More on the FINE STRUCTURE CONSTANT

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I have already published several papers on this topic, suggesting the fine structure constant is a proportionality constant between the electron and the photon; or, to say the same thing in a different way, it is a charge to mass transform. Or, to say it in a third way, it is a light to matter transform. We will find the same thing here, but come at it from a completely different angle.

The number in question is 137, so whenever I see the number 137 come up in quantum calculations, my first suspicion is that it must be related to the fine structure constant somehow. Yes, numbers are sometimes just coincidences, but many important connections have been written off as coincidences, both in physics and out of it. So my first assumption is that number relations are NOT coincidences. If they are, fine. If they aren't, then I will have discovered something important, you see.

I have weighed the charge field in various ways over the years, including most importantly in my papers connecting the charge field to so-called dark matter. I have shown that the mainstream dark matter numbers are telling us the charge field outweighs the matter field universally or generally by 19 to 1. They are also telling us the proton is recycling 19 times its own mass in photons every second. But I was looking for another way to weigh the charge field, and I recently saw another way to do that. That is what this paper is about.

In both mainstream theory and my theory, there is a discrepancy between the atomic mass unit and the mass of the proton. The atomic mass unit is about 1823 electron masses, while the proton is about 1836 electron masses. In previous papers, I have called the AMU the Dalton, and that is fairly standard since the mainstream does that, too. The problem is, the Dalton is supposed to be the mass of a nucleon; but, again, that doesn't work out because the neutron is actually heavier than the proton. As you see, that just makes the problem worse. Mainstream theory usually buries this problem, but when it does address it, it just uses it to blow more esoteric smoke. As usual, there is no straightforward mechanical explanation for it.

My assumption has always been that the difference is actually the mass of the charge being recycled. Since the mainstream doesn't know about charge recycling, of course it can't support this line of reasoning. In mainstream theory, charge, like photons, has no mass. However, even in mainstream theory this charge should at least have *mass equivalence*. If charge is real, it must have energy, and all energy has mass equivalence. But in my theory, it is even more transparent than that. My photons and charge *do* have real mass. I have calculated this mass, and it falls just below the mainstream lower limit for mass on the photon. In other words, they have run experiments and long equations, coming to the conclusion that the mass of the photon must be below 10^{-36} kg. Using the same experiments but extrapolating from different (and older) mainstream equations [including Newton's gravity equations and the constant G], I have calculated the mass of the photon at around 10^{-37} kg.

At any rate, since charge must have mass or mass equivalence, and since photons travel at a finite velocity of c, during any real time the proton must be recycling a given number of them. At any given dt, there will be some amount of photons passing through the proton. It is these photons that have failed to have been weighed so far in the equations. And it is these photons that are causing the differential between 1823 and 1836.

To show this, let us work the equations backwards, as is so often useful in my analyses. However, rather than use the mainstream's number for the Dalton, I am going to use my own. I take it from my paper showing how to build quanta with stacked spins. In it, I provide the quantum spin equation that shows how to add spins to an electron to create a proton. In it, I find a value for the Dalton of about 1821. There is a miss of about .001 between my value and the mainstream value, and that is because the mainstream is including the neutron in its calculations and I am not. My Dalton is not exactly what theirs is. Their Dalton is an average while mine is a direct spin-up of the electron. In my equations, I am finding the volume of the stacked spins through which the photons must travel as they recycle through the baryon. But I am not including the actual charge passing through that volume.

Now, if we subtract 1821 from 1836, we get 15. That tells us that when we "weigh" a proton by conventional methods, its weight includes the charge passing through it. And that charge weighs the equivalent of 15 electrons. Now, the number 15 doesn't look so interesting, but if we multiply it by the mass of the electron in kilograms, what do we get?

{eq. 1} 9.11×10^{-31} kg x 15 = 137×10^{-31} kg

Curious, no? I will be told that is a number coincidence. But notice that we have just found that the mass of the charge moving through the proton is 137×10^{-31} kg. Again, the *mass* of the *charge*. So we have just done another charge to mass transform, as we did in other papers studying the fine structure constant. So it is very unlikely the number 137 is a coincidence here. In fact, I can show it isn't.

In that previous paper [first link above], I showed the fine structure constant was a charge to mass transform, and its value could be expressed as the mass of a particle relative to an photon with an equivalent energy. In the Rutherford experiment, that particle was an alpha.

$m_\gamma/m_\alpha = .0073 = 1/137$

I predict I can manipulate that equation, easily achieving the eq. 1 above with the 137 in it. Here goes:

$E/c^2//m_\alpha = .0073$
$m_\alpha c^2/E = 137$
$(6.64 \times 10^{-27}\ kg)c^2/E = 137$
multiply both sides by 10^{-31}
$(6.64 \times 10^{-27}\ kg)(9 \times 10^{-15} m^2/s^2)/E = 137 \times 10^{-31}$
$(6 \times 10^{-41}\ kgm^2/s^2)/E = 137 \times 10^{-31}$
$E = 4.38 \times 10^{-12}$ J

Was that the energy of the alpha particle in Rutherford's experiment? Yes, because that is about 27MeV, which is the known energy of the experiment.*

Which means, we can reverse the equation a couple of lines back to this:

$(6.64 \times 10^{-27}\ kg)(9 \times 10^{-15} m^2/s^2)/E = 137 \times 10^{-31}$

Multiply both sides by 1 kg
$(6.64 \times 10^{-27}$ kg$)(9 \times 10^{-15}$m^2/s$^2)$kg/E = 137 x 10^{-31}kg
Now write the alpha mass as a function of the electron mass
$(4)(1822)(9.11 \times 10^{-31}$ kg$)(9 \times 10^{-15}$m^2/s$^2)$kg/E = 137 x 10^{-31}kg

That is just an expansion of eq. 1, as you see. And that tells us

$(4)(1822)(9 \times 10^{-15}m^2/s^2)$kg/E = 15
$(4)(1822)(1 \times 10^{-31})$kg c^2/E = 15
$(4)(1822)(1 \times 10^{-31})$kg $c^2/4.38 \times 10^{-12}$ J = 15
(4)(1822)/(487) = 15

So you can begin to see how the numbers fit together. This proves that the number 137 coming up in both places was no accident. I have connected the two derivations, showing exactly how the number 137 coming out of Rutherford's experiment causes the number 137 in my calculation. This is yet more confirmation that my analysis is correct, and that the gap between the numbers 1821 and 1836 *is* caused by the weight of the charge recycling through the proton. The proton is recycling the equivalent of 15 electrons during every spin cycle.

You will say, "I thought you said the proton was recycling 19 times its own mass every second. Now you say it is recycling .008 of its mass. Which is it?"

Both. I didn't say a spin cycle takes exactly one second, did I? No, we can calculate the time of one spin cycle from the numbers above. Obviously, from those numbers, one spin cycle only takes about . 00043 seconds.

In closing, I will answer one last question. A reader might ask, "If photons are recycling through the proton, they must be deflected somehow. But what is the proton wall made of?" I know this is going to sound esoteric and spin your head, but it isn't esoteric. The wall is made of nothing. It isn't a wall, it is a boundary. It simply the boundary with the ambient or external charge field. The internal photons are being deflected by. . . external photons at the boundary. Remember, we have discovered the charge field outweighs the matter field by 19 to 1, so the ambient field is quite rich. It may seem empty at our size, but at the size of the proton, it is quite full. The protons are 10^{14} times closer to the photon size than we are, so photons seem that much larger and denser. Charge is incredibly powerful at the quantum level, and the mainstream knows that. It is perfectly capable of acting as a wall here, although it will come as a surprise to most.

My reader might respond, "I still don't understand why the internal photons can't just go back into the ambient field anytime they like. What is stopping them? Haven't you said photon fields are mostly interpenetrable?" Yes, *in space*, they are mostly interpenetrable. But I never said they were interpenetrable at the proton boundary, or even the nuclear boundary. When we get down to the quantum level, we have dense vortices of photons, and they are perfectly able to exclude one another at those densities. At that level, we get a high number of photon collisions, and those collisions are perfectly capable of creating strong boundaries. Specifically, at the border of the proton, the boundary is caused by spins that cannot add or subtract. For photons to spin interact, the spins have to be very close to matching or opposing. If the spins are "sideways" to one another, the only thing the photons can do is deflect. When a particle like the proton is in a tight spin relative to the ambient field, photons coming in from that field cannot spin interact with photons already trapped inside the particle. The spins are almost always orthogonal, and the only interaction is a deflection at a small angle. This keeps the photons inside the particle from escaping into the ambient field through the boundary.

*It wasn't known then, but it has since been measured using the so-called Coulomb barrier. Rutherford was using gold, atomic number 79.