

Paradox of Relativity

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Abstract: Relativity's Special and General Theory are not valid theories as constant one-way speed of light postulate is contradictory. This paper gives one page explanation that even a high school student can understand.

Keywords: Relativity, Unified Field Theory, The Alpha Torque, ToE, One-Way Speed of Light

1. Introduction

Relativity's Special and General Theory are based on following constant one-way speed of light postulate:

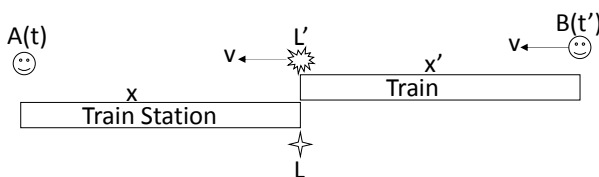
The speed of light in a vacuum is the same for all observers, regardless of their relative motion or of the motion of the source of the light.

This paper studies the above postulate and finds that it makes the heart of Relativity theories' Lorentz Transformation paradoxical.

2. Two Observers and Two Light Sources

The follow is a simplified case for constant one-way speed of light postulate:

There are two persons. One is A on the train station, another is B on a train. There are two light sources, one is a fixed light post L beside the track, another is a fixed light L' at the head of train. The train is moving toward the station at speed of v. The distance of AL (x) and BL' (x') is the same according to measurement readings. When L and L' meets, both lights flash. Both A and B see lights from L and L' at the same time according to their clocks.



2. Lorentz Transformation Paradox

There are two symmetrical cases (e.g. [1]):

- Both A and B see light from L at the same time;
- Both A and B see light from L' at the same time.

Simplified Lorentz transformation (e.g. [2]) for case 1:

$$t' = d(t - xv / c^2) \quad (1)$$

$$x' = d(x - vt) \quad (2)$$

For case 2:

$$t = d(t' - x'v / c^2) \quad (3)$$

$$x = d(x' - vt') \quad (4)$$

Or:

$$t = d(d(t - xv / c^2) - d(x - vt)v / c^2)$$

$$x = d(d(x - vt) - vd(t - xv / c^2))$$

The above equations indicated that two inertial systems are unrelated. The solution is,

$$x = ct$$

$$d = 1$$

$$v=0 \text{ or } v=2c$$

v is less than c, v=2c above is ignored.

It contradicts the assumption that the train is moving.

3. Conclusions

Both Relativity's Special and General Theory use Lorentz transformation to study the relationships between two inertial systems. If constant one-way speed of light postulate is invalid, then, Relativity theories are falsified (e.g. [1], [3]-[6]). The Unified Field Theory (e.g. [7], [8]-[11]) is a good alternative.

References

- [1] Cao, Zhiliang, and Henry Gu Cao. "SR Equations without Constant One-Way Speed of Light." *International Journal of Physics* 1.5 (2013): 106-109. <http://pubs.sciepub.com/ijp/1/5/2/index.html>
- [2] Einstein A. (1916 (translation 1920)), Relativity: The Special and General Theory, New York: H. Holt and Company
- [3] Rasjid Chan Kah Chew. Special Relativity Repudiated, <http://vixra.org/pdf/1202.0020v2.pdf>
- [4] Mohammad Shafiq Khan, "Michelson-Morley Experiment: a Misconceived & Misinterpreted Experiment", <http://vixra.org/pdf/1201.0020v1.pdf>
- [5] Kassir, R.M. "On Lorentz Transformation and Special Relativity: Critical Mathematical Analyses and Findings", viXra.org (2013); <http://vixra.org/abs/1306.0098>
- [6] Kassir, R.M. "On Special Relativity: Root Cause of the Problems with Lorentz Transformation", <http://www.vixra.org/abs/1309.0166>
- [7] Cao, Zhiliang, and Henry Gu Cao. "The Alpha Torque", <https://www.createpace.com/3458701>
- [8] Cao, Zhiliang, and Henry Gu Cao. "Unified Field Theory and the Configuration of Particles." *International Journal of Physics* 1.6 (2013): 151-161. <http://pubs.sciepub.com/ijp/1/6/4/ijp-1-6-4.pdf>
- [9] Cao, Zhiliang and Cao, Henry Gu. "The Alpha Torque", <https://www.createpace.com/3995510>
- [10] Zhiliang Cao, Henry Gu Cao. Unified Field Theory. *American Journal of Modern Physics*. Vol. 2, No. 6, 2013, pp. 292-298. doi: 10.11648/j.ajmp.20130206.14.
- [11] Cao, Zhiliang, and Henry Gu Cao. "Non-Scattering Photon Electron Interaction." *Physics and Materials Chemistry* 1.2 (2013): 9-12. <http://pubs.sciepub.com/pmc/1/2/1/pmc-1-2-1.pdf>