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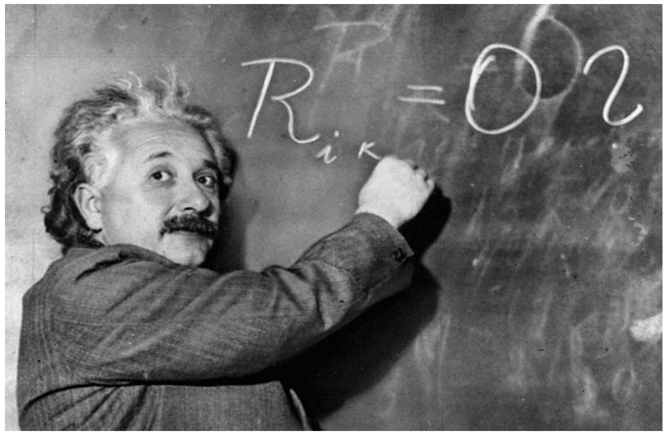
The COSMOLOGICAL CONSTANT *is* the CHARGE FIELD



by Miles Mathis

Part 1

Everything I will say here is contained in my other papers, but I find that it is best to be explicit. I take nothing for granted anymore in these papers, and constantly remind myself that it is necessary to make clear every new link that my theories contain. I have already proved that dark matter is in fact the charge field, and the mainstream now proposes that the cosmological constant is caused—at least in part—by dark energy or matter. So a good reader will already understand that I am proposing the charge field as replacement for both dark matter/energy and the cosmological constant. But in this short paper I will explain exactly how the charge field got lost in the evermore complex field equations of the 20th century.

The problem began with Newton, who supplied us with the first modern field equation. His gravitational equation $F=GMm/R^2$ is both the starting point of the problem and of my solution to it. As beautiful as Newton's equation was admitted to be, it was known to fail very early on. It had to be fluffed and pushed by Euler/Lagrange/Laplace in the 18th century to match solar system problems at the time. This pushing, because it was relatively small, was considered to be a confirmation of Newton's gravity theory, and it was sold as such, but the top physicists and mathematicians of the time were not so sure. Because they weren't able to correct the field at the foundations, as a matter of mechanics, their uncertainty kept to the level of unease, rather than rebellion. They saw their job as supplying the mathematical extensions necessary to keep the field alive, and they did their job pretty well.

For over a hundred years celestial mechanics existed like this, with some other minor updates in the 19th century. But it wasn't until the arrival of Einstein in the early 20th century that the next big step was made. To solve a pair of fairly subtle problems (Mercury's perihelion precession and Solar deflection of starlight), Einstein added his relativity transforms to the existing field equations. But that turned out to be just a lead-up to a pair of far greater problems. Einstein applied his field equations not just to limited expanses of space, as had been done all along, but to the universe as a whole. Using the naïve gravity-only interpretation of the field that had come down to him directly from Newton, Einstein thought this meant his universe should be shrinking. You see Einstein had extended Newton's equation, but he hadn't really corrected it. Beneath the relativity additions, Newton's field was the same as it ever was: gravity-only. With gravity only, the field taken as a whole should shrink. In fact, it should shrink exponentially over time, and shouldn't even be here now. The universe should have shrunk to nothing long ago.

To correct this, Einstein added a constant to his field. In the beginning Einstein didn't have any data to match, so he just chose his constant based on a hunch. He figured the universe was stable, and chose a constant that would perfectly offset gravity. In the 20^{th} century, this choice was seen as Einstein's greatest blunder. He called it that himself. He said that he should have waited for some data—and that wouldn't have taken long since Hubble was right around the corner, so to speak. But what I have discovered is that this interpretation of the events misses the point. This whole "blunder" doesn't really matter, and the crux of the problem has been missed up to now. You see the problem is that everyone from Newton on down has just assumed that the field was gravity-only. The field equations express a total force, that force is a single force, therefore the field must be a single field, right? Wrong. A single force does not in any way imply a single field. A compound field, made up of two completely separate fields, would also create a single total force. And this is in fact the case. I have shown that Newton's equation contained two fields from the beginning, the charge field being the hidden field (hiding within G). This is why Coulomb's equation looks just like Newton's in form: they are both unified fields, the charge field being hidden in Newton's equation and the solo gravity field being hidden in Coulomb's equation (hidden within *k*).

The reason this is important here is that Einstein, not knowing that, interpreted his own new field equations as gravity-only. Like everyone else, he couldn't pull apart Newton's field equations. He didn't even try to pull them apart, since he had no idea Newton's equations were unified or compound. Yes, Newton's field equations *already* contained the charge field, and the charge field is *already* in vector opposition to the solo gravity field. Because Einstein's field equations contain Newton's field equations, Einstein's field equations also contain charge. And that being so, the "cosmological constant" was already inside the equations. Einstein didn't need to add *any* constant to the field equations, he just needed to understand the mechanics that the equations already expressed.

What this means is that *all* values for the cosmological constant have been wrong. No single constant can fix or extend the field equations in the right way, since the constant is misdefined from the beginning. Since it is the charge field that opposes solo gravity, and since the cosmological constant is meant to stand for this opposition, the only way it could work is if the constant stood for charge. But if you let the constant represent charge, you can't integrate it into the existing field equations. Why not? Because the existing field equations already contain charge. It is mathematically impossible to fix an equation by integrating (a second time) a variable the equation already contains. Logically, the only way to fix the equation is to fix the variable that already exists. In other words, if we represent charge by the letter "c", and we find that our initial field equation containing c is not working, we don't leave the original equation alone and try to add or multiply by c a second time. No, we rewrite the original equation so that c has the proper relationship to the other variables. That is what I have done in my unified field equations. I have shown where charge exists in the old equations and how to expand the equations so that they answer more data.

Soon after Einstein's "blunder", Hubble made his big discovery and a second huge problem loomed. Einstein, having learned from his mistake, and being somewhat more scrupulous than the rest, refused to simply boost his constant up to match what was thought to be the new expansion. He saw that there was something wrong with the field equations at a fundamental level, and he set to work to find out what it was. He saw, first of all, that the field equations wouldn't unify with the quantum field. That was a stunning discovery for him, because he knew that he had patterned his field on the E/M field of Maxwell. He had even used the motion of light as his first postulate. The two fields should have fit together like a child's puzzle, and yet they were not only difficult to reconcile, they were impossible. How could that be?

His contemporaries were not so hard on themselves, or so rigorous, and they had no problem changing the constant to match new data. They have been doing it ever since. The 20th century physicist, even the theorist, was a specialist, and specialists don't bother so much with the big picture. Unification has been a sexy topic for the magazines, but it hasn't bothered too many physicists too much. Particle physics has dominated theory, and particle physicists don't care a fig for unification. Celestial bodies such as Mars are just probabilities like electrons, and don't exist until we look at them and force them to decohere, so why worry about unification (see Murray Gell-Mann's *The Quark and the Jaguar*). Macro-objects are just the ghosts of wave mechanics, and you don't worry about unifying with ghosts.

But the answer Einstein was looking for was that both his own field equations and the quantum field equations were *already* unified. So you didn't need to stack them, and couldn't stack them. It was never a matter of stacking the fields, it was a matter of locating gravity in QM, and charge in the field equations of GR. This is what I have done. I have shown where gravity exists in the quantum equations and where charge exists in Einstein's equations. This effectively unifies the two fields.

Part 2

I could end there, but I will now extend these comments in a second part. There are a few things left to be said that may answer questions some still have. Currently, celestial mechanics is split by two contradicting interpretations. When we are taught about the solar system, we are taught stability. We aren't even taught that the asteroid belt was caused by a collision anymore: that is too much instability too close at hand to stomach. Velikovsky scared everyone, and they are now huddled under the illogical assumption that the solar system was always pretty much what it is now. But when we are taught about the universe, we are taught instability. The universe is expanding at a fantastic rate, we are told, and will end up as nothing more than a mist. Since the time periods are longer there, we can learn that without too much anxiety, apparently. Unfortunately, *both* interpretations don't fit the existing field equations. Those equations are still gravity-only, and a gravity-only universe can only shrink. In that sense, Einstein is still right: if you are going to stick with gravity-only, you can explain stability or expansion only with a fantastic mathematical fudge like the cosmological constant. If you only have one force field, and that field is a pull, every addition to your field, be it mass, energy, or a constant, must be a fudge. For instance, if we accept the current claim that the cosmological constant is dark energy or matter, we still have a contradiction. By definition, any matter or energy must have mass or mass equivalence, which means it must enter the current field equations as a gravitational entity. In other words, we are told that 95% of the mass of the universe is dark, but that means that it is not only dark, it is *mass*. If it is mass, it must be gravitational. Well, if it gravitational, it cannot also be anti-gravitational, can it? The cosmological constant is supposed to balance or over-balance gravity, right? How can 95% of the mass of the universe be anti-gravitational?

You see, to propose that any part of dark matter/energy is the cosmological constant, new physicists must be proposing that dark matter/energy is anti-gravitational, which is simply a contradiction. By both the definitions of Newton and Einstein, mass, matter, and energy are those things that cause gravity, so they can't offset gravity by any amount. Mass and energy must go the gravity column or the gravity side of the equation.

These physicists try to weasel around this by claiming that dark matter/energy is “weakly interacting”, but to act as the cosmological constant, the dark matter/energy would have to be *negatively* interacting gravitationally. The cosmological constant isn't “weakly interacting”, it is a repulsion. They have never explained how that can be.

They will say, “OK, but your photons also have mass. So we return the question, smartass! How can photons be anti-gravitational?” I have never called photons anti-gravitational, but photons make up the charge field, and the charge field is in vector opposition to the solo-gravity field, so I suppose you could call them anti-gravitational if you like. They certainly do create a repulsion, since the photons in the charge field are emitted by particles and bodies. They are moving out from the surface, and therefore oppose the gravity field. It works like this: we start with solo-gravity, which still creates a vector in, in my field. I have changed nothing there. Then we add the charge field, which is just a photon gas, in the first instance. I have changed nothing there either, since we already know about the spectrum. I just take the existing and known spectrum and use it as the charge field. Then I give all atomic and subatomic particles spin. I change very little there, since they already have several spin quantum numbers. I just make the spin real. Then I propose that these particles recycle the charge field, by actually taking the photons in and re-emitting them. In this recycling, they simply obey angular momentum rules. The particles have more angular momentum at the equator than at the poles, so photons go in at the poles and out at the equator.

I will be told, “To make this recycling stable over time, the same number of photons have to go IN as OUT, so the IN vector must cancel the OUT vector. Your charge field can't sum to OUT, which means it can't be in vector opposition to the gravity vector.” But that is false. The same *number* of photons go in as out, but the energy in doesn't equal the energy out, again due to angular momentum. Because there is more angular momentum at the equator, the out-photons have more energy than the in-photons. This creates and maintains a total field vector OUT, which balances the gravity vector.

I will be answered, “But what maintains your spin? Such a situation in the macro-world would cause the spin to stop. You have said your photons have real mass and size, so they cannot be emitted without a loss of energy of the emitting particle.” False again. It is the angular momentum differences in the sphere that cause the energy differences, and those same momentum differences cause the spin to maintain, given a sea of photons. Density differences in the external photon field, just beyond the sphere, are naturally created by the recycling process, and these density differences act as potential differences, maintaining the spin. In other words, the energy in the photon field is transmitted to the spinning particle in such a way as to maintain spin, and it is precisely the spherical shape that allows it to do this.

I will be answered, “In that case, the photon field must lose the energy it gives to the particle, to maintain that spin. Over time, the photon field would dissipate.” False again. The photon field loses energy as it goes in, yes, but gains energy as it goes out. So we have a cycle. The particle borrows energy from the field, with which it maintains spin; it then gives that energy back to the field with the higher angular momentum at the equator.

I will be answered, “You have just contradicted yourself. You said that there was more energy out, to explain the vector out. Now you say that the energy in and out are the same, to conserve energy.” No, I haven't said anything about conserving energy. The charge field, by itself, *doesn't* conserve energy. Only the unified field conserves energy, and I haven't included gravity in my tally yet. As I have shown, the photon field doesn't lose energy by spinning the particle. In fact the reverse. The photon field *gains* energy from being recycled. So the particle doesn't burn photons like a car burns gas. The recycling actually gives the gas more energy.

You will ask how this can be. We have a double energy production here, with the particle getting spin and the field also gaining energy. Where does all that energy come from? From gravity. Gravity acts as a well of free energy in current theory, and I also don't change that. In my theory gravity remains a well of free energy, and when I say that the unified field is conserved, I only mean that the input from the well remains constant.

Current theory also assumes that gravity is a well of free energy, despite its claims to the contrary. Here on Earth, the "pull" remains constant, and that is the only way that energy can be said to be conserved. Neither universal nor local energy ever sums to zero: that was never the meaning of conservation of energy. Conservation of energy just means that gravity neither gets greater nor lesser, it doesn't mean that gravity sums to zero with some other force.

I will be told. "That is exactly what conservation of energy means: a sum to zero of a system. Yes, the Earth's gravity is a constant input into the universe, but it is balanced by other bodies and their gravity, so the system does sum to zero." Maybe, maybe not, although if current theory is correct, and we dissipate into a mist, energy will not have been conserved, will it? It will have been lost. But what I am talking about is something different. There may be a sum to zero if you mean that all energy that enters the universe via gravity will be used up. It may be that the free well of energy that is gravity is used in full, always, which is what causes a conservation of energy. But even so, energy isn't conserved in the sense that the free well of gravitational energy is not *restored* by any circular process that we know of. Where does the Earth get the energy that it transmits as gravitational? No one knows. No one has shown a *process* by which that well is filled. That is what I mean by conserved. By this way of looking at it, the total energy of the universe is not conserved and does not sum to zero. At any one moment, the energy input into the universe is hugely positive, and over time, it is even more positive, since we have to add up all those moments. There is no sum to zero.

So you have seen that there are several ways of looking at conservation of energy, at stability, and so on, and they shouldn't be confused. In my mechanics, we have no universal conservation of energy, though we may have a universal conservation of energy *levels*. And my vector opposition of gravity and charge, although it is responsible for the stability of orbits and other things, implies nothing about the universal conservation of energy or any summing to zero. As I just showed above, it is mainly a way for gravity to seem to resist itself, by which one energy input into the universe can split into two opposing fields.

Why do I say that we have only one energy input, but two fields? Because the charge field is not a constant input of energy like gravity is. The charge field is just a photon gas, with a constant energy level. But gravity is not a constant energy level, it is a constant energy input. It is like the difference between a velocity and an acceleration. The charge field is the velocity, and the gravity field is the acceleration. Each photon has a velocity, and a velocity requires only an initial input. It does not require a constant input. But gravity requires a constant input of energy from somewhere.

You will say that if photons have real mass, and if the field has real density, its energy level cannot be maintained without an energy input. True, but in my mechanics, this input is relatively small compared to gravity, and it in fact comes from gravity. The energy of the photon field is maintained by the mechanism above, and gravity drives that mechanism. In other words, we had the photon field gaining energy by being recycled, above. And, I have just been reminded that the photon field will also lose energy due to being real (due to collision with non-photons). I suggest these gains and losses may balance, and this balance is what keeps c stable.

In the same way, particles larger than photons are kept spinning by this same cycle. The recycling of charge, along with solo gravity, together create a feedback mechanism. The two fields, being in vector opposition in the vicinity of all particles, create a loop or a tension which is capable of driving the various quantum processes. By this I don't mean anything esoteric like loop quantum gravity. I mean a loop in the sense of a simple cycle. The recycling of the photons is what creates the real circle of energy, and we can even draw the circle on a simple diagram.

At the most basic level, this circle is created by the spherical shape of the spinning particle. It is the sphere that naturally creates the field potentials, via the poles and the equator and the large angular momentum variance. This is why I have resisted the fancier particle models that seem to be in vogue. And I don't just mean the exotic shapes proposed by string theory. Almost all alternatives to string theory incorporate exotic shapes with fancy names. In my opinion, this is just a public relations move. Fancy new shapes and terms help generate interest for new theories. But we have ample proof of nature's preference for the sphere. Just look around. The planets and stars exist in the charge field, just like electrons do. If the sphere is good enough for stars, it is likely good enough for electrons. Regardless, it is best to use the sphere as the default shape in the early part of major theory correction, in my opinion, since it vastly simplifies the math. Once we get the fields sorted out, we may be in a position to take a closer look at shapes. Until then, arguing about shapes is like arguing about paint samples or throw pillows before you have the walls up.