Re: massless or massive photon?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−07/msg00912.html

- *From*: Eric Gisse <jowr.pi@xxxxxxxxx>
- *Date*: Fri, 11 Jul 2008 18:46:07 −0700 (PDT)

On Jul 11, 3:49 am, "Juan R." González−Álvarez
<juanREM...@xxxxxxxxxxxxxxxxxxxx> wrote:

> Pmb wrote on Thu, 10 Jul 2008 14:58:40 −0400:
>
> > "Juan R. Gonzlez−lvarez" <juanREM...@xxxxxxxxxxxxxxxxxxxx> wrote in
> > messagenews:pan.2008.07.10.17.56.09@xxxxxxxxxxxxxxxxxxxxxx
> >
> > Dono wrote on Thu, 10 Jul 2008 09:52:26 −0700:
> >
> > > No one confused the hamiltonian with the
> > > lagrangian (not even you,
> >
> > (...)
> >
> > Eric confounded both, wrote H = L in previous message and
> > did incorrect
> > claims about a blog article. You also did :−)
>
> Eric isn't a physicist so don't expect him to be precise as one.
>
> I don't wait Eric to be precise. As noticed in previous days he makes
> dozens of mistakes each week, I only point a small fraction of his
> nonsenses and I usually do when he decides to replies to me claiming some
> mistake from mine, that he imagines in his usual paranoia...

All those big words are confusing. Please forgive the lack of
precision in my verbiage.

> But one thing is being no precise and other is his nonsensical claim that
>
> > No. The special relativistic
> > Hamiltonian is
> > H = L = −mc^2 * [1 − v^2/
> > c^2].

I left out the square root, and you didn't notice?!

You even whine about the placement of gamma, but you don't say word one about the square root.

> > The Hamiltonian is identical to Jacobi's integral (sometimes called the "energy function") in value. The former is expressed in terms of position and canonical momentum whereas the later is expressed in terms of position (q) and its first time derivative (dq/dt)
>
> But expressing a Hamiltonian as a function of velocity was only one of Eric mistakes.

I didn't bother writing the Hamiltonian in the correct set of generalized coordinates, instead I left it be because IT IS SO FUCKING OBVIOUS and it was irrelevant to my point.

But since you are pitching a shitfit over it, here: v = p/m −−> H = − mc^2 [1 − p^2 / (mc)^2]^1/2

Does that substitution of the bleedingly obvious make you feel better? Its' still the same quantity − just in a different set of generalized coordinates.

> The second being his confusion that (H = L) from the components T and V!

Did you fail every classical mechanics course you ever took? How can you possibly disagree that H = T + V and L = T − V? Regardless, it does not matter since the Lagrangian is constructed from the metric.

> The third mistake being his confusion between the Lagrangian and the

> energy in special relativity. Note that Eric *multiplies* by the factor
>
> (1 − (v^2/ c^2))
>
> instead dividing by it. According to *Eric* when a particle travel to energies close to c its energies vanishes...

No its' supposed to be like that, though with a ^1/2. Nice job on not noticing an actual mistake.

Regardless since you disagree about the sign choice, Taylor expand L in in v/c and you'll see why the sign is as it is. The negative sign on the Lagrangian offsets the negative sign when you expand it, so the v << c limit is Newtonian.

Given how hard of a time you have understanding Newtonian limits, I expect a fair bit of arguing about this.

> But I am still more perturbed by the fact Eric and Dono considered the special relativity Hamiltonian (energy) to be a negative quantity!!!

The dynamics do not matter as long as the choice is a consistent choice.

Regardless − I never claimed that H was an energy in special relativity. Sure its' conserved, but that doesn't mean it is energy.

> *They* sure us that Hamiltonian is negative
>
> H(Eric) = −mc^2 * [1 − v^2/ c^2].

With a ^1/2...

I'm glad nobody noticed [or at least said anything] in the few hours I left this message half−constructed.

Open up any goddamn mechanics textbook and you will see the Lagrangian for special relativity constructed. It will be the same.

> What physicist, student, or aficionado you know that would think that energy of a massive particle in special relativity is negative?

I never said it was the energy of motion, stupid. All I ever said is
that it was conserved − which is not the same as saying it is energy.
The energy you want to talk about is constructed a different way.

> Apart from ignorant and arrogant pair, Eric and Dono, I know of nobody
> else.
>
> And after his nonsense still Eric has claimed he is smart and his
> formulae is right whereas insulted you!!!!!!!!

That's because the both of you are as smart as bricks, and just as
stubborn.

> Pete
>
> My recommendation to users is to avoid Eric and Dono as plague. Several
> of their posts with discussion of their favorite tactics will be cited in
> a new version of USENET guidelines
>
> http://www.canonicalscience.org/en/miscellaneouszone/guidelines.html
>
> Finally they will get worldwide fame!

Why do you suffer the delusion that your guidelines are relevant to
ANYONE other than yourself?

> ––
> Center for CANONICAL |SCIENCE) http://canonicalscience.org

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