

Re: experimental verification of electromagnetic mass

Source: <http://sci.tech-archive.net/Archive/sci.physics.particle/2004-11/0006.html>

From: Monitek (monitek_at_aol.com)

Date: 10/31/04

Date: 31 Oct 2004 11:56:21 GMT

>From: pdraper@yahoo.com (Paul Draper)

>Date: 25/10/2004 16:55 GMT Standard Time

>Message-id: <74768d2d.0410250855.7fde2414@posting.google.com>

>

>monitek@aol.com (Monitek) wrote in message

>news:<20041024130725.16546.00002653@mb-m16.aol.com>...

>> >From: pdraper@yahoo.com (Paul Draper)

>> >Date: 16/10/2004 14:03 GMT Daylight Time

>> >Message-id: <74768d2d.0410160503.70ed4bf4@posting.google.com>

>>>

>> >monitek@aol.com (Monitek) wrote in message

>> >news:<20041015063837.25434.00002226@mb-m04.aol.com>...

>> >> As a general note do I take it that when you have snipped a section of

>the

>> post

>> >> that you are in agreement or have no argument against the contents which

>> have

>> >> been snipped?

>>>

>> >No, that is a poor assumption. I simply choose which parts I want to

>> >address.

>>>

>>>>

>> >> >From: pdraper@yahoo.com (Paul Draper)

>> >> >Date: 12/10/04 17:59 GMT Daylight Time

>> >> >Message-id: <74768d2d.0410120859.573c05b3@posting.google.com>

>>>>

>> >> >monitek@aol.com (Monitek) wrote in message

>> >> >news:<20041012015715.03602.00002179@mb-m04.aol.com>...

>> >> >> >From: pdraper@yahoo.com (Paul Draper)

>> >> >> >Date: 11/10/2004 21:19 GMT Daylight Time

>> >> >> >Message-id: <74768d2d.0410111219.462708b8@posting.google.com>

>>>>>>

>>

snip

>> >> *it. However I have said this in the past. My theory is a logical
>extension
>> of
>> >> the ground breaking work done by Maxwell and Hertz, which in using a
>> dielectric
>> >> medium to explain EMR phenomena. The vacuum is therefore a dielectric
>> >> medium—how is this possible if the vacuum is empty?
>> >
>> >I understand your philosophical quandary. You think that every
>> >physical property of the vacuum should be zero -- that there cannot be
>> >a dielectric constant of a true vacuum, etc., and that a nonzero value
>> >of a constant indicates that the vacuum is not empty. It's an
>> >interesting contention, but you STILL have to show that a "filled"
>> >vacuum doesn't cause theoretical (poor predictions) problems.
>> >
>>
>> *Its not a quandary for me, the physics is non zero therefore its a
>measurement
>> of something. Its the something which is the subject of my speculation.
>
>It's the "therefore" that's getting to me. It's not at all obvious to
>me that the vacuum can't have nonzero properties. Might be to you, but
>it's not to me.
>**

For me a vacuum which can push something, eg opposed magnetic poles push the magnets apart, contains something. We can measure the effects of the something but the something is not directly measurable.

A vacuum which can carry a wave motion must contain a something which oscillates in order to propagate the wave. Which leads me to the concept of a photon. What is your concept of a photon? How does a massless chargeless photon move charged particles?

>>
>> >>
>> >> *You can say, well I don't need to know what the vacuum contains because
>its
>> not
>> >> required. Science is a voyage of discovery into the unknown why are you
>> >> advocating areas which are to be avoided?
>> >
>> >It's an optimization procedure. If I don't need it, and it doesn't buy
>> >me anything, then the deeper "foundations" are simply fanciful fluff.
>> >Let me put it to you this way. FreddiFzzz has a model that is similar
>> >but certainly not identical to yours. Both operate the same way,
>> >providing an interpretation of existing theoretical results that match
>> >experiment. But how are we to distinguish whether your interpretation
>> >or his is the correct one? And if we can't, then what value is either?
>> >*

>>

>> *My theory for the structure of the proton in complete ie with no unknowns*

>and

>> *self consistant. The standard model can not calculate the quark mass*

>> *contribution, to name but one area which is unknown.*

>

>*But your model makes no claim about WHY there must be a certain number*

>*of electrons and positrons that form the shell around the positron.*

>*Why, for example, could it not have the same structure as*

>*buckminsterfullerene, with only 30 electrons and 30 positrons forming*

>*the shell? You have as much difficulty accounting for the "why" of the*

>*mass value as QCD does. By the way, QCD has trouble setting the*

>*absolute scale, but it CAN and DOES predict the ratio of pion to rho*

>*meson to proton very well. Can your theory do that, other than just*

>*devising shells that have the right number of electrons and positrons*

>*in them to add up to the mass of the pion and the rho meson?*

>

Two things define the number of electrons and positrons required to make up the particle mass. The first one is clearly the mass of the particle, and the second is the amount of partial annihilation of the e-p pairs which when determined from deuteron formation is 0.363. That is approximately 2/3rds of the lepton charge has gone towards forming the bucky shell leaving 1/3rd remaining for "strong force bonding". Assuming charge and mass are related in a linear form, based on when annihilated e-p's have no mass or charge, and when separated they have mass and charge. So divide the particle mass by the mass of the electron and then divide by 0.363 add one is charged and you have a close approximation of the number of leptons in the particle. The next thing is to construct a buckyball with the number of particles, not so easy. Clearly, one has to form a geodesic from the number of particles I expect this to limit the number of particles possible.

Does the standard model have an explanation as to why the proton changes mass when it is deformed?

http://www.physics.odu.edu/~hyde/vcs/vcs_poster.html

If a shell were to be formed from 30 x 30 e-p's it would not be a proton. $204/.363=561.9834$ therefore 562 particles required for a muon sized particle.

Then one has to consider some particles may be composites of 2 geodesics.

Yes you are right, in essence one has to devise your shells to fit the particle masses.

snip-----

>> >>

>> >> *Please tell me how a compass needle moves when in the presence of a magnetic*

>> >> *field. Tell me what communicates the movement of charge to the magnet and*

>> *what*

>> >> *forces the magnet to turn?*

>> >

>> >*Don't avoid the point. You said your model can't account for even the*

>> >*qualitative behavior, let alone the quantitative behavior. That's a*

>> >*problem.*

>> >

>>

>> *And your answer for how the compass needle moves is*

>

>*That there is a magnetic field that stands on its own in space that is calculable by adding up (integrating or summing, whichever works) the contributions from each current element J at a distance r from where the compass is sitting. I can either use the Maxwell or Biot–Savart forms of the same relationship to do that. The fact that the magnetic force acts on moving particles only is a consequence of the Lorentz invariance of the laws. Moreover, I can predict QUANTITATIVELY the behavior of the compass needle if I change the orientation of the wire containing the current, or if I change the wire's shape, or if I move it further away, or alter the current in the wire.*

>

You or I can calculate until the cows come home no amount of calculation tells me how the mechanics of the compass needle movement. What is the compass needle reacting against?

>*Now if you're looking for an answer how there can be a magnetic field that stands on its own in empty space, that reverts to the previous philosophical point. I was pointing to the fact that your model cannot account quantitatively or qualitatively for the magnetic field being coupled to moving charge.*

>

The magnetic field IS coupled to moving charge, this is an undisputed physical fact. I am quite satisfied that the E–field is electron–positron pairs polarised in the vacuum. The separation distance reducing with the distance from the source of charge.

I am also convinced that the equations for the magnetic field are similar to those derived for fluid flow, hence the word flux is appropriate. How moving charges induce a flow eludes me at this point in time.

snip-----

>> >> *To say a thing is not required is not a satisfactory counter argument to
>> that
>> >> things existence. You or I may not be required but we exist!
>> >
>> >But we have experimental evidence that we exist, even though we are
>> >not required.
>> >
>> >True, but we also have the experimental evidence that the vacuum is
>occupied.
>
>You are indeed correct, though perhaps not with the same energy
>density that you are positing, nor is there evidence that the vacuum
>fluctuations carry energy in an electromagnetic wave as you propose,
>though you should be able to calculate that energy density.
>*

Vacuum fluctuations, muon G-2, electron G-2, capacitor dielectric, transmission of EMR, magnetic and electric fields, gravitation etc. Consider vacuum fluctuations and EMR you have to remove the EMR in order to determine the vacuum fluctuations, because the EMR perturbs the vacuum fluctuations. I consider that the EMR is synchronised vacuum fluctuations on a larger scale, another pointer to the EMR being carried by e-p pairs in the vacuum.

Why do you keep vacuum fluctuations and EMR in separate compartments. I have been saying that e-p pairs separation is the mechanism of EMR propagation. A passing EM wave separates the pairs momentarily – this can be observed as a "vacuum fluctuation". They are part and parcel of the same phenomenon and both require e-p pairs dormant in the vacuum.

snip-----

>> >>
>> >> *My definitive test would be a slow neutron combining with a slow
>> anti-proton to
>> >> produce anti-deuterium. The current theory says they will annihilate my
>> theory
>> >> says they wont.
>> >
>> >Well, first of all, a slow ANTI-neutron combining with a slow
>> >anti-proton is anti-deuterium. Of course, you say a neutron and an
>> >anti-neutron are the same thing, something I contest from experimental
>> >results. A free neutron decays in flight into a proton, an electron,
>> >and an antineutrino; a free anti-neutron decays in flight into an
>> >antiproton, a positron, and a neutrino. They are distinct.
>> >
>>
>> *I believe someone once measured some gamma radiation after neutrons were
>passed**

sci.physics.particle: Re: experimental verification of electromagnetic mass

>> *through a lead screen, apparently that is a surefire method of making
>> antineutrons. I dont think the experiment was repeated, and we all know
>what
>> that means.
>
>The reference is Phys. Rev. 104, 1193â€“1197 (1956), Bruce Cork primary
>author.
>
>It was reproduced in 1957. The reference is Phys. Rev. 108, 1557–1561
>(1957).
>
>I have a third reference from 1958 from yet another experimental team,
>if you'd like.
>*

Nothing recent then. Nothing with the latest high power detectors.

<http://teachers.web.cern.ch/teachers/archiv/HST2002/Bubblech/an.html>

>>*To the best of my knowledge anti–deuterium has not been made and it
>> is still a goal.
>>
>> Antineutron decay is on your wish list. Nobody has seen it. Thats why they
>are
>> looking for neutron antineutron oscillation.
>
>Well, that's not the reason they're looking for it, but there are
>other signatures that distinguish antineutron–proton collisions and
>neutron–proton collisions.
>
>>
>> >Secondly, antideuterium as I defined it IS predicted by the current
>> >theory and HAS been created in the lab. A popular–education link is
>> >. Your theory once
>> >again doesn't predict anything that distinguishes itself.
>> >
>>
>> Again its on your wish list. They have only just produced antihydrogen.
>
>That's not the case. Antideuterons (bound states of antineutrons and
>antiprotons) were produced in 1965. The reference is "Observation of
>Antideuterons", D. Dorfan, J. Eades, L. Lederman, W. Lee, and C. C.
>Ting, Phys. Rev. Lett. 14, 1003 (1965).
>I concede that antideuterium atoms (antideuterons with an orbiting
>positron) have yet to be produced, but the antideuteron is what you
>claimed your theory predicts that the standard model does not.
>*

How do you know that the anti–deuteron was made with an anti–neutron?
My claim is that antideuteron made with an antineutron and antideuteron
made with a neutron are indistinguishable.

Re: experimental verification of electromagnetic mass

>>
>>
>> >>
>> >> *Current theory says that all the antimatter has gone from our universe.*
>My
>> >> *theory says that ordinary matter is made from "antimatter". The current*
>> *theory*
>> >> *says that this is not possible, does that put clear water between my*
>*theory*
>> *and*
>> >> *conventional theory? Is this a sufficiently different phenomenological*
>> >> *difference between my ideas and the predictions of accepted theory?*
>> >
>> >*No, that's not what the current theory says at all. Cosmic rays are*
>> >*full of antimatter. What current OBSERVATION says is that there is a*
>> >*net balance of matter over antimatter, and any theory that stands up*
>> >*has to account for that. Yours would too.*
>> >
>>
>> *You are misleading our readers, matter and antimatter are created in equal*
>> *proportions I say the antimatter is still here. viz a viz the charge on the*
>> *proton is due to a positron. Do cosmic ray showers create the antimatter*
>*or*
>> *are they antimatter?*
>
>*Ah, I see. So if it turns out there are many more neutrons than*
>*antineutrons (assuming they can be shown to be distinct), then the*
>*imbalance between matter and antimatter would remain, correct? Because*
>*you have no difference between neutron and antineutron in your model?*
>

You say there must be more neutrons than antineutrons if they are the same particle then it does not add to the imbalance.

You have said OBSERVATION says that there is a net balance of matter over antimatter. Experiment says that the charge on a proton is equal to the charge of a positron. I say the charge of a proton is due to a positron therefore matter and antimatter are equal in our observed universe.

I was thinking in terms of the creation of electrons and positrons always occurring in pairs. Therefore, if the standard model is correct, there must be hoards of positrons lurking somewhere in our universe so much so I bet we could feel the charge from here!. Every electron has a positron partner. Where do you consider all the positrons went?

My solution to the dilemma is to confine the associated positron inside the proton so as to construct matter from equal amounts of matter and antimatter.

snip-----

>> >> *Nobody should be allowed to finesse anything. All science should be
>based*

>> *on*

>> >> *first principles.*

>> >

>> >*Then I think we differ on what a first principle is. You think a first*

>> >*principle should also be intuitively obvious. I disagree with that.*

>> >

>> *In this discussion electrons and positrons are first principles.*

>

>*No. An elementary particle is not a first principle, even if they are*

>*the most elementary particles.*

>

??????

snip -----

>>

>> *Who ruled QED out for the strong force?*

>>

>> >*Again:*

>> >*1. Experimental cross-sections are related to the strength of the*

>> >*interaction. Compare EM (QED) cross-sections in the nucleus with*

>> >*strong force (QCD) cross-sections, and their comparison with*

>> >*experiment.*

>> >*2. QCD predicts *stronger coupling* with distance, QED predicts*

>> >*weaker. Compare these predictions with experimental results.*

>> >*3. Calculate the rate of $p+p \rightarrow 2$ -jets compared to $p+p \rightarrow 3$ -jets in*

>> >*your QED-based theory and compare with experiment. Compare your*

>> >*success with QCD's.*

>> >

>> >*PD*

>>

>> *My proton model is all to do with the structure of the proton but says*

>*nothing*

>> *about*

>> *what happens to the bits when you smash it to pieces. I liken collider*

>> *experiments to that of studying Ming porcelain by throwing it off the*

>*Empire*

>> *state building and watching what happens to the bits. Can you control the*

>*jet*

>> *events? Can you set conditions such that the outcome of a collision event*

>*is*

>> *known beforehand, no you can not. The collision outcome is random.*

>

>*That is due to quantum mechanics, not the difference between QCD and*

>*QED. Your model, if it relies on QED, would suffer the same*

>*constraint.*

>

Its to do with probability, it is to do with hitting large numbers of particles with large numbers of particles. To me the outcome of a "reaction" after collision is not important in terms of quantity but more in terms of what is produced. Take for instance electron positron collisions, one is colliding only electrons and positrons but protons and antiprotons are being produced (+ lots of other particles I know). One could say that the energy of the electrons and positrons created the protons and antiprotons, or one could say that the electrons and positrons are the building blocks of the particles produces. I prefer the latter view.

>> *The results*

>> *may be understood in terms of probability but that is all. Why are only two*

>> *quark structures stable?*

>>

>> *1. The strong force has a shorter range therefore the cross section is*

>*bound to*

>> *smaller.*

>>

>> *2. QCD has been made to predict a "stronger coupling", so why is this a*

>*problem*

>> *for me.*

>> *Wasnt QCD developed after it was known that the strong force was stronger*

>*than*

>> *the repulsive force between two protons.*

>

>*Yes, but it's more than just a "stronger" version of QED. There are*

>*fundamental differences in how QCD behaves and how QED behaves,*

>*supported by experiment, and for this I refer to a textbook by Don*

>*Perkins.*

>

ISBN ??

>>

>> *3. As I have said my ideas have nothing to say about what happens to the*

>*bits*

>> *when you destroy the nucleus. Its interesting though that a positive*

>*particle*

>> *always ends up being a positron and a negative particle always ends up as*

>*an*

>> *electron. How do the quarks convert their charge to leptons, and where does*

>*the*

>> *colour charge go? Do the gluons just evaporate?*

>

>*The color charge is preserved. Recall that hadrons are colorless*

>*objects, though the individual quarks have color. Recall too that the*

>*final states have zero lepton number. It's not all that surprising*

>*that mesons decay to the lightest available particle eventually*

>*(electrons or positrons). Note that baryons, both positive and*

>*negative, do NOT decay into positrons or electrons without another*

>*baryon in the final state.*

>

Positive particles always have a final state as a positron, negative particles always have a final state as an electron. How does the quark charge combine into a lepton, which is considered to be fundamental, indestructable ie not composite?

Regards,
Monitek (Arden Barker)