

Re: Defining physics

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"Patrick Reany" <reany@asu.edu> wrote in message
news:844a1b64.0407300824.5406afc7@posting.google.com...
| "Harry" <harald.vanintel@epfl.ch> wrote in message
news:<4109f6cf\$1@epflnews.epfl.ch>...
| > "Patrick Reany" <reany@asu.edu> wrote in message
| > news:844a1b64.0407291602.6351e864@posting.google.com...
| > > Speculation: Physics can be defined as that part of science for which
| > > causation can never be proved and might be doable without causality
| > > altogether.
| > >
| > > Patrick
| >
| > That's real speculation indeed. Does it mean that according to you
| > physicists are obliged to accept backwards time travel?
| >
| > Harald
|
| It does not. I mean only to start a discussion on what one means by
| causality in physics.

Frank L Robeson wrote in "Physics", 1943, Macmillan & Co, New York,
"The method of science consists in observation, investigation and
explanation of the phenomena, or occurrences, in nature. When the materials
and circumstances essential to the occurrence have been found and set in
order so that the phenomenon can be reproduced at will, and the whole
transaction has been described accurately, we then say we have the law of
that phenomenon.

A physical law, or principle, is a statement by which we can predict the
effect of a given cause.

The first postulate of science affirms that the same cause always produces
the same effect. Science is based so completely on this belief that when
causes which seem to be the same produce different results, the causes are
re-examined. And invariably it has been found they were not the same."

Once again, Patrick, you are challenging a postulate.

| In that effort, you raise a good point. Surely

| there are more good points to raise. I have raised many such points in
| the past. All of them ignored.

Of course. The points you raise and call 'good' are not good at all. They
are challenges to definitions that are commonly understood.

|
| I had thought that sci NGs might be good places to bandy challenging
| ideas back and forth, but few here are open to question ANY of their
| dogmas, even just as an exercise in creative thought or to clarify the
| issues for themselves. People here mostly just resort to intuition for
| justifications. If you don't agree with their exhalted intuitions they
| have nothing rational to say. They just call you an idiot and wonder
| why you can't see how brilliant their version of "reality" is. Welcome
| to the newsgroup!

Now that IS a valid point, and one I agree with.
The relativist is unaware of the cause of his belief, and the challenger
focusses on paradox as a consequence, which is not a cause.

|
| If you think about it, most arguments here are all about "proving"
| that one person's version of "reality" is better than anybody else's
| version of "reality." Relativists and absolutists fight over ether
| like two dogs fighting over an old bone. Who cares. There are far more
| interesting things in physics to discuss, like What does relativism
| and absolutism really each entail? Relativists challenge ether as
| though it's impossible, yet typically they don't give a damn to deal
| with the underlying misconceptions that are the cause of mindless
| absolutism. They deal only with the symptom and never get to the real
| problem.

| Patrick

So get to the problem instead of challenging cause and effect, because that
isn't going to answer anything.

By 'v' we mean dx/dt . It's simple enough, a small change in distance
divided by a small change in time.

When we multiply dx/dt by dt , we get ... yep, dx . Letting $d = 1$, $v = x/t$.
so $vt = x$.

(One or two idiots have attempted to challenge $x = vt$ when I first presented
this. They can be safely ignored)

Now Einstein writes: "If we place $x' = x-vt$..."

So, $x' = x-x$ and that must equal 0.

Of course this is simply the coordinate of the origin of the moving frame,
which is always at $0-vt$ in the stationary frame.

At the epoch $t = 0$, $x' = x-v * 0$ and hence $x' = x$ for all x .

So far so good.

But then Einstein goes on...

"From the origin of system k let a ray be emitted at the time τ_0 along the X-axis to x' ,"

But as we've just seen, the origin of system k and x' are one and the same. The ray has zero distance to travel. (Or we could suppose that the origin of system k is at $-vt$, from $0' = 0 - vt$, but that doesn't appear in the equation that follows.)

"and at the time τ_1 be reflected thence to the origin of the co-ordinates, arriving there at the time τ_2 ; we then must have $\frac{1}{2}(\tau_0 + \tau_2) = \tau_1$,"

Well, yes. We have $\frac{1}{2}(0+0) = 0$. So what?

x' is not some point remote from the origin of k where the reflection takes place, it is AT the origin of k.

Einstein proceeds:

$$\frac{1}{2}[\tau(0,0,0,t) + \tau(0,0,0,t+x'/(c-v) + x'/(c+v))] = \tau(x',0,0,t+x'/(c-v))$$

and takes partial derivatives. To do this Einstein says

"Hence, if x' be chosen infinitesimally small, "

but it is already zero!

$$\frac{1}{2} [1/(c-v) + 1/(c+v)] d\tau/dt = d\tau/dx' + 1/(c-v) d\tau/dt,$$

Which with a little manipulation is

$$\frac{1}{2} [1/(c-v) + 1/(c+v)] d\tau/dt - 1/(c-v) d\tau/dt = d\tau/dx'$$

$$d\tau/dt (\frac{1}{2} [1/(c-v) + 1/(c+v)] - 1/(c-v)) = d\tau/dx'$$

$$= d\tau/d0$$

$$= d\tau/0$$

and we have a divide by zero.

Here's the full text.

"If we place $x' = x - vt$, it is clear that a point at rest in the system k must have a system of values x' , y , z , independent of time. We first define τ as a function of x' , y , z , and t . To do this we have to express in equations that τ is nothing else than the summary of the data of clocks at rest in system k, which have been synchronized according to the rule given in § 1.

>From the origin of system k let a ray be emitted at the time τ_0 along the X-axis to x' , and at the time τ_1 be reflected thence to the origin of the co-ordinates, arriving there at the time τ_2 ; we then must have $\frac{1}{2}(\tau_0 + \tau_2) = \tau_1$, or, by inserting the arguments of the function τ and

applying the principle of the constancy of the velocity of light in the stationary system:–

$$\frac{1}{2}[\tau(0,0,0,t)+\tau(0,0,0,t+x'/(c-v)+x'/(c+v))] = \tau(x',0,0,t+x'/(c-v)).$$

Hence, if x' be chosen infinitesimally small,

$$\frac{1}{2} [1/(c-v) + 1/(c+v)]d\tau/dt = d\tau/dx' + 1/(c-v) d\tau/dt,"$$

Anyone that knows anything at all about mathematics would know that division by zero is undefined.

As to aether, that was dispelled long ago with MMX, and together with Einstein's second postulate, both go out with observation.

http://www.androcles.pwp.blueyonder.co.uk/actual_data.htm

The 'cause' of that light curve is $c+v$.

Androcles.