

Have we Misinterpreted Special Relativity?

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Abstract

Einstein's 1905 formulation of special relativity may in actuality describe a complex relationship between the proper time of the observer and the proper time of an object with relative velocity. If $y = (1 - x^2)^{0.5}$ is a complex number even when $x < 1$ does it not follow that $t' = t(1 - v^2 / c^2)^{0.5}$ is a dependent relationship between t' and t . This requires us, in the name of diligence, to examine the possibility that no energy is contained by quanta between their transmission and their action, because the proper time interval for the transmission itself, between its emission and its absorption, varies with perspective and falls to zero at the velocity of light.

If the equation $t' = t(1 - v^2 / c^2)^{0.5}$ is a complex number, where t is the proper time of the observer and t' is the proper time of an object with relative velocity v / c to the observer, then it is possible that we have misinterpreted Einstein's original formulation of special relativity which may describe a complex relationship between the proper time of an observer and the proper time of an object in relative motion.

Maybe we should look again at our interpretation of fields, photons and the action of forces with respect to the possibility that no energy is contained between transmission and action because the time interval between transmission and action varies with perspective and falls to zero at the velocity of light. Something which has no duration in time from its own perspective cannot independently exist. It is proposed that quanta are no more than a direct connection between separate masses, discrete kinetic energy transfers between atoms directly transmitting energy and momentum.

It is also proposed that force may be continuously transmitted by the attraction and repulsion between all charges with no energy existing outside of the interacting masses. It may be possible to understand photons simply as quanta and it may be necessary to consider continuous force interaction between charges as direct force interaction not mediated by quanta. Such force interactions could then account for inertia, gravity and electrical action.

The rate of proper time for any coherent mass is fixed by the rates of chemical and inertial change for that mass. We may employ that well proven understanding along with a definition of separation for electromagnetic action ct as proportional to the velocity of that electromagnetic action where t varies with the perspective of the observer. The jerk upon a charge or charges and the influence of that change upon all other charges then constitute a universal event. Care must be taken interpreting these relations because the change in relative proper time of the transmitter may differ from the change in the proper time of the charges or mass acted upon.

An immediate objection will be made that electromagnetic influence from within atoms is neutral over large separations but that assessment should not rely upon assumptions or geometric simplifications. The assumptions requiring re-assessment include; the assumption that all non gravitational interaction is mediated by quanta and the assumption that gravity has a separate mechanism of action to electromagnetic force.

Our assumption of isolation from the remote universe due to separation by distance may also be incorrect if distance is relative to the velocity of transmission. Should this be the case then a method of propulsion such as that proposed by Roger Shawyer of SPR Pty Ltd may be possible because the difference in reflection delay between the two ends of its frustum would have an inertial influence on the remote universe.

References:

- Albert Einstein, 'Zur Elektrodynamik bewegter Körper' 1905.
- Albert Einstein, 'Relativity: The Special and General Theory' 1916, Appendix 5 added 1954.
- 'Feynman's Lectures on Physics' II 1963.