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Einstein's 1905 Speed/velocity of Light errors part 2

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Einstein has setup a mathematical mess by his theory of Special Relativity, even the addition of quantities is now thrown into confusion. The addition "+" (and addition of minus "-" numbers) can now mean ordinary addition and relativistic addition. When we see an equation such as a+b we are presented with two different ways of doing that addition, and that is contradiction. Einstein created this mess in maths because he required that the addition of two velocities not exceed c, but all he did was write mathematical nonsense as the solution to that addition.

As continuation of part1 [1] we have from Einstein [2] velocity addition as:

if we add velocities say v and w they now do not equal v+w but instead this equation

$$\frac{v+w}{1+vw/c^2};$$

me: So consider the case of velocity c and velocity –v, if we add this we have c –v, but in the above equation it changes into something else:

i.e. for c-v we have:

By relativistic velocity addition c-v becomes $(c-v)/(1 - vc/c^2) = (c-v)/(1-v/c) = (c-v)/(c-v)/c = c$

And for c+v this becomes $(c+v)/(1 + vc/c^2) = (c+v)/(1+v/c) = (c+v)/(c+v)/c = c$

And for $(c^2 - v^2) = (c-v)(c+v))$;

subst c for c-v and c for c+v we have:

$(c^2 - v^2) = c^2$

thus

$\mathrm{sqrt}(c^2 - v^2) = c$

We are honestly expected to believe the stupidity that velocities c and – v when added together become c.

Einstein's derivation of the relativistic velocity addition is not very good so let us look at the derivation by Young and Freedman in a standard physics text [3]. They start from the Lorentz transforms:

x' = gamma *(x – ut)
y' = y
z' = z
t' = gamma*(t – ux/c^2)

gamma = 1/sqrt(1 – u^2 /c^2)

[In previous articles I have used v, but they use u; but it does not really matter.]

They give the differentials of

x' = gamma *(x – ut)
t' = gamma*(t – ux/c^2)

as :

dx' = gamma * (dx – udt)
dt' = gamma* (dt – dx/c^2)

And then say:

We divide the first equation by the second and then divide the numerator and denominator of the result by dt to obtain:

dx'/dt' = (dx/dt – u)/(1 – (u/c^2)(dx/dt))

Now dx/dt is the velocity v in S, and dx'/dt' in the velocity S'. So finally we obtain the relativistic generalization.

v' = (v – u)/(1- uv/c^2) (39-23)

When u and v are much smaller than c, the denominator in equation (39-23) approaches 1, and we approach the result v' = v –u. The opposite extreme is the case v=c, then we find

v' = (v – u)/(1- uv/c^2) = c

This says that anything moving with speed v = c measured in S also has speed v' = c measured in S', despite the relative motion of the two frames. So equation (39-23) is consistent with Einstein's postulate that the speed of light in vacuum is the same in all inertial frames of reference.

me: So they are saying that c added to –v (or –u) gives c.

Let's look at them in more detail, they give:

$x' = \text{gamma} * (x - ut)$ (1)
$t' = \text{gamma} * (t - ux/c^2)$ (2)

I have argued in previous article that gamma is not really necessary; but for now let's stick to using it.

These two equations are for the case:

$x - ct = 0$ (3)
$x' - ct' = 0$ (4)

i.e. we are considering the case of light travelling distance x in time interval t and light travelling distance x' in time interval t'.

The two equations (1) and (2) connect equations (3) and (4). We can substitute (1) and (2) into (4) and we obtain:

$\text{gamma} * (x - ut) - c\,\text{gamma} * (t - ux/c^2)$

$= \text{gamma} * x - \text{gamma} * ut - \text{gamma} * ct + \text{gamma} * ux/c$

And using x = ct this becomes:

$\text{gamma} * ct - \text{gamma} * ut - \text{gamma} * ct + \text{gamma} * ut$

This equals zero as required by (4)

Taking the differentials does not really matter if we realise that when say dx/dt is written that this means a velocity and when x/t is written that we treat this as the same velocity.

So when they start with:

$dx' = \text{gamma} * (dx - udt)$
$dt' = \text{gamma} * (dt - dx/c^2)$

And obtain:

$dx'/dt' = (dx/dt - u)/(1 - (u/c^2)(dx/dt))$

Let us say instead:

$x'/t' = (x/t – u)/(1 – (u/c^2)(x/t))$

by (3) and (4) we have $x'/t' = c$ and $x/t = c$ if we substitute this in, we then have:

$c = (c- u)/(1- u/c)$

And checking left – hand side with right-hand side this gives c = c.

What we have with this equation:

$v' = (v – u)/(1- uv/c^2)$ (39-23)

is just pretence.

It has v' = dx'/dt' (or x/t if not differentials) and that from x'- ct' = 0 is really v' = c, and similarly for v = dx/dt (or x/t if not differentials) and from x- ct = 0 is really v = c. The equation is derived from a pretence that v and v' are variable, but really they are fixed as c. The whole equation starts from v = v' = c and is just c = c. It is not two general velocities.

So back to the issue of adding c to –v by the relativistic velocity addition this is c. But the relativistic velocity addition equation is totally meaningless it only says c = c, so saying c added to –v is c is without any real maths.

Einstein refers to light speed as constant as c, but then he starts saying it has different speeds such as c-v, for instance:

"But the ray moves relatively to the initial point of *k*, when measured in the stationary system, with the velocity *c-v*,…"

So this relativistic velocity bodge (with c added to –v by relativistic velocity gives c) must mean that in such circumstances he means this c-v is c. That is complete nonsense; how can anyone believe. The relativistic velocity addition from Young and Freedman's University book is in its ninth edition; it had plenty of time to correct this mistake, if they perceived it as a mistake. But obsviously they could not perecive it as a mistake; and it is something taught to studenst on realtivity that dates back to Einstein. Not accepting this math mistakes means that it is endemic in relativity; deeply rooted in the faulty thinking of relativists. i.e. they cannot be mathematically competent and think in terms of maths that is not sensible.

They have contradiction with the use of "+" . Whenever they have two velocities say u and v, how do they add it? They might write u+v but they add as per the relativistic velocity addition. But when they do use "+" they sometimes use it to mean "+". They equations are littered with inconsistencies – sometimes using "+" to mean add the normal way and sometimes to use as add the relativistic way.

If we now briefly look again at the Lorentz transformation (using v instead of u):

$x' = (x - vt)/(sqrt(1 - v^2 /c^2)$

$t' = (t - vx/c^2)/(sqrt(1 - v^2 /c^2)$

The bottom factor $sqrt(1 - v^2 /c^2)$ we can write as:

$sqrt((c^2 - v^2)/c^2)$

and have $(c^2 - v^2) = c^2$ by the relativistic velocity addition (of earlier) this becomes

$sqrt (c^2 / c^2) = 1$ positive solution

Thus the Lorentz equations can be written:

$x' = (x - vt)$

$t' = (t - vx/c^2)$

The importance of this is that is these are my "corrected" Lorentz equations, when the relativistic factor is not needed.

i.e. the relativistic factor can be made to become superfluous if we use relativistic velocity addition on $(c^2 - v^2)$ and not if we use ordinary addition.

The point of this is that Special Relativity as it is at present is contradictory; it leads to different results depending on these ambiguities with addition that Einstein has created. Einstein's theory (without revision) is just mathematically inconsistent; and fitting an inconsistent theory to experimental data means nothing sensible.

References

[1] Einstein's 1905 Speed/velocity of Light errors, Roger Anderton
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[3] University Physics, ninth edition, Hugh D Young, Roger A Freedman, Addison-Wesley Publishing company, ISBN 0-201-31132-1 p 1207-1208

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