Re: Does photons really travel?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−05/msg00325.html

- *From*: The Ghost In The Machine <ewill@xxxxxxxxxxxxxxxxxxxxxx>
- *Date*: Mon, 5 May 2008 21:19:38 −0700

In sci.physics.relativity, Smooth John
<yoshioory@xxxxxxxxxx>
wrote
on Mon, 5 May 2008 12:40:55 −0700 (PDT)
<5d7b2167−a326−4860−abbc−c4a68a1d5791@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>:

> From a photon point of view, it never travel. For it, now is all the
> time.

Debatable. Let's assume that a photon starts at (x,t) = (0,0),
from the still observer's point of view. Since we can't quite use the
Lorentz we need to get creative regarding limits, but we do know
that

x' = (x−vt)/sqrt(1−v^2/c^2)
t' = (t−vx/c^2)/sqrt(1−v^2/c^2)

for any massive particle.

Since for a photon x^2 = c^2t^2, we can substitute:

x'^2 = (x−vt)^2 / (1 − v^2/c^2)
= (x^2 − v^2t^2 − 2xvt) / (1 − v^2/c^2)
= (c^2t^2 − v^2t^2 − 2xvt) / (1 − v^2/c^2)
t'^2 = (t−vx/c^2)^2 / (1 − v^2/c^2)
= (t^2 − v^2x^2/c^4 − 2xv/c^2) / (1 − v^2/c^2)
= (t^2 − v^2t^2/c^2 − 2xv/c^2) / (1 − v^2/c^2)
= x'^2/c^2

This is fine for any massive particle, but since the
denominator becomes 0 at the limit, the best I can do
there is note that the numerator must be 0 as well,
which basically means it will be created and destroyed
in an instant (since the photon is fixed at x'=0 in its
coordinate−space).

So, in a way, you're right, it never travels. We'll never
know anyway; we weigh too much, and even the best diets

won't help... ;−)

> Paradoxically, when for photons is now all the time, since the beginning
> Big Bang, it still takes billions of years for the rest of us.
>
> This is likely to be impossible.

I don't see a problem here. Could you clarify?

−−
#191, ewill3@xxxxxxxxxxxx
Linux sucks efficiently, but Windows just blows around
a lot of hot air and vapor.
** Posted from http://www.teranews.com **
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