Superfluous System

Even though we have previously explained Systems in Relative Motion and the derivation of the AD equations in many ways, it seems to us that to the layman and probably professionals also – because they are saturated with the Lorentz transformation – the best explanation may be the following: [1]

A phenomenon happens at position A and an Observer at position B receives a signal from A

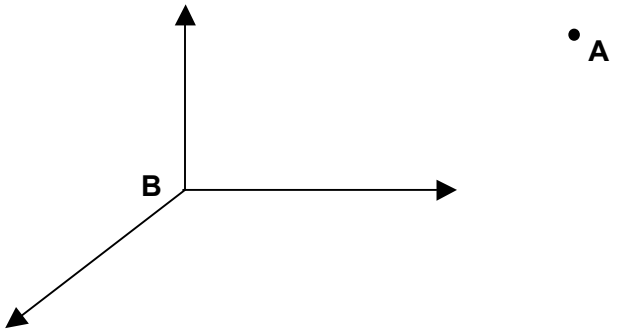

Fig. 1

We say that B has a System of Coordinates centered on it.

Whether the phenomenon A is moving with respect to B, or B with respect to A, or both are moving simultaneously with respect to each other, is totally irrelevant to the Principle of Relativity. The light velocity is always constant, independent of both the Observer's and the Phenomenon's states of motion.

A simple question arises:

Is there relativity to an Observer at B?

Whoever is not saturated with the Lorentz transformation will answer the question with what makes sense: YES.

Of course there is relativity between A and B, because the two fundamental rules of relativity are satisfied: inertial systems in relative motion and constant light velocity.

Those saturated with the Lorentz transformation will think in terms of two Observers, as if transmitting information between “two observers” is different from transmitting a signal between the Observer and the Phenomenon.

---

[1].- This form was used by Carezani, for the first time, to explain this problem to Herman Leonard and was inspired by the latter through his questions prior to a photo session. Herman Leonard is a leading photographer in the USA, with collections at the Smithsonian Institute’s permanent collection on musical history. He is known for helping Yousuf Karsh photograph Einstein. Herman Leonard's work can be found at:
http://www.hermanleonard.com and http://www.lpb.org/program/frame

Two Observers in inertial systems in relative motion will measure the constancy of the light velocity and will accomplish with the Principle of Relativity exactly the same as is accomplished between an Observer at B and the Phenomenon at A.

The information between the Phenomenon and the Observer yields relativity.

What is the Lorentz transformation doing?

Lorentz introduced a new System C in relative motion with respect to B but without motion with respect to A, that is, A is at rest in this new system introduced artificially.

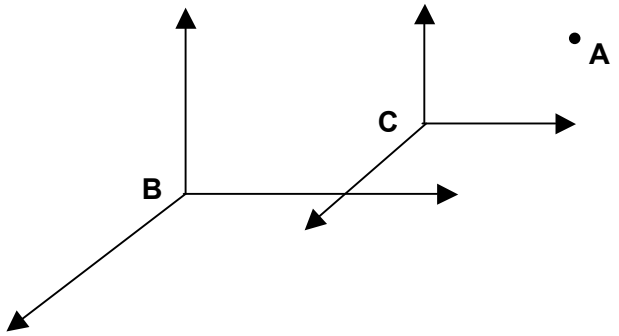

Fig. 2

Now it is very easy to show that this System of Coordinates has no physical meaning, because moving it to point A we will not lose the "relativity" between System B and System C or "System A." See Fig. 3.

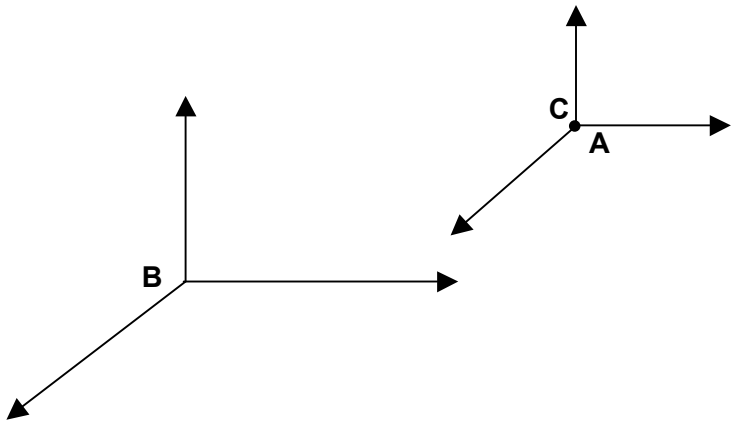

Fig. 3

But now, to the phenomenon at A, the System C is totally irrelevant, that is to say, it doesn't have any physical meaning. System C also doesn't have any meaning to System B, because an Observer at B will see the phenomenon directly, and System C is totally superfluous.

Using this clear explanation, we will show why the Lorentz transformation is physically wrong even though it is mathematically right.

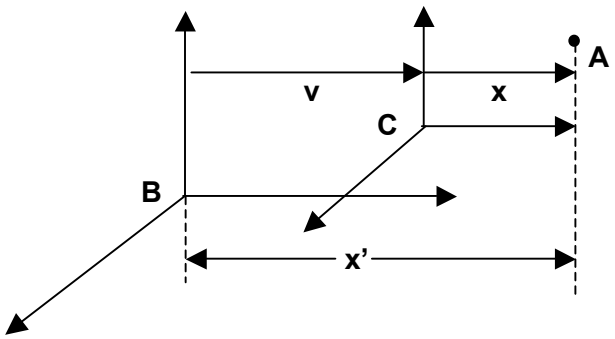

Fig 4.

In Fig. 4. x is a “constant distance” because A is at rest with respect to C. This means that the velocity that A has with respect to B is v, that is, the velocity of C with respect to B.

Now we will write the Lorentz equations:

$$x' = \frac{x + v\,t}{\sqrt{1-\beta^2}} \qquad (1) \qquad t' = \frac{t + \frac{v\,x}{c^2}}{\sqrt{1-\beta^2}} \qquad (2)$$

We will write these equations as follows, where it is simple to see the variable separation

$$x' = \frac{x}{\sqrt{1-\beta^2}} + \frac{v\,t}{\sqrt{1-\beta^2}} \qquad (3)$$

$$t' = \frac{t}{\sqrt{1-\beta^2}} + \frac{\frac{v\,x}{c^2}}{\sqrt{1-\beta^2}} \qquad (4)$$

It is very easy to see in equation (3) that x is divided by $\sqrt{1-\beta^2}$ and this root decreases with the increasing velocity and consequently $\frac{x}{\sqrt{1-\beta^2}}$ is larger than x. This is not true: x is a constant distance because A is at rest in System C.

This increasing distance represents a velocity and this creates an artificial energy that later needs to be subtracted also artificially using the Neutrino, postulated by Pauli to save SR's failure to explain decay.

The same happens with time t in equation (4). The ‘local” time t on System B will not change because another System C is artificially introduced between A and B. t’ will change when measuring the phenomenon at A, but this will not introduce, as a consequence, any change in the initial local time t.

SR is wrong because Einstein utilized the Lorentz transformation without any critical analysis. SR is physically wrong because the Lorentz transformation is also physically wrong.

What happens in Autodynamics?

In AD everything is smooth and makes sense, and of course, represents the real physical world.

The AD equations are:

$$x' = \frac{v\,t}{\sqrt{1-\beta^2}} \qquad (5) \qquad\qquad t' = \frac{t}{\sqrt{1-\beta^2}} \qquad (6)$$

This is represented by Fig. (5), which is equivalent to Fig. 1.

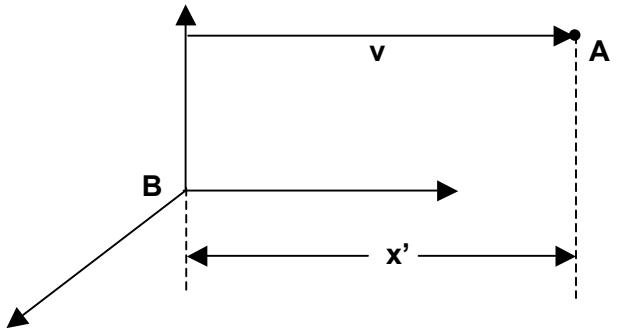

Fig. 5

But the "Two Systems in Relative Motion" constantly reverberate in the minds of people "saturated" with Lorentz transformation.

OK. We will go back to Fig.4, completing the picture in Fig. 6.

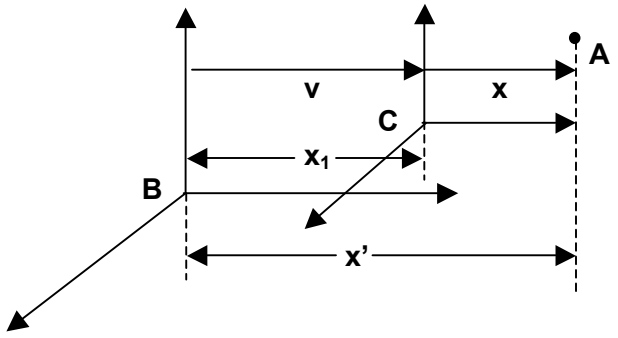

Fig 6.

In Autodynamics

$x' = x + x_1$ (7)

Now x_1 in AD is

$$x_1 = \frac{v\,t}{\sqrt{1-\beta^2}} \qquad (8)$$

applying equation (5) to x_1 because only System C is moving with respect to System B, but A is at rest with respect to C and we cannot apply equation (5).

Now

$$x' = x + \frac{v\,t}{\sqrt{1-\beta^2}} \qquad (9)$$

Autodynamics equation (9) is totally different from the Lorentz equation (1) or (3)

Autodynamics doesn't increase the coordinate x, a constant distance, that must always stay constant and consequently does not introduce an ad hoc energy. No Neutrino is needed.

The following example is given using the figure 15-1 and the equation 15.3 given by the Nobel Laureate Richard Feynman in his textbook, on page 15-2 and 15-3 respectively, of Volume 1 in "The Feynman Lectures on Physics" Addison-Wesley Publishing Company, Fifth Edition, July 1975.

The problem:

"Suppose that Moe is moving in the x-distance with a uniform velocity u and he measures the position of a certain point shown in Fig 15-1. He designated the "x-distance" of the point in his coordinates system as x'. Joe is at rest, and measures the position of the same point designating its x-coordinate in his system as x. The relationship of the coordinates in the two systems is clear from the diagram. After time t Moe's ORIGIN has moved a distance ut, and if the TWO SYSTEMS ORIGINALY COINCIDE:" (The emphasis is mine).

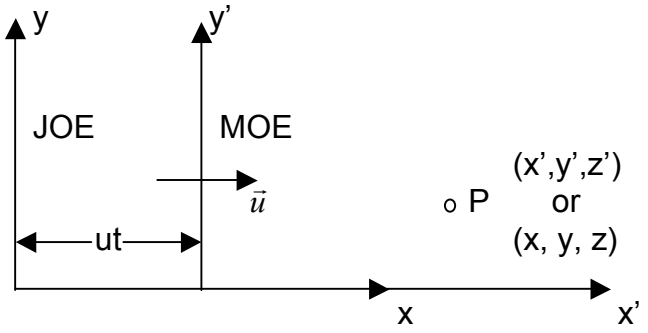

Fig. 15-1 Two coordinates systems in uniform relative motion along x-axes.

$$x' = \frac{x - ut}{\sqrt{1 - \frac{u^2}{c^2}}} \qquad (15.3)$$

We will calculate with the following values

x = 100 meter, u = 0.8 c meter/second, t = 10^-7 second

u = 0.8 * 300 000 000 = 240 000 000 meter/second

u t = 240 000 000 * 10^-7 = 24 meter

$$x' = \frac{100 - 24}{\sqrt{1 - 0.8^2}} = \frac{76}{0.6} = 126.666\ meter$$

MOE traveling from JOE's position at 0.8 of c for 10^-7 second will reach a distance of 126.666 meter that IS LARGER than the original distance x or 100 meters!

We can see this clearly by looking at equation (3) where

$$\frac{x}{\sqrt{1 - u^2}} = \frac{100}{0.6} = 166.666\ meter$$

The constant distance x = 100 meters increases automatically to 166.666 meters

MOE is traveling in the P direction but its distance to P increases!

MOE is traveling in the P direction and simultaneously he is moving away from it!

The Lorentz transformation is truly astonishing!

What happens in AD with the same calculation?

$$x' = x - \frac{u\ t}{\sqrt{1 - \frac{u^2}{c^2}}} = 100 - \frac{24}{0.6} = 100 - 40 = 60 \quad meter$$

This makes sense!

It is evident that the Lorentz failure is given by the fact that the coordinate of the point P is also divided by the root. This is false and absurd because it introduces a variation on what is physically constant.

File: SuperfluousSystem-amDavid.Comp.doc
Word Document.