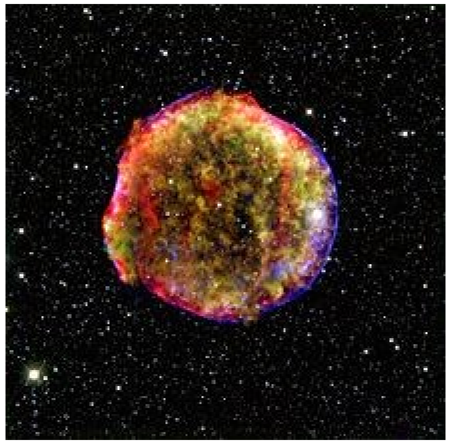
return to updates

The
Vacuum Catastrophe



by Miles Mathis

First posted November 14, 2011

The vacuum catastrophe or cosmological constant problem is still called the worst prediction in history. Particle physicists predicted a value for the cosmological constant that is about 120 orders of magnitude larger than the current measurement, and no one knows how to solve this problem. Wikipedia includes it in several of their sidebars as an "unsolved problem in physics." I will solve it for you very quickly and simply. In fact, I have already solved in other papers, but didn't realize it until now. I was not aware of the problem and so I couldn't isolate the solution.

Once again, we start with my discovery that Newton's equation is a unified field equation. The old equation $F=GMm/R^2$ is a unified field equation. That is to say, the equation includes the charge field or the foundational E/M field, and G is the scaling constant between the two fields. The fields are in vector opposition, and F gives us the result of the two fields.

Likewise, Coulomb's equation $F=kqq/R^2$ is also a unified field equation, with *k* as the scaling constant. Coulomb's equation includes gravity, and F is the result of the two fields. Since quantum mechanics, like Coulomb's equation, is based on charge, and since what is called charge in quantum mechanics includes gravity, quantum mechanics is also a unified field. It already includes gravity. That is why it has been impossible to unify it with gravity. You can't re-unify something that is already unified.

If we rerun the fundamental equations with this new knowledge, we find that the charge force on the electron is not 8.2×10^{-8}N, it is 8.9×10^{-30}, a difference of about 10^{22}.

What caused this huge error was using the constant *k* to calculate the force. In Coulomb's equation, the constant k is a scaling constant between the quantum level and the macrolevel (the size of Coulomb's pith balls). It gives us the scaled field charge from the local charge. But when calculating the force on the electron, we are already at the quantum level, so we don't need the scaler. To find the correct answer from Coulomb's equation, you must jettison k and add the charges (instead of multiplying them). To see the full math, go to my earlier paper.

Some will say that particle physicists don't use old classical equations like Coulomb's equation, but that is misdirection. They may no longer use it directly, but they have been fitting their fancy new math to the old math all along. Coulomb's equation has never been falsified by quantum mechanics, it has only been overwritten with bigger maths. It is the foundation under the newer theories, and if it is wrong, they are wrong. This is precisely why I began looking at these foundational equations years ago. Everyone else has been tinkering with the end math, and only I have been pulling apart the original math.

So, if we un-unify the E/M field equations (the quantum equations), pulling them apart into their two constituent fields, we find that the charge force is much smaller than we have been told. The gravitational force between proton and electron makes up the difference, giving us the same data but a vastly different unified field. Meaning, gravity is 10^{22} stronger at the quantum level than we thought. In the paper where I first discovered that, I called this the greatest error in quantum mechanics, not realizing it was the same error that is causing the vacuum catastrophe.

But where does current theory get the 120 orders of magnitude failure? From here:

To estimate the gravitational effect of the electromagnetic zero-point energy predicted by theory, we can adopt the Planck energy as a cutoff. This is the energy at which the gravitational interaction becomes as strong as the other three fundamental forces of nature (i.e. the scale at which we expect the current theory to break down). This energy is about 10^{19}GeV. This yields a zero-point energy density of about 10^{121} GeV/m^3. *

Well, we have seen that gravity is 10^{22} stronger and E/M is 10^{22} weaker, so we already have a 10^{44} correction to that calculation. But we still have the strong and weak forces, right? Not really, since I have shown that the weak force is not a fundamental or field force. It is simply a variation in E/M during a decay, so it doesn't enter this problem. And I have shown that the strong force is a ghost. It doesn't exist at all. Therefore we already have enough to solve.

To solve, we remember that gravity is supposed to be 10^{38} weaker than E/M at the quantum level. But if we change that by 10^{44}, then gravity is now stronger by 10^6. If we again seek "the energy at which the gravitational interaction becomes as strong as E/M", then we find we are way below 10^{19} GeV. In fact, we see that we must go below the quantum level itself, since gravity is still stronger than E/M at the quantum level. This means the energy is less than 1eV (the basic energy of the quantum level), which is a correction already of 10^{28}. According to my theory, we have to go down to the size of the photon to equalize E/M and gravity, because at that level both are zero. There is no charge at the level of the photon, because the photon is what creates charge. Well, what energy are we at there? About 10^{-21}J, or 10^{-2} eV. Which takes our correction to about 10^{30}. Since the zero-point energy *density* is developed from the Planck mass $M_P{}^4$, our correction is that original correction to the fourth power, which is 10^{120}.

As usual, that is just the quick and rough math, to show you the mechanics. As a theorist, I am mainly interested in making you see the motions and the mechanics, and less interested in piling big equations on your head. I leave it to others to translate my findings into their own preferred mathematical systems.

However, I will point out that I have already proved in another paper (on the Casimir Effect) that there is no zero-point energy. You can't take this problem below the level of the charge photon, so talking about "zeros" or "points" is pointless. The baseline energy of the unified field isn't found by taking the field equations to a limit or toward zero. The baseline energy of the unified field is found at the level of the charge photon, for strictly logical reasons. You can't take the unified field equations below the charge photon, because there is no unified field below the charge photon. The charge photon causes the field, so beneath the charge photon, there can be no charge and no field.

This also explains why the Planck mass and energy have never seemed to fit the Planck length and time. At the Planck scale, the time is 10^{-44}s and the length is 10^{-35}m, but the mass and energy are relatively huge, being 10^{19}GeV and 10^{-8} kg. We have always wondered how 10^{19}GeV fit 10^{-44}s, and now we see that it doesn't. The Planck energy is way too large, and it was caused by this mistaken scaling of gravity and E/M. In addition, it turns out the Planck scale is really just the photon scale, since I have shown that the charge photon has a radius of about 10^{-24}m and a mass of about 10^{-37} kg. If we use these numbers instead of the old Planck scale ones, we get the right value for the so-called zero-point energy, since zero-point energy is just charge field energy in space. That said, we haven't seemed to recognize that this charge field energy can't be measured at its minimum without flying out of the galaxy. The charge field within the galaxy must be measurably higher than outside it, so data from Voyager is going to pretty useless. Voyager will be picking up charge from the Sun and planets as well as the rest of the galaxy, so any "baseline" measured in the solar system is still going to be quite high.

That solves the vacuum catastrophe, but it doesn't solve the cosmological constant problem. With my unified field equations, the cosmological constant problem simply disappears, because with a unified field we don't require such a constant. It is not the constant that resists gravity, it is the E/M field that resists gravity. In my equations, charge and gravity oppose one another at all levels, and this creates the balance in the unified field. There is no cosmological constant and no dark matter. There is only baryonic matter and photonic matter. Of course the current value of the CC is also caused by values for Hubble expansion and for accelerating expansion, but we won't get into that here. Regardless, the so-called "space pressure" can no longer be applied to space. The pressure that balances gravity does not come from space, it comes from photons and charge.

In conclusion, I would like to remind my reader that the standard model has existed with this huge hole in it for decades or centuries. The mainstream sells it as a relatively recent problem, but it has existed ever since the force on the electron was first calculated. This means that it has existed since the time of Coulomb. Particle physicists inherited it from Faraday and Maxwell, and kept it under wraps for a long time. Even now, it is pretty well hidden. Whenever they tell you that QED is the most successful theory ever, that it matches prediction to fantastic levels, that it is bedrock, that it is a miracle, and so on, they never seem to remember this failure. Given its size and the fact that it has polluted everything around it (as I only began to show above), it is astonishing that particles physicists have been able to maintain such incredible levels of salesmanship.

We can see this by looking for a moment at Weinberg's long tinkering with the cosmological constant. We just saw Weinberg trying desperately to use the anthropic principle to push the CC prediction in line with the facts, in my last paper on the Susskind/Smolin debate. In a nutshell, he proposed that the quantum prediction might *not* be wrong, as a universal average. The reason it is so low here, he said, is that it needs to be low to support life. This region of the universe that we measure must have a low CC, or we wouldn't be here to measure it. All very clever, except that now we can see it was just a push. The CC isn't low because it is supporting life here, it is low because the old math and theory was a hash. The old equations had gravity 10^{22} too small and E/M 10^{22} too large.

With that in mind, we may reconsider all the hogwash we have heard over the past seven or eight decades, about phonons and borrowing from the vacuum and symmetry breaking and virtual particles and so on and on. Just as Weinberg was trying to fill holes in desperately bad equations, most other modern physicists have been doing the same thing, regarding other equally bad equations. But I have shown that we don't need a lot of philosophical gibberish or a lot of “creative” solutions. We need to rewrite the old equations, so that they don't fail. That is what I have been doing. That is physics the old way.

*_Cavity Quantum Electrodynamics_, Sergio Dutra, p. 63. See Google Books online.