# **Disproof of Special Relativity Theory and Lorentz Transformation**

Henok Tadesse Email: entkidmt@yahoo.com

01 June 2025

### Abstract

If Special Relativity is a correct theory of the speed of light, then it should reduce to classical models for non-relativistic speeds. In this paper, we reveal a glaring error in the prediction of the Special Relativity Theory (SRT) and Lorentz Transformation (LT). A 'stationary' light source emits a short light pulse at time t = 0, at which instant an observer/detector is at distance D from the source and moving away from the source with velocity v. For non-relativistic velocities, the time of detection of the light by the observer/detector is equal both in the reference frame of the light source and in the reference frame of the moving observer/detector. Using strict application of Lorentz transformations, we will show that SRT makes inconsistent predictions in the two reference frames.

## Introduction

One of the many confusions and controversies with regard to the Special Relativity Theory (SRT) concerns the constancy (or non-constancy) of the speed of light and the time of detection of a light pulse relative to a moving observer/detector, such as in the Global Positioning System. Although many researchers are increasingly questioning the Special Theory of Relativity and are trying to point out its logical contradictions, its decisive disproof remains to be extremely elusive. In this paper, we present such decisive disproof which has eluded researchers and physicists for more than a century.

## **Disproof of Special Relativity Theory**

In this paper, we present a disproof of special relativity theory by using a simple thought experiment of a light source and a moving observer. S is the reference frame of the light source and S' is the reference frame of the moving observer/detector.

Suppose that at time t = t' = 0, the origins (O and O') of the two reference frames coincide. The light source is fixed at the origin of reference frame S and the observer/detector A is fixed at the position x' = D in reference frame S'.

The light source emits a short light pulse at t = t' = 0. According to SRT, the speed of light is constant *c* in the moving reference frame S'. Therefore, the light will be detected in frame S' at:

$$x' = D$$
 and  $t' = \frac{D}{c}$  .... (1)

Electrical engineer, BSc, Debrezeit, Ethiopia, Mobile:+251 910 75 13 39 Alternate email: wchmar@gmail.com



To determine the space and time coordinates of the event of light detection in frame S, we use Inverse Lorentz Transformations:

$$t = \gamma \left( t' + \frac{v x'}{c^2} \right)$$
$$x = \gamma \left( x' + vt' \right)$$

Therefore, the time coordinate of the event of light detection in frame S will be:

$$t = \gamma \left( t' + \frac{v x'}{c^2} \right) = \gamma \left( \frac{D}{c} + \frac{v D}{c^2} \right) = \gamma \frac{D}{c} \left( 1 + \frac{v}{c} \right)$$

For non-relativistic speeds,

$$\gamma \approx 1$$

Therefore, the time coordinate of the event of light detection in frame S will be:

$$t = \gamma \frac{D}{c} \left( 1 + \frac{v}{c} \right) \approx \frac{D}{c} \left( 1 + \frac{v}{c} \right) \quad . \quad . \quad . \quad (2)$$

Therefore, the time of light emission in both reference frames is t = t' = 0. However, the time of light detection in the reference frame of the light source is different from the time of detection in the reference frame of the observer. That is,

$$\frac{D}{c} \neq \frac{D}{c} \left( 1 + \frac{v}{c} \right)$$

This disproves Special Relativity Theory (SRT) and Lorentz Transformation (LT) because, if SRT was a correct theory of the speed of light, it would reduce to classical models at non-relativistic speeds which predict the same time in both reference frames.

From experience and experiments, the time in the reference frame of the source and the time in the reference frame of the observer/detector are both equal to:

$$t \approx \frac{D}{c} \left( 1 + \frac{v}{c} \right)$$

## Conclusion

The Special Theory of Relativity is perhaps the most confusing and controversial theory in the history of science. Ever since it was proposed by Albert Einstein in 1905, it has caused endless confusions, paradoxes and debates. Countless articles have been written, proposing logical contradictions in the theory, and yet failed to pinpoint what exactly is wrong with the theory, and therefore only led to more debates rather than settle the issue once and for all. This paper has finally uncovered a decisive disproof of Special Relativity Theory that leaves no room for proponents of the theory. By applying Lorentz Transformation to a simple thought experiment involving a light source and a moving observer, we have been able to show that SRT does not consistently reduce to classical models for non-relativistic speeds.

Glory be to God and His Mother, Our Lady Saint Virgin Mary

Notes and references