

## Re: Charged spinning disks

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*Source:* <http://sci.tech-archive.net/Archive/sci.physics/2009-05/msg01548.html>

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- *From:* "Sue..." <suzysewnshow@xxxxxxxxxxxx>
  - *Date:* Fri, 22 May 2009 19:29:26 -0700 (PDT)
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On May 22, 7:17 pm, RP <no\_mail\_no\_s...@xxxxxxxx> wrote:

On May 21, 4:17 pm, "Sue..." <suzysewns...@xxxxxxxxxxxx> wrote:

On May 20, 1:35 pm, RP <no\_mail\_no\_s...@xxxxxxxx> wrote:

On May 20, 7:39 am, "Sue..."  
<suzysewns...@xxxxxxxxxxxx> wrote:

On May 20, 8:14 am, RP  
<no\_mail\_no\_s...@xxxxxxxx> wrote:  
<< Who knows which it really modifies?  
>>

Should we care ?

We should. FWIW, the factor could just as easily be taken to be a modification to  $r$ , the radial separation between the charges. Their relative motions may for unknown reasons cause them to "think" that they are closer together than what we measure them to be.

I've no problem imbuing fundamental particles with the complexities of thought processes. The relativity quacks get

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by with far less.

How about this alternate interpretation: The particles may experience less space between them when in relative motion.

They don't unless you have an absolute motion detector in your tool shed. (principle of relativity)

You contradict yourself below:

<< I don't use Purcell, nor do I find his derivaton correct, even in the special relativistic context. >>

The particles no longer need thought processes. On the other hand, this would require that wrt them there actually is less space between them, and thus their motions must alter the space itself. Just hold that thought for a moment and you might get a better idea where I was going with the previous arguments.

This was just hypothetical, but there is no doubt that the answer lies in the structure of spacetime, at least according to my version of the theory.

Lightning propagated long before space–time was formulated, or so we could infer from ancient texts so I have a little problem with your time–line.

Space–time is just time and space. These existed long before "Minkowski's" version of space–time was formulated. What I was referring to as spece–time above wasn't Minkowski's space–time, but nature's verison of space–time. Ultimately, the only way to deprive charged particles of thought processes is to have them move where space guides them. And in order to deprive space of though processes, charged particles must tell space–time how to bend. The two become actually one and the same. What we call the field of the electron is just its influence on the structure of space–time, or in other words on the metric. The idea of forces propagating through space as

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something other than space, i.e., as something moving through space, requires the recoiling electron to know how it's supposed to respond. It has no intelligence however, so this might be a difficult task for it to accomplish. Moreover, by what means does the carrier wave or photons interact with the electron?

By Coulomb force.

How an antenna launches its input power into radiation: the pattern of the Poynting vector at and near an antenna ---JD Jackson  
<http://arxiv.org/abs/physics/0506053>

We are supposed to understand that "it just does", without explanation at all, let alone a plausible one. If however the electron is just moving blindly along the shortest path through space and time (hints of Feynman), then no further explanation is required, and the electron is content to remain perfectly oblivious to its motion, and even to its existence.

Einstein formulated this notion in terms of mass and its connection to the metric, but once again I will disagree and say that it is charge that determines the metric. Mass is not an invariant, and thus it is not real, and what is not real is imagined. No imaginary thing can influence the motion of a particle.

What say we refer to nature's construction rather than a mathematician's construction?

What is the Interstellar Medium?  
<http://espg.sr.unh.edu/ism/what1.html>  
[http://en.wikipedia.org/wiki/Free\\_space](http://en.wikipedia.org/wiki/Free_space)

Propagation in a dielectric medium  
<http://farside.ph.utexas.edu/teaching/em/lectures/node98.html>

If the Coulomb force itself (between macroscopic electrostatic charges at rest) is due to the motions of the fundamental particles of charge relative to each other, then we no

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longer have available a relativistic adjustment to the Coulomb force to produce magnetism (per Purcell), but rather only one fundamental influence that in turn requires relative motion before this influence is seen. In such a case it seems likely that a fundamental particle of charge affects the very metric in which the other particles move.

So don't use Purcell. You will have plenty of company.

I don't use Purcell, nor do I find his derivation correct, even in the special relativistic context.

Electrons tell space how to curve, and space tells electrons how to move.

~~Wheeler?

Whoa!

That is a gravitational expression.

Not in this argument it isn't! Well not directly. GR has to be a limiting case of a more general theory cast in terms of charges rather than mass.

Too many people looking for too many mass anomalies and too many definitions of mass to make an assumption like that.

Gravity is an electromagnetic phenomenon., and electromagnetism is a result of space-time curvatures.

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<< In physics, there is a \*speculative notion\* that if there were a black hole with the same mass and charge as an electron, it would share many of the properties of the electron including the magnetic moment and Compton wavelength.

As a description, the black hole electron theory is incomplete. The first problem is that black holes tend to merge when they meet. Therefore, a collection of black-hole electrons would be expected to become one big black hole. Also, an electron-positron collision would be expected to produce a larger neutral black hole instead of two photons as is observed. >>

[http://en.wikipedia.org/wiki/Black\\_hole\\_electron](http://en.wikipedia.org/wiki/Black_hole_electron)

So GR isn't necessarily wrong per se, it simply isn't fundamental. FWIW Einstein said pretty much the same himself. I could look up a quote or two, but you've probably read them a time or two already.

I think Einstein held some hope for a ~black hole electron~ to unify EM and gravity. Since neither Higgs bosons nor ~black hole electrons~ are in our menagerie it is somewhat difficult to test their equivalence or interaction.

You don't even know if electrons know how to fall. Coulomb force is  $\sim 10^{42}$  greater than gravity so I won't ask if you have an experiment.

Indeed. Precisely.

I think Weber's Electrodynamics may make that assumption.

There is no longer such a concept as "static force". And when you look closely at that expression it seems self contradictory anyway. A static condition cannot induce dynamism.

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Purcell needs "dynamism" . That is the penalty for teaching Pythagorean theorem to students that are paying to learn multiple integrals.

In my theory  
there is no output without some input, which seems more tolerable than  
Coulomb's magical energy from nowhere. Of course the same argument  
can be applied to Newton's universal law of gravitation, and here  
again we have the mutually exclusive terms coupled together  
"static"  
"interaction" to account for the gravitational interaction.

It might not be good idea to assume gravity is a fundamental force 'till we have a good picture of an indivisible Higgs boson.

In short,  
F (force), only has meaning when there is m and a, where both of the  
latter are nonzero values. A static force is quite an impossibility.

So ditch Purcell. My fridge magnets haven't moved all day and they are sticking just fine.

And they remain there only because the particles of which they are composed are constantly in motion wrt the particles within the fridge door.

Ahem. You persist in ignoring a formulation that works without that assumption.

[http://en.wikipedia.org/wiki/Multiple\\_integral#Some\\_practical\\_applications](http://en.wikipedia.org/wiki/Multiple_integral#Some_practical_applications)  
<http://farside.ph.utexas.edu/teaching/em/lectures/node50.html>

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I won't argue that ?something? is not moving in the fridge magnets  
But I have some doubt it relates the speed of light as with the  
Lorentz or Weber force in macroatomic fields.

<http://en.wikipedia.org/wiki/Zitterbewegung>  
[http://en.wikipedia.org/wiki/Bohr\\_model#Shortcomings](http://en.wikipedia.org/wiki/Bohr_model#Shortcomings)

The momentum flux at the junction will equal the supposed  
"Force" acting to hold the magnets in place. There must be mass in  
accelerated motion in order to have force. There is a difference  
between "tension" due to opposing forces, and "no force", even though  
the opposing forces add up to zero net force on the mass as a whole.  
The fact that there is tension on an object means that the forces are  
still there, and thus not nulled out everywhere within the object, but  
only wrt the acceleration of the object as a whole. The forces are  
still very present at the surfaces where the forces act. To put this  
more simply, when opposing fields in space result in no acceleration  
of an electron, then there is equivalently "no force" acting at that  
point in space. But for a macroscopic mass the fields don't cancel  
everywhere in the volume of that mass, even though they may cancel  
when considering the net acceleration of the mass as a whole. So  
something has to be accelerating within the masses, or else there  
would be no forces there to oppose one another, and thus no tension on  
the object, and the magnet would fall off of the fridge door. Thus  
the charges of which the magnet and the fridge door are interacting  
dynamically, via Weber's force, to hold the magnet to the fridge door.

I think your gravto-inertial notions and your electrodynamic  
notions has a snake swallowing its own tail Benj is the only one  
that seriously considers that subatomic particles are composed  
of chickens and eggs. :-)

In my version, the electrons  
are taken to already be  
moving at  $c$  wrt  
each other, and the drift is  
just an increase in the  
already existing  
relative tangential speeds of  
the electrons. This requires  
that the  
linear speed of the electron  
actually be  $(\sqrt{2})c$ , and  
thus this  
version is inherently not in

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conformity with special relativistic constraints on speed. The Coulomb force itself is thus also due to the motions of electrons wrt each other, the drift of electrons (current) is just an enhancement to the preexisting relative motion, and thus also provides merely an augmentation of the Coulomb force. The equation is however mathematically identical to Webers, since the factor  $(\sqrt{2})c$  cancels out when Coulombs force is solved for. FWIW, some accounts of Weber's force seem to suggest that he held the same view, some don't. I am not an expert on Weber, only on my own independently derived version of the theory.

You assume some constraints that don't apply in subatomics.  
But that is the beauty of the exercise... a better understanding of the electron and positron.

Comparison between Weber's electrodynamics and classical electrodynamics

<http://adsabs.harvard.edu/abs/2000Prama...55..393A>

Faraday's law method

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Lorentz force law method

[http://en.wikipedia.org/wiki/Faraday%27s\\_law\\_of\\_induction](http://en.wikipedia.org/wiki/Faraday%27s_law_of_induction)

[http://en.wikipedia.org/wiki/Lorentz\\_force](http://en.wikipedia.org/wiki/Lorentz_force)

<http://en.wikipedia.org/wik...>

[http://en.wikipedia.org/wiki/Multiple\\_integral#Some\\_practical\\_applica...](http://en.wikipedia.org/wiki/Multiple_integral#Some_practical_applica...)

Sue...

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You're full of links. :)

I get more laughs and insults posting links to the material of others, so it has become a bad habit. I am saving my creative juices for something more useful, like poetry. :-)

Sue...

Poetry is what we're battling against. The mainstream is fond of meaningless expressions and redundancy.

Even when they claim to be mainstream it is meaningless expressions and redundancy.

Sue...

:)

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