Re: Circular motion in SR

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2008−03/msg02274.html

- *From*: PD <TheDraperFamily@xxxxxxxxx>
- *Date*: Wed, 26 Mar 2008 05:30:54 −0700 (PDT)

On Mar 25, 10:44 pm, rbwinn <rbwi...@xxxxxxxx> wrote:

> On Mar 25, 6:13 am, PD <TheDraperFam...@xxxxxxxxx> wrote:
>
> > On Mar 25, 12:20 am, rbwinn <rbwi...@xxxxxxxx> wrote:
> >
> > > On Mar 24, 11:42ýam, PD <TheDraperFam...@xxxxxxxxx>
> > > wrote:
> > >
> > > > On Mar 24, 1:09ýpm, rbwinn
> > > > <rbwi...@xxxxxxxx> wrote:
> > > >
> > > > > ýIf time is measured
> > > > > according to
> > > > > transitions of cesium isotope
> > > > > molecules, then local
> > > > > physical processes
> > > > > remain the same. ý ýIt
> > > > > seems to me that you have
> > > > > to decide which you
> > > > > are going to want to do.
> > > >
> > > > Exactly. The decision has been made by
> > > > consensus, as all standards are
> > > > done.

> Oh, I didn't know it was by concensus. You mean the way people once
> thought the sun revolved around the earth. Well, if it is by concensus, then we have to abide by it.

A standard is arrived at differently than a physical law, you'll note. Or perhaps you didn't note.

> Still, a few questions tend
> to come to mind. Your definition of time is an arbitrary value of
> transitions of a cesium isotope molecule at specific conditions of
> altitude, temperature, and pressure. Change the altitude, temperature, or pressure, and the cesium isotope molecule changes its
> rate of transitions anyway.

I don't know where you got that idea.

> Why would they say standard temperature and pressure if it did not matter?

For the second, they *don't* say. Where did you get the impression they do?

> That was all I was going by. So you are saying that a cesium isotope molecule on Mercury would have the same rate of transitions as one on earth?

> So with regard to these experiments run
> by scientists, do they adjust their results according to the altitude,
> temperature, and pressure that exist where the experiment is run?

No, nor do they have to. All of this information is openly available on the web, because the standards organization is a public group. Please refrain from guessing and do some homework instead.

Well, my homework was done on college graduates. What you are saying is that scientists are like lawyers because they have been to college. I already know what lawyers are like. They say, You are a fool to go into court without a lawyer. It does not bother me. Any time I go to court, I just say, I want a trial by jury.

> To
> be honest, the more I think about scientists, the more I am disinclined to believe tham.

> Then don't try to be one, by posting on a scientific newsgroup with your notions of scientific ideas.

Science is the same to people who have not been to college as it is to people who have been there. You are like the lawyers in court who go into super−punishment mode whenever I ask for trial by jury. They are going to teach me a lesson. As soon as they find out I know how to appeal a case, they cannot get me out of their courtroom fast enough.

Scientists impress me about as much as lawyers do. This one guy Eric Gisse
spent every post telling me how much school he had taken. So then I posted the Galilean transformation equations and referred to S and S', and he wanted to know over and over what S' was doing relative to S. I guess he was just too lazy to read the Galilean transformation equations.

I
believe
that
there
may
be
other
factors
which
also
affect
local
physical
processes.
ýWhat

I cannot understand is the position of scientists.
ýScientific time is the only measurement of time allowed.
ýOK, so what about your twin theory?
ýHow do they ever get back together according to scientific time?
If they do, then obviously, there is some measurement of time that includes the separation of

the twins and their reuniting, which could be calculated in either frame of reference.

No, sir. There is only frame−dependent time. There is no single time measurement that both both twins would agree on. (You also mention "either frame of reference" as though there were two. There are

not
two.
There
are
at
least
three.

Right.
ýIf
you
can't
answer
something,
try
to
make
it
more
complicated.
ýReally
there
are
at
least
7,238.
ýYou
say
there
is
only
frame−dependent
time,
but
anyone
can
determine
for
themselves
that
the
same
event
can
be
observed
from
two
different

frames
of
reference
and
used
to
measure
time
in
both
frames
of
reference,
just
as
the
Galilean
transformation
equations
show.

OK, so do
the Lorentz
transformations.
The
problem is
that the
Galilean
transformations
predict that
the time
elapsed will
be the
same for all
frames. The
Lorentz
transformations
say that the
time
elapsed will
be different
for all
frames. The
Lorentz
transformations
agree with
measurement
and the
Galilean

ones don't,
with the
exception
being
low−speed
cases where
the
measurement
sensitivity
isn't high
enough to
detect the
incorrectness
of the
Galilean
ones.

Well, n' in my equations as
calculated from Galilean
transformation
equation distances shows
that for every frame of
reference, there will
be a different rate of
transitions of cesium isotope
molecules. ýSo
the elapsed time as
measured by cesium clocks
in all frames will be
different.

Well, interestingly enough, by your method,
the physical phenomenon
will take the same number of oscillations of
the radiation from the
transition of the cesium isotope, but it will
take a different number
of seconds, because for you the number of
seconds per oscillations of
the radiation from the transition of the
cesium isotope has to depend
on the speed of the reference frame
compared to the sun.

> No, not speed, velocity. And it does not have to be the sun. I just used the sun as an example of a common measurement of time.

> My comment stands, regardless of which distant standard is used.

> Well, my equation stands, t'=t. There is no distance contraction.

Your equation relies on the redefinition of the second in such a way that it no longer becomes a locally reproducible standard. It also makes the laws of physics different in every reference frame. For a reference frame that is accelerating, it makes the laws of physics *continually* changing.

You find this still more satisfying somehow and don't see a problem with it. That's fine, you just go on thinking that and using that approach. I'm sure you'll get through life just fine using it. Don't mind us while we take a different approach.

> t'=t means that S is a preferred frame of reference because S' is moving relative to S. But if you measure the speed of light in S' with a clock in S', the speed of light is c because a photon is traveling at c in S' as measured by a clock in S'. As measured by t'=t, it would not be traveling at c.

> > But it's not even as clean as that, because a laboratory that is *accelerating* will have its speed relative to the sun changing continually, and so by your prescription, the number of seconds per cesium isotope transition radiation

> oscillation will also change
> continually, and you'd have to track that
> change continually to even
> measure how many seconds a chemical
> reaction takes or how long it
> takes for a sample of americium to decay to
> half−activity or how long
> it takes for hair to turn grey.

Well, no. You just use a clock in the laboratory

Whose rate is *also* different compared to the rotation of the sun.

> The rate of any clock is different than the rate of rotation of the
> sun. I would challenge you to find any clock that has been made that
> has the same rate of rotation as the sun.

A clock that is stationary relative to the sun has the same rate. It's
just divided in different increments.

> to do that because
> scientists say it has been determined by experiment that light
> travels
> at a rate of c relative to a clock in the laboratory.

> That's correct. But the rate of the clock is different than that of
> the rotation of the sun, depending on the velocity of that clock
> relative to the sun.

> Yes, I calculate that rate to be n'=t(1−v/c), where t is a clock that
> is not moving relative to the sun.

> We just use the equation t'=t to keep distances straight. A
> distance
> in S' is the same as a distance in S.
> We can calculate the time of a clock in the laboratory from
> the
> information in the Galilean transformation equations.

> Why calculate it when you have a local clock with which to *measure* it? If you *calculate* it using the Galilean transforms, you find the rate of the local clock doesn't agree, the rate of oscillations of the transition of cesium isotopes doesn't agree, the rate of radioactive decay doesn't agree, the rate of bacterial growth doesn't agree, the rate of hair going gray doesn't agree. If you use the local clock, these disagreements all disappear. The only thing that is different is that the local clock doesn't agree with the sun's rotations when it has a velocity relative to the sun.

Well, someone at the local clock might want to know how a second of his time compared to a second as measured by t'=t, a clock not moving relative to the sun. Or someone at the t'=t clock might want to know how fast the transitions of a cesium isotope molecule are in S'. Of course, scientists already know, but other people might be interested.

> Well, it does to me if I do not have to imagine a distance contraction
> the way scientists require.

> Why is that a problem?

Well, for one thing, no distance contraction exists.

Certainly it does. It's been measured. With rulers. It's not complicated. Measuring the length of something is a pretty straightforward procedure. When you measure something that's moving by that simple procedure, you find you get a different answer. This also has measurable effects in other simple measurements. For example, density is mass divided by three distances and so you'd expect density to change because of length contraction as well. There are simple ways to measure density. When you measure the density of something that's moving by those simple procedures, you find that the density is different. There are other similar cases. It's a *measured* effect.

> It is like going
> into court and asking for trial by jury because the Constitution guarantees the right to trial by jury in all criminal prosecutions, and the judge and all lawyers say, You cannot have a trial by jury in

this criminal case.
So what does that mean, my criminal prosecution is not included in all criminal prosecutions? The more people have been to college, the more untruthful they are.

ýThe people traveling in space shuttles and airplanes would have to do more mathematics than people on the ground, which might seem unfair to them.

then t'=t, just as the Galilean transformation equations show. ýThe difference in clock rates will not affect how many times the twin leaves and returns. ýBut you would have to decide which clock has

the
more
meaningful

...

read more »

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