

Illustration of the faulty maths in Special Relativity part 2

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In an attempt to illustrate as simply as possible that the maths of Special Relativity does not work, this is a highlight of a more detailed article. This article shows that the derivation of the Relativistic velocity addition equation does not work.

First I will give a short illustration of how the Lorentz transform is supposed to work, and then show the derivation of the Relativistic velocity addition equation is nonsense. (This article is based on what is given in standard relativity texts, and dealt with in more detail by me in another article. [1])

A light beam obeying the two equations (1) and (2):

$$x - ct = 0 \quad (1)$$

$$x' - ct' = 0 \quad (2)$$

The Lorentz transform connecting these two equations:

$$x' = g^*(x - ut) \quad (3)$$

$$t' = g^*(t - ux/c^2) \quad (4)$$

g = relativistic factor

subst (3) and (4) into left hand side of (2) :

$$g^*(x - ut) - g^*c(t - ux/c^2) = g^*x - g^*ut - g^*ct + g^*ux/c$$

subst from (1) that $x = ct$:

$$g^*ct - g^*ut - g^*ct + g^*ut$$

this equals zero, so we conclude (3) and (4) transforms (2) into (1)

Now we go onto to the supposed derivation of relativistic velocity addition; divide (3) by (4):

$$x'/t' = g^*(x - ut) / g^*(t - ux/c^2) = (x - ut) / (t - ux/c^2)$$

divide top and bottom of right-hand side by t :

$$x'/t' = (x/t - u) / (1 - ux/(tc^2))$$

label x'/t' as v' and x/t as v

$$v' = (v - u) / (1 - uv/c^2) \quad (5)$$

we have relativistic velocity addition

But wait a minute by (1) we have $x/t = c$ and by (2) we have $x'/t' = c$

so really $v = c$ and $v' = c$

so substitute this into right hand side of (5):

$$\begin{aligned} & (c-u)/(1- u/c) \\ &= (c-u)/(c-u)/c = c \end{aligned}$$

and left hand side of (5) is $v = c$; so both sides equal

$$c = c$$

The relativistic velocity addition equation is $c = c$,

by $c = c$ if we add c to $-u$ we get c .

By Einstein from $c = c$ we pretend for a while that x/t is v and x'/t' is v' , when by (1) and (2) really $x/t = x'/t' = c$, and we get a relativistic velocity addition equation (5).

Mathematical nonsense though, really; and this is what is in standard relativity texts.

[1] Einstein's 1905 Speed/velocity of Light errors part 2, Roger J. Anderton

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