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Transformation Equations for the Fifth Dimension

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Abstract. Scientists have been arguing for a long time if there are particles faster than the speed of light or not. Those who denied the existence of particles faster than light speed always refer to Lorentz equation. This equation deals with particles in only four dimensions. In this paper, we show what would happen if we add one more dimension to this equation to make it deals with five dimensions instead of four. The addition of this fifth dimension will greatly help us understand the state of particles before, near, at, and above the speed of light.

INTRODUCTION

We will quote the following from Einstein's book titled "Relativity: The Special and General Theory", "… The main question for the present is to know if a field theory such as the one which we have considered here can generally lead to some main conclusion. By theory I mean one which describes physical reality (including four-dimension space) in a completely encompassing way …", end quote. [1]. In this paper we are trying to answer Einstein's question and propose the theory that he asked for.

Without going to explain a lot about previous theories since 1927, there was many scientists who have tried to build their own theories that solve new problems in modern physics and cosmology. These theories, although answered some questions that came after the Big Bang theory, they did not answer the critical question about the probability of a particle being able to move with a speed larger than the speed of light, or even what was the speed of the Big Bang.

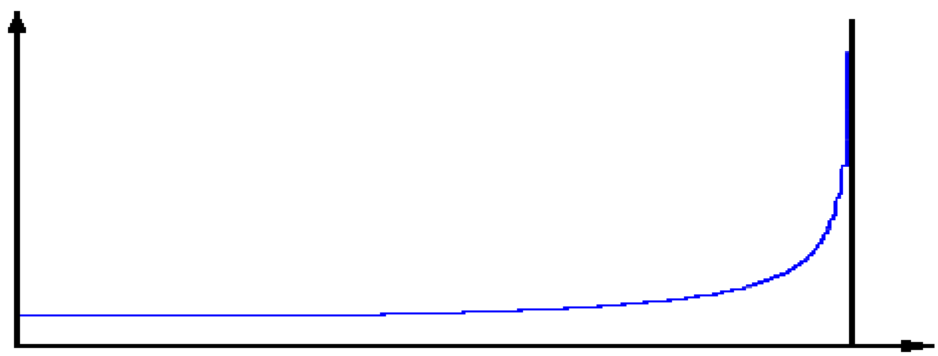

FIGURE 1. Lorentz factor as a function of velocity $v \longrightarrow c$ It starts at value 1 and for It goes to infinity at the same time Photon has speed of C and M does not go to infinity !!! [2]

Fifth Dimension Proven

According to the foundations established by ***Lorentz***, the fourth dimension transformation equation is:
The differential of the fourth dimension over the differential of time is given by:

$$\frac{\mathrm{dT}}{\mathrm{dt}} = \sqrt{1-\frac{v^2}{c^2}} \qquad (1)$$

Where (v) is speed of particle, (c) is speed of light, (T) is fourth dimension and (t) is time.

This is applied to the supposition that the fastest speed will be the speed of light. The quantity under the square root in equation (1) will be positive when (v) is less than (c). How can we explain what happens? When the observer changes with the speed of light or with a faster than speed of light?

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According to the fifth dimension and with the same basic in ***Lorenz*** transformation equation to prove the four dimension and adding my assumption to the fifth dimension = **INV, where I** is$\sqrt{-1}$, **N** is time and **V** is velocity (the fifth dimension).

In the case where the compensation of the fifth dimension is by a real value and the distance is a real value or the compensation of the fifth dimension is by imaginary value and the distance is imaginary value, the equation of transformation then becomes:

The differential of the pure dimension / the differential of time = speed of **light** (2)

The transformation equation for fifth dimension Case 1:

$$X_1 = X, X_2 = Y, X_3 = Z, X_4 = \text{iCT}, X_5 = \text{iNV},$$
$$[\text{where} V \text{isvelocityasfifthdimension}, N \text{isconstant} t \text{time}] i = \sqrt{-1} \text{and} T \text{istime}.$$
$$\text{dS}^2 = \text{dX}^2 + \text{dY}^2 + \text{dZ}^2 - C^2\text{dT}^2 - N^2\text{dV}^2,$$
$$\text{itfollowthat}$$
$$-\text{dS}^2 = C^2\text{dT}^2 + N^2\text{dV}^2 - \text{dR}^2,$$
$$\text{since} S = \text{iNVweobtainthatdS}^2 = -N^2\text{dV}^2 \text{andtthat}$$
$$N^2\text{dV}^2 = C^2\text{dT}^2 + N^2\text{dV}^2 - \text{dR}^2,$$
$$\text{Consequentlyweobtain}$$
$$C^2 = \frac{\text{dR}^2}{\text{dT}^2} = v^2,$$
$$\text{weconcludethat} C = v \text{where} C \text{speedoflight,and} v \text{speedofpartical}$$

2- In the case where the compensation of the fifth dimension is by a real value and the distance is imaginary, the equation of transformation then becomes:

The differential of the fifth dimension over the differential of time is given by:

$$\frac{\text{dV}}{\text{dt}} = \text{K}\sqrt{1 - \frac{v^2}{c^2}} \qquad (3)$$

Where (K) {1: 4.14 x10 $^{-13}$

When K=1, then we are in Lorentz equations, it mean it is special case in general case

The transformation equation for fifth dimension Case 2:

$$X_1 = X, X_2 = Y, X_3 = Z, X_4 = \mathrm{iCT}, X_5 = \mathrm{NV},$$
$$[\mathrm{where}V\mathrm{isvelocityasfifthdimension}, N\mathrm{isconstant}t\mathrm{time}]\, i = \sqrt{-1}\mathrm{and}T\mathrm{istime}$$
$$S^2 = X^2 + Y^2 + Z^2 - C^2T^2 + N^2V^2,$$
$$\mathrm{dS}^2 = \mathrm{dX}^2 + \mathrm{dY}^2 + \mathrm{dZ}^2 - C^2\mathrm{dT}^2 + N^2\mathrm{dV}^2,$$
itfolowthat
$$-\mathrm{dS}^2 = C^2\mathrm{dT}^2 - N^2\mathrm{dV}^2 - \mathrm{dR}^2,$$
since$S = \mathrm{iNV}$weobtainthat
$$\mathrm{dS}^2 = -N^2\mathrm{dV}^2,$$
$$N^2\mathrm{dV}^2 = C^2\mathrm{dT}^2 - N^2\mathrm{dV}^2 - \mathrm{dR}^2,$$
then
$$2N^2\mathrm{dV}^2 = C^2\mathrm{dT}^2 - \mathrm{dR}^2,$$
consequently
$$\mathrm{dV}^2 = \frac{C^2\mathrm{dT}^2 - \mathrm{dR}^2}{2N^2}, \tag{4}$$
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = \frac{C^2\mathrm{dT}^2 - \mathrm{dR}^2}{2N^2\mathrm{dT}^2} = \frac{C^2}{2N^2} - \frac{\mathrm{dR}^2}{2N^2\mathrm{dT}^2},$$
$s$tandardevaluationsgive
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = \frac{C^2}{2N^2}\left[1 - \frac{\mathrm{dR}^2}{C^2\mathrm{dT}^2}\right],$$
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = K^2\left[1 - \frac{v^2}{C^2}\right], \mathrm{where}K = 1 = \frac{C}{\sqrt{2}N}$$
$v$isthespeedof$a$particle.Consequently
$$\frac{\mathrm{dV}}{\mathrm{dT}} = K\sqrt{1 - \frac{v^2}{C^2}}\,\overrightarrow{\mathrm{propervelocity}}$$
$$\mathrm{when} \rightarrow K = 1$$
$$1 = \frac{C}{\sqrt{2}N}$$
$$\mathrm{wehave}N_1 = \frac{C}{\sqrt{2}} = 212132\ \mathrm{KM/SEC}\,\{\mathrm{ChangofPhaise}\} \in$$

The transformation Equation for fifth dimension Case 3:

$$X_1 = X, X_2 = Y, X_3 = Z, X_4 = \mathrm{iCT}, X_5 = \mathrm{iNV},$$
$$[\text{where} V \text{isvelocityasfifthdimension}, N \text{isconstant} t \text{time}] i = \sqrt{-1} \text{and} T \text{istime}$$
$$S^2 = X^2 + Y^2 + Z^2 - C^2T^2 + N^2V^2,$$
$$\mathrm{dS}^2 = \mathrm{dX}^2 + \mathrm{dY}^2 + \mathrm{dZ}^2 - C^2\mathrm{dT}^2 - N^2\mathrm{dV}^2,$$
itfolowthat
$$-\mathrm{dS}^2 = C^2\mathrm{dT}^2 + N^2\mathrm{dV}^2 - \mathrm{dR}^2,$$
since$S = \mathrm{NV}$weobtainthat
$$\mathrm{dS}^2 = N^2\mathrm{dV}^2 \text{andthat},$$
$$-N^2\mathrm{dV}^2 = C^2\mathrm{dT}^2 + N^2\mathrm{dV}^2 - \mathrm{dR}^2,$$
then
$$-2N^2\mathrm{dV}^2 = C^2\mathrm{dT}^2 - \mathrm{dR}^2,$$
Consequently
$$\mathrm{dV}^2 = \frac{\mathrm{dR}^2 - C^2\mathrm{dT}^2}{2N^2}, \qquad (5)$$
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = \frac{\mathrm{dR}^2 - C^2\mathrm{dT}^2}{2N^2\mathrm{dT}^2} = \frac{\mathrm{dR}^2}{2N^2\mathrm{dT}^2} - \frac{C^2}{2N^2},$$
Standardevaluationsgive
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = \frac{C^2}{2N^2}\left[\frac{\mathrm{dR}^2}{C^2\mathrm{dT}^2} - 1\right],$$
$$\frac{\mathrm{dV}^2}{\mathrm{dT}^2} = K^2\left[\frac{v^2}{C^2} - 1\right],$$
Consequently
$$\frac{\mathrm{dV}}{\mathrm{dT}} = K\sqrt{\frac{v^2}{C^2} - 1}$$

Equation (5) is positive when v is greater than C. This is allied to the philosophy that supposes that there are greater speeds than the speed of **light**. As the speed of sound is the threshold of classical speeds, the speed **limit** is the threshold of speeds in our world. This does not mean that the other theories are erroneous but that for each theory there is a speed valid. (We can equally say that ***Newton's*** laws can be verified in the domain where immobility speed and the speed of sound and Euclidean space can be found. The laws of **relativit*y*** can be verified when speed is between the speed of sound, and the speed of **The LIMIT** in a non- Euclidean space).

If possible existence of faster speeds than the speed of light.[3],[4]. The right idea in the situation is if we consider relativity as a special case inside the general case as fifth dimension theory in future as diagram showing.

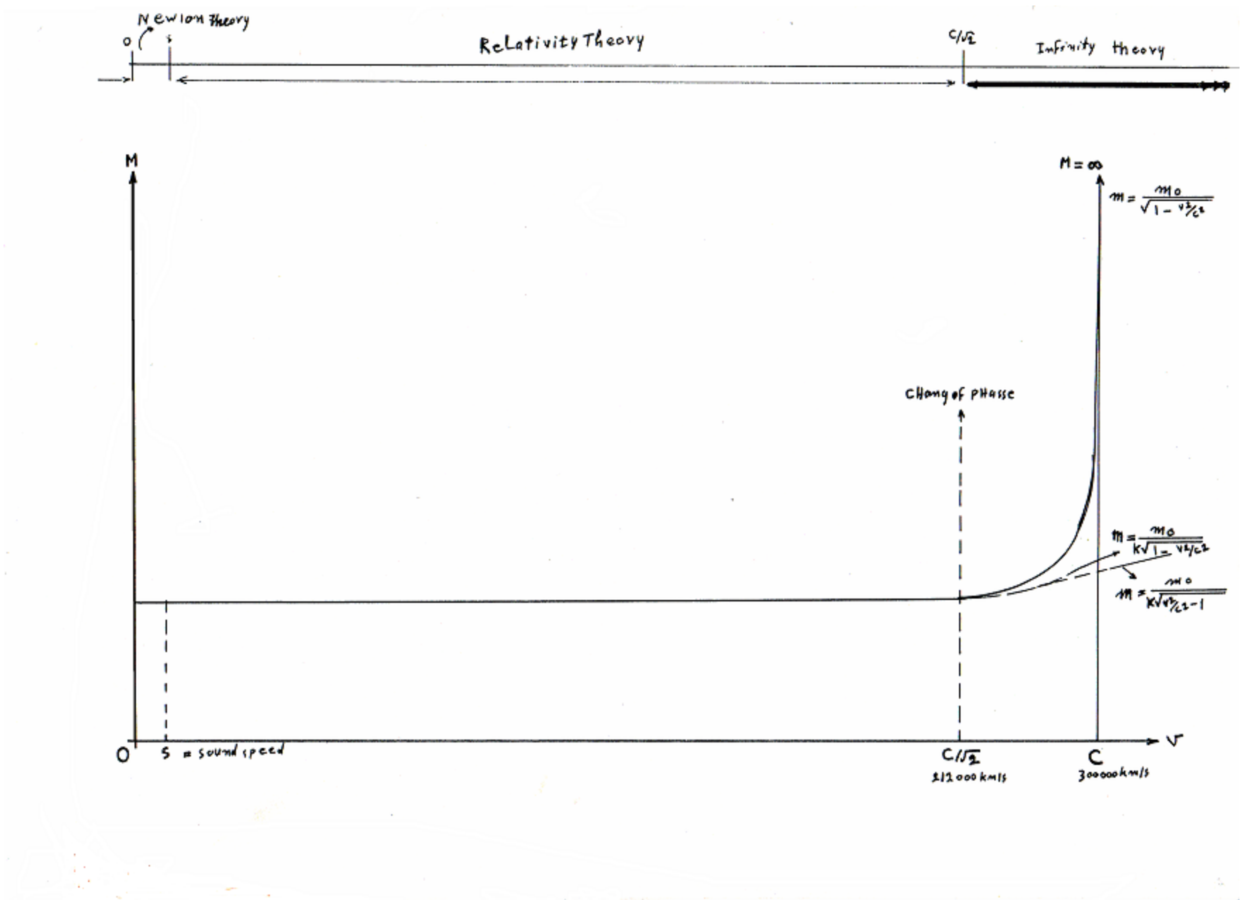

FIGURE 2. Fifth dimension theory (Infinity Theory) factor as a function of velocity. $v \longrightarrow C$ It starts at value 1 and for It does not go to infinity as above

CONCLUSION

Equation No,(1) *Lorentz [2]* can solve all the problems of particles in speed less than speed of (Limit) = 212132 km/sec (where C, speed of light)
Equation No, (2) we can solve the problems of particles move in speed of C
Equation No, (3) we can solve the problems of particles in speed under C
Equation No, (4) we can solve the problems of particles in speed up than C

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