

How to Prove Antigravitation

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Theses: Today, description of gravitation is a geometry of space. It would not just be an exchange force based on exchange quanta. Nobody proved gravitomagnetism and antigravitation. Such experiments of elementary antiparticles had no success. We know that moving electric charges generate electromagnetic fields. Fast moving masses only generate shock waves called "gravitational waves" from General Relativity Theory. Gravitomagnets cannot exist because of no theory for them.

Antitheses: If gravitation would have an analogy to electromagnetism, a gravitomagnetism had to exist. Gravitomagnetic effects could prove this assumption. I want to generate such a gravitomagnetism by an experiment of rotating mass resulting from a gravitational Lorentz-Force effect. Electromagnetic Lorentz-Force¹⁾ is a well-known appearance when an electric current will be deflected passing an electromagnetic field using left-hand rule.

My universe construction²⁾ of the arcuniverse bases on my conception of "antimass" from "antimatter". It is already a complete conception from the smallest elementary particles up to our universe itself.

Stable antiparticles would just have the same amount of their masses as their particles of ordinary matter, but the pre-sign would be reverse, so I assume. I see the mass as a load in analogy to the electric charge. Thus, I understand the gravitation as gravitomagnetism. It has a reverse causality to the electromagnetism and its charges and effects. Therefore, electromagnetism and gravitomagnetism, both are the bases of all the forces in universe²⁾.

I first think at a philosophical proof as follows. If masses attract each other, so they collect them. If antimasses would collect each other by an own feature of attraction, between both a disintegration would run looking like a repulsion. Summary: M and m collect themselves, \bar{m} and \bar{m} collect themselves, so m and \bar{m} separate each other. I see an analogy in the reverse causality to the electromagnetic effects.

Unfortunately, a proof of antimass \bar{m} was not possible until today. Therefore, complete physics bases on the total equivalence of particle mass and antiparticle mass. Such an opinion has far-reaching consequences: Masses and antimasses would attract themselves. A world of antimatter would not be different to the world of ordinary matter.

Therefore, nobody can explain what charges or masses are actually. One means that they are any points of matter with special qualities. We know that all the things of our world are spatial. Points would determine points of existence. We all would be dimensionless points then.

Because this cannot be true, elementary particles as mass and charge cannot be points. They are spaces. But no one actually can explain what they are really made of, except baryons from "quarks".

Elementary electric charges plus and minus and the weighable resting mass of only positive load are well-known the same way as the attraction of electric plus and minus as well as gravitational masses additionally the repulsion of equal electric loading.

How were masses of elementary particles weighed? Has anyone put them on a scale? No, nobody did it.

Particles could be accelerated by electromagnetic fields. Differences gave information. From Einstein's equation $E=mc^2$, one could examine the resting energy and consequently the resting mass by calculations. The same was made with the electron, positron and many unstable

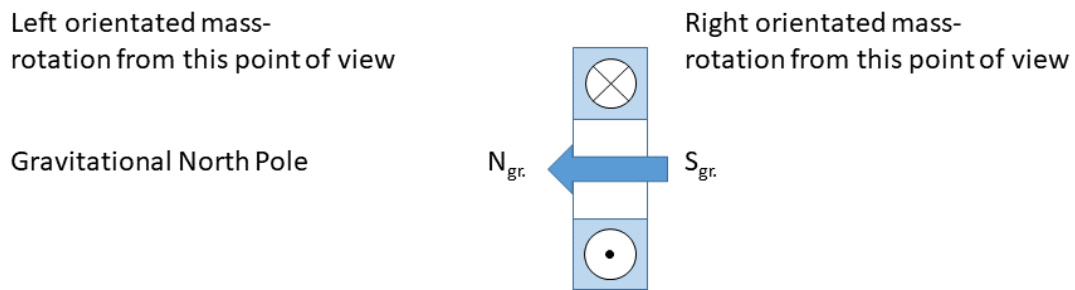
particles. This way, they yield the same mass amount for both leptons without knowing their pre-sign of the mass load.

Certain states of compounds of particles, one cannot measure. Unstable particles include matter and antimatter. They cannot give correct information about mass and antimass. In the past, all those experiments failed proving the difference of mass and antimass. But I still believe in this difference. Proving it, I think of that important experiment as follows:

Gravitomagnetic Lorentz-Force

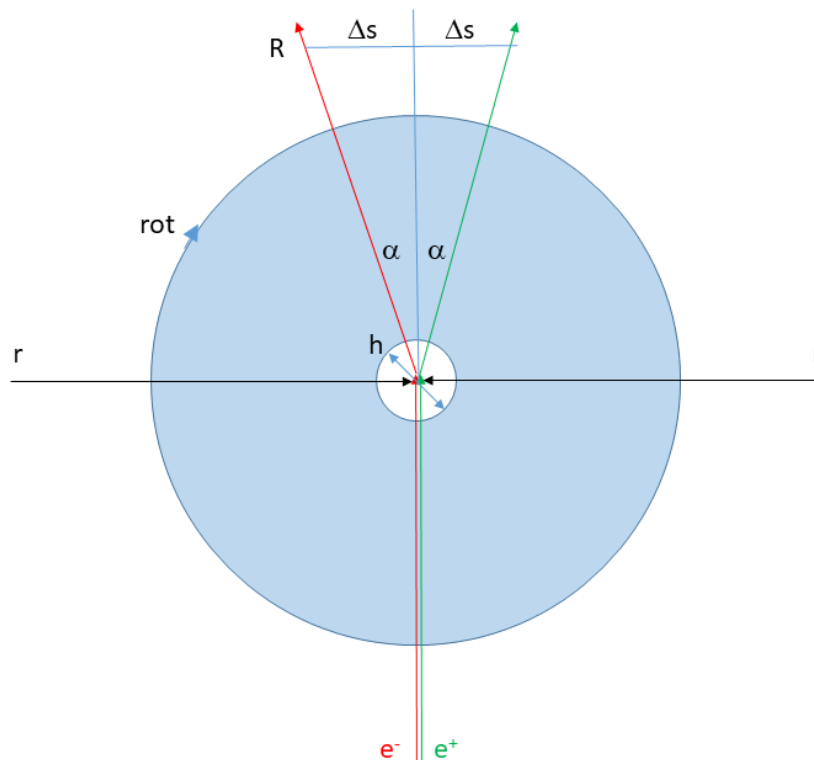
I am thinking of success by a deflection of a beam of single electrons or positrons on the hypothetical, gravitational magnetic field of a rotating mass electrically neutral. The following amounts are examples. Mass is a quadratic ring made of lead (Pb) of $m = 100$ kg. It rotates 20 times a second. A current of mass results to $I_{gr} = 2,000$ kg/s.

Illustration 1 (self-made): Gravitomagnet



I assume rotating lead as a current in analogy to an electric current of charges. The disk rotates to the right, seen from below. Thus, the gravitomagnet has its positive north pole into the direction of my view.

Illustration 2 (self-made): Deflection of an Electron/ Positron at a gravitomagnetic North Pole



You could think, there will not be a good current. But do not worry! Each layer of lead atoms would be one twist of a coil. Thus, it is best to distribute the layers equally. The volume V of the ring of lead will have a hole of a diameter ³⁾ of $h = 2.5$ cm:

$$V_{\text{lead}} = m/r = 100 \text{ kg} / 11.34 \text{ g/cm}^3$$

$$V_x = \pi r^2 s \quad (\pi = 3.1415926)$$

$$V_{\text{lead}} = 8,818.34 \text{ cm}^3.$$

For one massive twist of coil, radius r and length s have the same size:

$$r = (V / \pi)^{1/3} = 14.05 \text{ cm} = s.$$

Because of the hole in the center of the rotating body of lead, the amounts have to be a little bit longer:

$$V_{\text{hole}} = \pi r_h^2 s$$

$$r \approx 14.14 \text{ cm} = s.$$

Relationship of one twist to one length equals one: $N/s = 1$.

What magnetic current B would flow in the gravitational coil of lead? From the e. m. flux density, we know the equation as follows ⁴⁾:

$$B = \mu_0 \times I \times N/s$$

with B as magnetic flux density, μ_0 as magnetic field constant, I as current, N as number of twists, s as the length of the coil.

Our coil is in air ³⁾ with $\mu_0 = 1.26\text{E-}6$ Vs/Am² by the central hole of $r_h = 1.25$ cm.

In my work ²⁾, I gave a calculation from gravitational to electric current:

$$1 \text{ Ampere} = 1.16\text{E}10 \text{ kg/s}$$

Consequently, our current of lead has the following amount:

$$I_{\text{gr.}} = 1.72\text{E-}7 \text{ A calculated into an e. m. current.}$$

$$B = 1.26\text{E-}6 \text{ Vs/Am}^2 \times 1.72\text{E-}7 \text{ A} \times 1 = 2.17\text{E-}13 \text{ Vs/m}^2.$$

Now we calculate the deflection by Lorentz-Force to one single electron mass ⁵⁾:

$$R = m_e \times v_e / e_0 \times B$$

$$R = 9.11\text{E-}31 \text{ kg} \times 0.5 \text{ m/s} / 1.602\text{E-}19 \text{ As} \times 2.17\text{E-}13 \text{ Vs/m}^2$$

$$(1\text{VA} = 1\text{W} = 1 \text{ kgm}^2/\text{s}^3; 1 \text{ C} = 1 \text{ As})$$

$$R = 13 \text{ m} \quad U = 2 \pi R = 81.68 \text{ m.}$$

If the hole in the middle of the wheel of lead would equal $r_h = 1.25$ cm, it would be the part of $9.6\text{E-}4$ from distance R of the screen:

$$R_{\text{rel}} = 0.0125 / 13 = 9.6\text{E-}4$$

The smallest angle α is a circle of 360° multiplied with $9.6\text{E-}4$ then. We find the smallest deflection angle of $\alpha = 0.35^\circ$. This angle may be larger because of wider extension of the gravitomagnetic field out of the center of $h = 2.5$ cm (bow of lepton way in magnetic field) to

14 cm. Using these conditions, we can expect an angle of $\alpha > 0.35^\circ$ exceeding this area of the bow h.

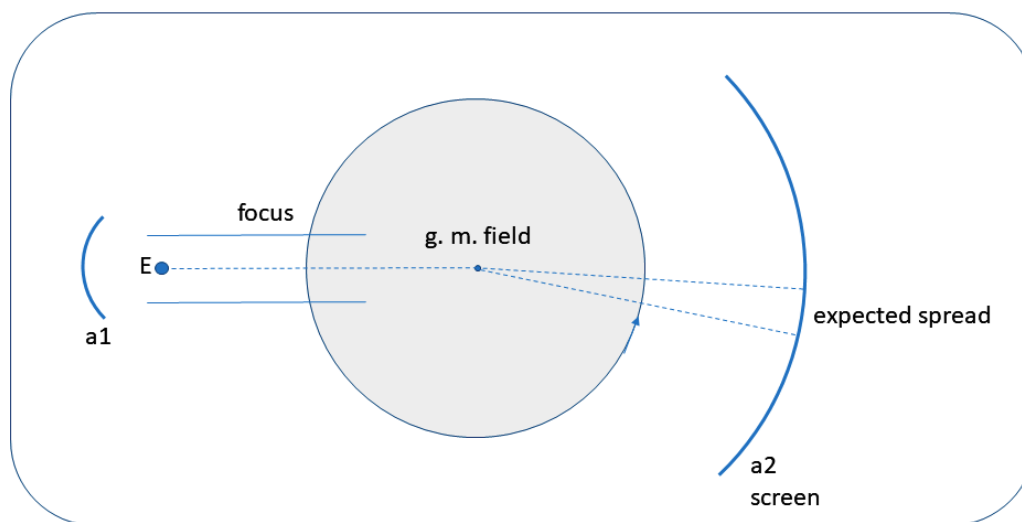
This angle's relationship to the deflection will be calculated by $\tan \alpha = 6.04E-3$.

In the last result, we find a deflection of $\Delta s < -6$ mm in a distance of $R = 1$ m to the indicator of the electron beam. A positron beam had to hit the indicator at $\Delta s > +6$ mm. Reverse rotation of lead ring generates reverse results.

I think that this deflection can be shown by precise instruments or by changed parameters for better results than my suggestion.

Electrons, positrons cannot fly as slow as necessary. We must build a special apparatus. The following illustration should help to understand this construction.

Illustration 3 (self-made): Lepton Pulsating Tube



First, a lepton beam has to be emitted (E), focused and accelerated. Second, reaching the area of the most influence of the gravitomagnet in the center of the ring (g. m. field), this beam has to be decelerated strongly. This way, it can be deflected now. Third, we have to attract and accelerate this loitering beam receiving enough kinetic energy now to hit the screen on a very small area of lightening.

A good precondition is the tiny mass of an electron that reaches a small radius R. Velocity of a single electron may be a problem indicating it on a screen. Best may be a semiconductor screen indicating hits of electric charges. If it nevertheless would be difficult, you could shift parameters of circulation of lead disk increasing gravitomagnetic force, more rotation speed and more material.

Ordinary speed of electrons free in vacuum equals

$$v = U^{1/2} \times 593,044.2 \text{ m/s} \quad (U \text{ in Volt of anode voltage of an electron tube})^3.$$

Just 100 μV lead to the velocity of 5.9E3 m/s. It will be very difficult braking electrons' current to the speed of 0.5 m/s.

What's to do? I construct a vacuum tube of special sequences called "Lepton Pulsating Tube".

First pulse: Emission of Leptons, acceleration, focusing and attraction of them by anode 2 (a2).

Second pulse: Switch on the anode 1 (a1) against anode 2, braking of the lepton beam, shifting of this beam by rotating mass of lead.

Third pulse: Switch off the anode 1, acceleration of the beam to the screen on anode 2. Detection of the hits on the screen.

Emission of positrons is possible by use of K-40, of electrons by use of Co-60.

Using such an experiment, we could prove two features of gravitation:

1st Real Existence of **Gravitomagnetism**

2nd Mass and Antimass are Contrasts of **Antigravitation**.

I hope that this experiment with modern technology is possible and finally successful.

Best regards

Jo

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- 1) Physik, VEB Fachbuchverlag Leipzig, pp. 280
- 2) <https://www.arcusuniverse.com> and <https://www.no-quarks.com>:
The Book Arcus I, pp. 328
- 3) Wikipedia's information
- 4) www.leifiphysik.de/elektrizitaetslehre/magnetisches-feld-spule/grundwissen/magnetfeld-einer-zylinderspule
- 5) <https://de.universaldenker.org/lektionen/210>