LCS: Light coordinate system or most external reference frame). This probability is higher than Fitzgerald contraction and time dilation. If it is wanted to measure the indirect/nominal relative speed of light according to local place, the light must be provided a single pulse by high quality (e.g. Kerr) obstructer; the path of the light must be a single way (like trajectory); the starting and finishing moments of the measurement must be detected by analog cinema technology (with the first points of line of light on filmstrip); remote requirements must be solved by cable connections (that their length must be equal and with single button); and highest precision must be supplied.

Conclusion

The genuine relativity can be in forms momentary and continuity; even, in mechanics. In light kinematics/special relativity, the partnership of light pulse and its source is ended after the emitting moment; the concept of “genuine relativity (according to its source)” is not essential for the velocity of light pulse² and the distance between the source and its light pulse never be calculated by the formula $L = c (T_i - T_0)$. The entity of light source is not an accurate marker for the starting point of the motion of a photon. This formula is valid if the starting point is marked on the LCS (like the relation for a moving ball and ground). To mark (the beginning point of the motion) on proper reference frame has critical/key importance for the analyses of light kinematics.

STR had pointed to the importance the four dimensions for light kinematics by adding the time parameter into analysis. Indeed, to consider more dimensions/conditions must be preferred; especially for universal scale. We used this advice better than Einstein. Also we considered Karl Popper’s principles [2]. Intrinsically, effective, authorized, ascendant, -even- be forced, highest quality logic is essential to discovery genuine reality instead of simple logic or first approaching (that, the light and energy are genuine universal realities that have difficult qualities). The simple logic is valuable too (because of occultism); but it may be inadequate (or in asymmetric status) against the complexity of nature; eventually it could not distinguish/define first hand relativity and nominal relativity.

We humanity have experienced high admiration due to STR; because the STR had solved a secret of nature; human’s cognitive performance could successfully discover the complexity of magnificent nature and we had quite catharsis accompanied with mental narcissism and advancement. STR opened new windows to our imagination; and gave bright arguments like “time travel” to feed our mystic curiosity. We thank to Einstein for all of them. But the science must overcome STR concept and these spiritual efficacies. Precise objectivity may send the STR to an honorable page of the science history. STR will be remembered with its important leaderships (e.g. the breaking the restrictions of inductive methods or allowing / leading to the locomotive role of deduction).

References

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² We can already measure the universal velocity of light according to LCS; known device/experiment cannot measure the relative speed according to its source.