Special Relativity Repudiated

Rasjid Chan Kah Chew, Singapore, chanrasjid@gmail.com

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1 Abstract

A perfectly symmetrical twin paradox real scenario could be identified and this repudiates Einstein's Theory of Special Relativity.

2 Special Relativity

To be clear as to what the Special Theory of Relativity is, we will set out clearly the form of the theory that is assumed for this article based only on two postulates:

> Principle of relativity: The laws of physics have the same mathematical forms in an inertial reference frame.
>
> Constancy of the speed of light: The speed of light in free space is a constant in an inertial reference frame.

From the above two postulates, time dilation is derived as an integral aspect of the theory:

> Two inertial clocks with a uniform relative motion will each experience time dilation when referred to from the reference frame of the other clock.

3 The Symmetric Twin Paradox

A space station in outer space, far from all other influences, has two identical spaceships on it. The station and the spaceships have ideal navigational ability and it is stabilized to have no rotation with respect to the fixed stars. With the propulsion system shut down, the station is an inertial frame that may be considered at rest with respect to the fixed stars. The two spaceships starts on an outward journey away from each other along a straight line path and, after a fixed elapsed time on their clock, do a u-turn and head back along the same straight path and towards the station again. Perfect navigation would ensure that the two spaceships have a perfectly symmetrical journey; first the

acceleration away, then the uniform coasting speed and finally the u-turn back to the same straight path coasting again at a uniform speed. The spaceships do not decelerate to meet at the station at rest, but rather fly past each other above the station.

4 Special Relativity gives rise to an inconsistency

Let the two clocks be called A and B. The perfect symmetry of the journey ensures that A and B are synchronized at all time. At flypast above the space station, they read the same.

No we only consider the the part of the journey when the clocks begin their journey at uniform speed towards the station and fly past each other. This is the classical case of Special Relativity - two inertial reference frames that move uniformly towards each other along a straight line. Now the purpose of the earlier symmetry is to synchronize the clocks so that they read the same when they start this part of the journey.

At the start A has knowledge of what B reads and vice versa - they read the same. Now A predicts what clock B would be when they fly past at the station according to Special Relativity - clock B would run slower; so clock B $<$ clock A at flypast. On the other hand, B would predict clock A $<$ clock B at flypast. So Special Relativity gives rise to a logical inconsistency - clock B $<$ clock A and clock A $<$ clock B.

5 Special Relativity is repudiated

The methodology in judging whether a scientific theory is valid is, firstly, that the theory be free of any logical inconsistency - this is the central tenet of the scientific method; it comes before the need to test a theory against the real world. Any scientifically acceptable physical situation for which the theory apply and that leads to an inconsistency unequivocally repudiates the theory.

It should be mentioned that though this twin paradox seems like a thought experiment, it is more; given the technology, it clearly could be carried out as a space science project.

But how should this inconsistency be seen? It is a fundamental flaw that cannot be accepted. Time in physics is undefined and has no special interpretation; it is what a clock reads - nothing more nor less. If a value for a time variable need to be determined, it can only come from a clock directly or indirectly. Special Relativity now leads to a logical inconsistency in clock readings in a technically reproducible situation:

Special Relativity is unequivocally repudiated.

This would hold irrespective of any empirical evidence that are found to be in indisputable agreement with the predictions of the theory. The proper philosophical view here should be that any prediction of an invalid theory is also invalid and should not be considered.

6 Conclusion

The thesis here shows that Einstein's Theory of Special Relativity is unequivocally repudiated. A new spacetime replacement theory is now needed as if we have again come back to the year 1887 when the Michelson-Morley experiment was done.

If Einstein's General Theory of Relativity is also based on Special Relativity, then General Relativity too will be unequivocally repudiated as, then, it would have been derived based on invalid assumptions or principles.