General Relativity and its metrics vs. Gravitomagnetism: a state of affairs

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If any tangible results were reached in the past regarding Gravity, it was almost never due to a calculus out of General Relativity (GR) itself, but always from either a Minkowsky metric, a Schwarzschild metric, a Kerr metric, or from Gravitomagnetism. The above metrics are generally presented as if they were equivalent to General Relativity within some restrictions or simplifications. Moreover, they are allegedly deduced from GR. However, in this paper we recall that these claims are false. The Minkowsky metric is but a generalisation of the Special Relativity; the Schwarzschild metric is only a partial solution of GR while another crucial part has been neglected and even annihilates the metric, and the Kerr metric is nothing but an extension of this Schwarzschild metric with a rotational term that has nothing to do with GR. Gravitomagnetism is pretended to be 'deduced' from GR, but in fact it only has a vague resemblance with the Newtonian gravity for oblate speroids, and it also resemble a bit a Schwarzschild metric, without any true link at all.

It must be concluded that there is no correct result whatsoever regarding GR, neither as a whole, nor in detail. On the other hand, Gravitomagnetism is in fact an independent theory that successfully replaces the weak GR results. Gravitomagnetism apports proven results by the Gravity Probe B and by the Lunar Laser Ranging experiment, and it solves a multitude of celestial issues.

Keywords: general gravity theory, Heaviside gravity, general relativity theory, gravitomagnetism, Minkowsky metric, Schwarzschild metric, Kerr metric, Lense-Thirring precession.

1. The urgent need for an evaluation of GR and its metrics

Mainstream scientists claim that there are several successes of General Relativity (GR). It would explain the bending of light and Mercury's precession advance. It is supposed to also describe black holes, the Lense-Thirring precession, and gravity waves.

But is the General Relativity and are the deduced metrics correct after all? And if they are correct, do they really explain the pretended issues? This is what matters if we want to analyze 100 years of GR. The stunning answer is that the results are extremely poor when it comes to the explanation of celestial mechanics. The allegedly explained issues are the bending of light, Mercury's perihelion, black holes, and gravitational waves. That's it.

The remaining question is: does the theory really explains these issues or is it just in appearance? In the following few pages, we will discover what scientists recently discovered concerning GR and about its metrics.

2. Gravitomagnetism and GR

Some mainstream scientists very correctly write [6] "Gravity includes a velocity-independent force (Newton) and a velocity-dependent force (gravitomagnetic), closely analogous to the electric and magnetic fields in E&M. This is the theory of Gravitomagnetism."

But the same scientists falsely pretend that Gravitomagnetism can be deduced from GR.

What really happened is that perturbed orbital motions have been computed from Newtonian gravity, applied for oblate spheres. This approach results in an equation that generally speaking resemble a bit the equation for Gravitomagnetism of a spinning sphere.

However, the equation from the perturbation theory is only valid for an oblate sphere, whereas the equation of Gravitomagnetism is valid for perfect spheres. Moreover, the equations are not the same, they only are a bit similar.

Other authors try to deduce Gravitomagnetism out of the Schwarzschild metric [10]. By manipulating this metric, there can be found a vague resemblance with Gravitomagnetism. We will however see below that this approach is fanciful too.

So, we will discover that the alleged link between GRT and Gravitomagnetism is pure sophism.

But why does the mainstream make all the efforts to pretend that Gravitomagnetism follows from the GR?
Below we will see how useful Gravitomagnetism is. So, it is not surprising that mainstream scientists attempt behave like impostors and try to appropriate the very useful Gravitomagnetism theory to the GR, as if it were the GR itself.

But let us first analyze the so-called solutions of GR, which are called 'metrics'.

3. The Minkowsky Metric and GR

The Minkowsky metric is sometimes used to perform a calculus for so-called general gravity issues. In fact, it is an extension of the special relativity (SR) equations, by using two extra dimensions more than SR. SR counts the dimension of distance in one direction (x-direction) and time, whereas the Minkowsky metric adds the y-direction and the z-direction.

This metric however has nothing to do with General Relativity because it doesn't explain the bending of light, nor does it explain the perihelion advance of Mercury.

In fact, the Minkowsky metric just tries to express the retardation of time that gravity fields experience, which is a limited part of the full physical gravity laws.

4. The Schwarzschild Metric and GR

When Schwarzschild wrote his solution to Einstein, he solved only a part of the full equation. This part of the solution has been taken by Einstein to show the bending of light near massive bodies as well as the advance of 43° per century of Mercury's perihelion.

But the other part of the full General Relativity equation, which Schwarzschild didn't handle, was originally neglected by Einstein by applying successive approximations. However, Anatoli Vankov [4][15] has determined that the neglected part results in exactly the same value, but with an opposite sign. So, he has proven that the full solution of General Relativity results in a zero advance of Mercury's perihelion.

This falsifies the ability of General Relativity to explain the perihelion advance of planets, and since the Schwarzschild is also supposed to explain the deflection of light, also this part falls to pieces.

The Schwarzschild is used to 'prove' the existence of black holes. It would contain a singular point, which is the black hole, and an 'event horizon'.

But Stephen Crothers [5] has shown that the singularity \( r = 0 \) causes a fundamental problem in the Schwarzschild solution because it cannot account for the physical existence of black holes. On top of that, the singularity \( c^2 r = 2Gm \) of the same Schwarzschild solution is causing another fundamental problem for this metric. This singularity is 'defined' by mainstream as an event horizon in which the mysterious black hole would reside. However, this 'event horizon' makes no sense at all since it really is a physical singularity without any physical significance.

Finally, among other issues, Crothers stressed that the arbitrary definition of black holes based upon the escape velocity of light is a pure fabrication and is based upon nothing, because it contradicts in the first place the presumed constancy of light.

So, based upon GR, there is absolutely no correct ground to define black holes the way it has been done.

5. The Lense-Thirring precession and the Kerr Metric

The Kerr metric has been invented by Roy Kerr, who manipulated the Schwarzschild metric by adding a rotational term, in order to express the rotation of objects in the modified metric. This would result in an oblate 'event horizon' about black holes instead of the spherical one of the Schwarzschild metric.

So, this metric doesn't follow from GR, but it is again based upon the partial and incomplete Schwarzschild solution, which moreover has been doped with an extra term that has absolutely nothing to do with the original GR equations. The Lense-Thirring precession is closely related to this metric, and this precession doltishly tries to express that a particle that approaches a rotating body, undergo a tendency of rotation in the same way than the body itself. But also this effect has absolutely nothing to do with GR.

In Gravitomagnetism, such an effect is explained in detail by the Lorentz force analogue, caused by the velocity of masses in a gravity field, and which undergo a force that is perpendicular to the particle's velocity and to the gravitomagnetic component of the rotating body [1].

6. General Relativity itself

Concerning the formulation of the General Relativity itself, Stephen Crothers has shown that Einstein has based his equations upon an universe that doesn't contain any matter by its mathematical construction itself, because Einstein has set the energy-momentum tensor equal to zero [5]. Nevertheless, Einstein continued to suppose the presence of matter "outside a body such as a star" in order to describe gravity.

It is clear that the fundamental discrepancy between the mathematical and the physical thought falsifies GR as a whole. Moreover, no tangible experimental result whatsoever has been found directly or indirectly from GR, not even the bending of light, since the theoretical results are base d upon the incomplete Schwarzschild metric.

7. Strong and weak gravity field

The question arises why mainstream scientists insist upon the presence of a strong gravity field for GR, and upon the 'weak gravity field approximation' for Gravitomagnetism as well as for the other above metrics.

As Maxwell pointed out in his study "Note on the Attraction of Gravitation"[1], the premise that the gravity force would be contained in the surrounding medium leads to the absurd conclusion that the gravity force would be intrinsically enormous, outside the dense bodies.

The old idea as if the gravity force were contained in the surroundings of bodies has never explicitly been described in the
context of GR, but still the concept that makes the difference between strong and weak gravity fields remains in nowadays mainstream reasoning. This is absurd, like Maxwell has pointed out. It is therefore clear that there is no ground whatsoever to presume the need for a curved space due to gravity, nor the need to call the linear metrics nor Gravitomagnetism “approximations in a weak field”. Instead, the gravity fields are always weak.

8. Invalidity of General Relativity and its deduced metrics

The conclusion from the above is that GR is based upon the false thought of a strong gravity field, and contains a false mathematical development based upon an universe with a zero mass. Even when forgiving this, GR still can only contain one mass, not even two masses, as explained by Crothers [5]. This makes the theory absurd as well. The ‘deduced’ metrics are false, since they are based upon the incomplete Schwarzschild metric, neglecting the other part of the GR equation. They are artifacts that try to prove the existence of black holes, but they contain singularities that cannot be solved physically. The metrics for rotating bodies are fabricated with the help of incomplete metrics and they don't follow from GR.

Even the correctness of the light deflection measurements in 1919 is strongly disputed by Prof. Marmet [13] due to the high tolerance caused by the presence of atmospheric turbulences during eclipses. If the measurements nowadays are still difficult to effectuate [14], how difficult would it have been with amateur instruments in 1919? Wasn't the scientific world just pushed to believe these results, thanks to Eddington's influence [13]?

9. Validation of Gravitomagnetism by the Gravity Probe B, and the Lunar Laser Ranging

There must be a reason why authors pretend deducing Gravitomagnetism from GR. It is because Gravitomagnetism works.

Indeed, it has been proven [6] that the results of the Gravity Probe B confirm Gravitomagnetism within an error of 1%. The Lunar Laser Ranging (LLR) confirms the gravitomagnetic term to 0.1%. At the same time, the dipole approximation (based upon the perturbation theory) is not working.

The evidence out of very precise measurements of gyroscopes in satellites can't be neglected as proof, as well pro Gravitomagnetism as against GR.

10. Is Gravitomagnetism only valid for small velocities?

Gravitomagnetism is fully valid for all physical velocities. The only thing to be taken into account for obtaining this is to implement the retardation of the emitted waves over distance, in the case of non-stationary systems. This study has successfully been performed by Prof. Oleg Jefimenko in a brilliant way [7]. He has extended the equations of Gravitomagnetism for a multitude of cases, has found the correct time-dependency of moving clocks, and the velocity- and acceleration-dependency of gravity fields about bodies.

11. Discussion and Conclusion

What do we conclude? In the first place, it is obvious that mainstream scientists use the convenient form of GR, its metrics or Gravitomagnetism, depending from what they try to prove in their papers.

But GR is based upon false ideas, like a supposed strong gravity field, and has no correct link between its mathematics and its physics, because Einstein sets the mass content of his universe to zero, while pretending that there still physically exists gravity in his concept [5].

The Schwarzschild metric that illusory follows from GR, is incomplete, because it only shows a part of GR's solution, while the other part, which was neglected by Einstein, cancels the metric. This was demonstrated by Vankov [4] [15] for Mercury's perihelion advance. The successive metrics that are deduced from the Schwarzschild metric are't of course related to GR, because they are based upon the Schwarzschild metric and contain a supplementary rotational term out that don't follow from GR.

Gravitomagnetism isn't deducible from GR because it only vaguely resemble the Schwarzschild metric, the latter being incomplete anyway as a solution of GR. The pretended 'deduction' from Newton's gravity for oblate spheres doesn't match Gravitomagnetism either, because the latter is valid for perfect spheres too.

The reality is that Gravitomagnetism is a fully independent and valid theory on its own, as first explicitly suggested by Oliver Heaviside [3] by calculus at the end of the 19th century, and as further developed at the beginning of the 21st century by Oleg Jefimenko [7] for time-dependent systems, and by DeMees [12] for celestial issues that can be seen as steady systems.

In the mean time it has been confirmed that Gravitomagnetism entirely complies with the results of the Gravity Probe B and the Lunar Laser Ranging experiment [6].

Moreover, it solves the "Dark Matter" issue, the supposed miracle-solution for the constant velocity of stars in disk galaxies that don't follow the Kepler law. However, when using Gravitomagnetism, the "Dark Matter" picture becomes totally different. If one considers a spherical galaxy with a spinning center at the start, all the orbits will eventually swivel to prograde orbits due to the angular momentum of the spinning center, which is transmitted by gravity to the surroundings. Although the orbit velocities are non-Keplerian, still they always have been Newtonian [11]. So, there is no contradiction and no “dark matter” is needed.
Gravitomagnetism also solves the shape of hourglass-supernovae, and many other issues of celestial mechanics and gravity [12].

When we establish that the least critic against SR and GR are systematically banned from mainstream scientific journals, one can legitimately ask the following question: is GR maintained by a group of fundamentalists that monopolize the nowadays gravity and cosmology sciences, spites the proven falsification of these theories?

References

[8] De Mees, T., “No, the Gravity Field is Weak, Dr Einstein!” (2015).