

Re: what is the relation between force and energy?

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From: Jim Greenfield (greenfield_7_at_hotmail.com)

Date: 10/17/04

Date: 16 Oct 2004 21:55:49 -0700

srp@microtec.net (Andr? Michaud) wrote in message
news:<562f286c.0410160230.74cb60dd@posting.google.com>...
> greenfield_7@hotmail.com (Jim Greenfield) wrote in message
news:<3c4afb26.0410151738.659621f1@posting.google.com>...
>> srp@microtec.net (Andr? Michaud) wrote in message
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>>>>>> srp@microtec.net (Andr? Michaud) wrote in message
news:<562f286c.0410131242.2ccaf18a@posting.google.com>...
>>>>>>>
>>>>>>>
>>>>>>> I suspect strongly, that if the Doppler frequency changes associated
>>>>>>> with Pioneer are CORRECTLY attributed to the fact that $c'=c+v$, then it
>>>>>>> would be realised that Pioneer is not where it is plotted to be, and
>>>>>>> the anomaly resolves itself.
>>>>>>>
>>>>>>> Maybe.
>>>>>>>
>>>>>>> Another possibility (see my answer to Tom), if I am correctly assessing
>>>>>>> the mass problem, would be that its real trajectory is exactly what it
>>>>>>> has been plotted to be, and that it is not "anomalous" in the least.
>>>>>>> Just that the wrong rest mass has been used to do the calculations.
>>>>>>>
>>>>>>>
>>>>>>> Tom's reply read, but unfortunately you guys are out of my league
>>>>>>> nuclear physics wise.
>>>>>>>
>>>>>>> Just regarding mass, time dilation, and GR:
>>>>>>> Gravity at the earth's centre differs greatly from that at the
>>>>>>> surface.
>>>>>>>
>>>>>>> Presently, it mathematically boils down to zero at the center simply
>>>>>>> because all of Earth's matter is "above" it in all directions, and

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- > > > *"pulls" about equally from all sides. Gravity being zero at the*
- > > > *center cannot mean anything more.*
- > >
- > > *Yes. Tricky how the gravity force is changed from a one directional*
- > > *(squashing the soles of my feet) to a "pressure" at the earth center–*
- > > *like all points outside that center trying to get to the opposite*
- > > *position!*
- >
- > *I am not certain I get your take here.*
- >
- > *The reason gravity holds you against the surface is that all of*
- > *the matter making up the Earth (and attracting you) is under you,*
- > *so all of it is pulling you down.*

I'm trying not to get too side-tracked here, but the pull towards the earth's center is only the net result of adding all the vector forces (attractions) which exist between every particle and every other particle. Point being that IF the earth's mass was ALL at the center, the force on me would be vastly greater (all acting in the same direction)

I don't know if this is relevant to us, but in a binary star system??...or when orbiting bodies have much greater densities or differences in densities??

- >
- > *If you were at the center, in a hypothetical cavity that would*
- > *prevent the pressure from crushing you and the heat from frying*
- > *you, all of the matter making up the Earth would be just about*
- > *equally spread around you, pulling from every direction.*
- >
- > *So, in whatever direction you would look, half of Earth's mass*
- > *would be in front of you and half would be behind you, both halves*
- > *pulling equally on you.*

as above

- >
- > *In a newtonian set up, where force is involved, matter attracts*
- > *matter. Every particle attracts all other particles.*

Yes

- >
- > *Newton did not know about charged particles, but if force is*
- > *involved, the effect would be the same, since all stable matter*
- > *making up our bodies and the matter making up the planet is*
- > *made of stable, charged and scatterable particles (electrons,*
- > *quarks up and quarks down).*
- >
- > > > *Therefore clocks should run (according to GR) at different*
- > > > *rates.*
- > > >
- > > > *Very perceptive... if spacetime dilation was real. But see below*
- > > > *about clocks.*

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> > >
> > > *So how come both the core and the atmosphere complete an orbit*
> > > *of the sun in exactly the same time (whatever that may be).*
>
> > > *The observation that the core isn't on the other side of the*
> > > *sun by now, is enough to make me bin GR right there!*
> > >
> > > *Common sense. The very same can be said about the atmosphere,*
> > > *since at 10000 meters, clocks are already "verified" to run*
> > > *faster than at ground level, so the question is why is the upper*
> > > *atmosphere still orbiting the Sun at the same rate as the Earth.*
> >
> > *As in my reply to Tom, under SR time would fluctuate, but average the*
> > *same. It obviously does not.*
>
> *My opinion also. I came to the conclusion that time is invariant.*
>
> > > *But again, see below for atomic clocks.*
> > >
> > > > *Clocks malfunction – time is invariant – end of story*
> > >
> > > *Common sense conclusion. But atomic clocks do not really malfunction.*
> > > *it only is the interpretation of the measure that is warped to appear*
> > > *to support SR and GR.*
> > >
> > > > *Atomic clocks do not really run faster in altitude. They are just*
> > > > *electronically compensated to always match a very specific frequency*
> > > > *of caesium (or hydrogen in hydrogen based clocks). But since these*
> > > > *frequencies increase with altitude (for reasons that have nothing to*
> > > > *do with time), it is interpreted as proof for SR and GR defenders*
> > > > *that time runs faster when gravitation decreases.*
> >
> > *I don't suppose you can send me to a link diagrammatically describing*
> > *atomic clocks?*
>
> *There are tens of links on the net talking about it, but none that*
> *I scanned explains the real operation. I didn't have the patience*
> *to scan them all.*
>
> *However, I can refer you to very clean source that you can go check*
> *in just about any library, if you don't have the book yourself.*
> *It is in one of the most popular and respected undergrad textbooks*
> *around.*
>
> *"PHYSICS", by Halliday and Resnick.*

Thank you

>
> *In the 1967 edition, you will find a complete description in pages*
> *7 to 11, with a clean schematic on page 9.*
>

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- > *They obviously believe that it means that times runs faster with*
- > *altitude as all physicists currently do, but you can draw your*
- > *own conclusions.*
- >
- > *Hydrogen and some other materials are also used in other types*
- > *of atomic clocks, but they all operate on the same principle.*
- >
- >> *I have long suspected that they rely on $c=c+v$, and that the Doppler*
- >> *you hint at ("compensated to always match a very specific frequency")*
- >> *is due to changed photon speed*
- >
- > *It has been thoroughly demonstrated that the speed of photons does*
- > *not change. What they do instead, when their energy increases is to*
- > *cycle faster (increase in frequency), just like lowering its energy*
- > *lowers its frequency instead of slowing it down.*

Beg to differ. I've looked for years, and am yet to find an experiment where two light pulses are "raced" (compared), when one pulse was emitted from a moving source, and another from a stationary one ref that location, at the same instant.

All I found was a million reasons" from DHR's that such a race is not admissable

when attacking SR

I maintain that the increase in energy of the photon is of a kinetic nature, as the photon is going faster.

- >> *(changing the observed frequency)*
- >
- > *More than simply an "observed" frequency, it also is the real*
- > *physical frequency.*
- >
- > *Frequencies emitted by quantum jumps from a specific orbital to*
- > *a lower specific orbital can increase for only one possible reason*
- > *in such circumstances, and it is that the nucleus attraction would*
- > *increase with altitude, which means that its mass has increased.*
- >
- > *Only one thing can do that, a tightening of the local orbits of the*
- > *captive up and down quarks that make up the nucleons, which causes*
- > *an increase in their relativistic inertia, thus their effective mass.*
- >
- > *Since these clocks are constantly monitored to recalibrate by*
- > *comparing the current chosen frequency of photons emitted by a*
- > *microwave oscillator to energize cesium atoms, what is seen as*
- > *a measure of time dilation is the increase in frequency that the*
- > *oscillator must emit for the resulting beam of cesium atom to*
- > *continue hitting the target as altitude increases.*

Part of my position is that gravity slows out-going photons. This may be significant here.

- >
- > *One point of interest is that this apparent time "dilation" exists*

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- > *only for such atomic clocks. Mechanical clocks continue to give*
- > *perfectly synchronized time in these conditions.*

Yes. Funny how SR supporters are perfectly happy with mechanical clocks, until results come in which disagree with SR :-)

Jim G

$c'=c+v$

>

> *André Michaud*