Re: Is spacetime curvature the source of inertia?

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2007−05/msg05660.html

- *From*: "Sue..." <suzysewnshow@xxxxxxxxxxxx>
- *Date*: 31 May 2007 06:10:23 −0700

On May 31, 9:17 am, RP <no_mail_no_s...@xxxxxxxxx> wrote:

> On May 31, 3:23 am, "Sue..." <suzysewns...@xxxxxxxxxxxx> wrote:
>
> > On May 31, 1:06 am, RP <no_mail_no_s...@xxxxxxxxx> wrote:
> >
> > > On May 30, 10:43 pm, Tom Roberts
> > > <tjroberts...@xxxxxxxxxxxxx> wrote:
> >
> > [...]
> >
> > > Very concise reply, as always. As indicated by my previous
> > > post I'm
> > > in general agreement with you. "Inertia" is not a property at
> > > all,
> > > just a sentiment. An incorrect one at that. A mass doesn't
> > > have
> > > inertia, it has mass. A mass doesn't exhibit inertia, it exhibits
> > > conservation of energy and momentum wrt other masses.
> > > Just one of many
> > > meaningless concepts still present in modern texts.−
> >
> > That point of view gives an unsatisfactory answer to:
> > "Where is the energy of a bullet stored?".
>
> Then maybe you can define inertia for us in terms that make it
> quantifiable,

When you accelerate a bullet, energy moves from the
universe into the bullets structure. If it is long and soft

it is visibly deformed.

> and then explain how inertia has anything to do with
> energy storage.

Ask any police officer why he prefers a 9mm round
to a .177 pellet.

> Energy isn't an invariant, and thus is not a physcal
> thing. The kinetic energy of a bullet has meaning only when taken wrt
> some other mass, i.e. it's a relative quantity.

So bigger rabbits cause bigger wounds and bigger ammunition
is irrelevant? You might want to consult with a few hunters about
that.

> While I agree we need something to reference a number of properties
> to, in every case "the other matter in the universe" always seems to
> be the correct answer. The metric is a perfect fit. OTOH, like you, I
> agree that the map isn't the territory, that is, there is something
> more to the metric than geometry. It's field, the geometrization of
> which doesn't render it any less a field. Whether we speak of forces
> or of spacetime curvature is just a matter of preference.
>
> But regardless, "inertia" has no place in physics, because it isn't
> quantifiable.

If you could choose to fall on a bullet at 300 m/sec or be shot
with a bullet at 300 m/sec wouldn't it come down to coin toss?
The only difference is which celestial body the bullet is
talking to. When the coupling is primaryly with the earth,
the term gravity is fine but if you can't identify a specific
body you still need a term. *Inertia* seems a lot better than
"gravity at−large" but I can accept that.

> It's really just the statement that "for every force
> there is an equal and opposite force". Problem is, if these equal and
> opposite forces acted on the same mass, then it wouldn't accellerate.

The bullet went one way. The gun went the other way.
I don't see the problem.

> The problem with the concept is thus that people wrongly equate it to
> a restance to accelleration where there really is no such thing. In
> the case of Newtons laws, the math is the correct interpretation,
> anything else is philosophy.

The earth's gravity causes an resistance to acceleration.
Does the math say we don't need rocket motors?

Sue...

> More troubling, It suggests we know all we need to know about
> gravity and inertia and an eperiment like this that
> localises the energy where it is hard to model and measure
> is completly unwelcome if it challenges existing fromalism:
>
> << We report the first realization of a guided quasicontinuous
> atom laser by rf outcoupling a Bose−Einstein condensate
> from a hybrid optomagnetic trap into a horizontal atomic
> waveguide. This configuration allows us to cancel the
> acceleration due to gravity and keep the de Broglie
> wavelength constant at 0.5 μm during 0.1 s
> of propagation.
>
> We also show that our configuration, equivalent to pigtailing
> an optical fiber to a (photon) semiconductor laser, ensures
> an intrinsically good transverse mode matching.
> >>http://arxiv.org/abs/cond−mat/0607438
>
> Hide quoted text −

− Show quoted text −− Hide quoted text −

− Show quoted text −− Hide quoted text −

− Show quoted text −

.