A new gravitation generation theory: gravitation is generated by the zitterbewegung of protons and triggert by the Heisenberg-Millette principle

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Abstract

The fact that the theory of relativity always provides correct data does not mean that the space-time curvature or masses themselves in fact produce gravity. And Albert Einstein was also unable to answer how masses can generate gravity. In this paper we present a modality by which masses are able to generate gravity, namely the rapid oscillatory motion of protons (the so-called zitterbewegung). Protons are contained in every mass and due to their rapid oscillatory rotation, as could be simulated using trapped ions, like a centrifuge pull everything inside that is within range of their oversized quantized radius. In the case of a proton, this radius is more than 19 powers of ten larger than its actual radius, so that mvr ≥ h/2 (Heisenberg-Millette) is fulfilled.

Introduction

So far, it has always been rejected that particles rotate due to the spin of the particles, since the same spin value was always measured for all particles (ħ/2 or ħ) and the calculation results in a rotation velocity value that is much too high, so that some particles would have to rotate faster than the light (1). The so-called zitterbewegung is a theoretical, rapid rotation of the particles, which contradicts this and which could be simulated using trapped ions. For the hydrogen atoms, zitterbewegung can be invoked as a heuristic way to derive the Darwin term, a small correction of the energy level of the s-orbital (2).

Contrary to the widespread opinion, which is now in fact 100 years old and is based on the views of Stern and Gerlach, the spin of particles does have something to do with the Heisenberg uncertainty principle. $\Delta E \Delta t \geq h/2$ must be fulfilled in the case of energetic relevance or a measurement. Hereby, it must be taken into account that the Heisenberg inequality modified according to Millette (3) is correctly called $\Delta x \Delta p \geq h/2$ and that the intrinsic motion of elementary particles is only quantized if it is involved in an energetic exchange process or is measured. Here, an oversized radius and not the rotation velocity is quantized or the consequence of the quantization, since v is canceled out from the equation. Therefore, an oversized constant spin does not mean that the particles are not rotating because they would then be faster than c, but simply that energy is withdrawn from the particle for measurement or exchange so that the Heisenberg-Millette inequality is satisfied. Hence the constant spin value, which only indicates the value of the inequality. If one would weigh the electron from the silver atom in the Steinlach-Gerlach experiment after the deflection, this would be easy to show. This could be done by measuring the energy and impact velocity v, then dividing E/v^2 to get the mass. It should then be less than $9{,}109.10^{-31}$ kg.

Theory

If the rapid oscillatory motion is a circular rotation, the velocity of rotation could be increased using magnetic fields. In this context, we were able to calculate a frequency value for protons using data from CERN. The core of the calculation is that the excited frequency of the protons in the synchroton can be calculated from the so-called Larmor frequency f'/B, which has a constant value, since the field strength B of the magnets is known. By determining the factors by how much the frequency in the pre-accelerator and synchrotron has increased compared to the original value, one can deduce the original, unexcited frequency of the proton by simple division. From this calculation it is about 2072.85 Hz (4). This fast spin value is consistent with the so-called zitterbewegung that has been postulated for particles. The zitterbewegung is a theoretical, fast movement of elementary particles electrons or protons that obey the (relativistic) Dirac equation. The results calculated here match the zitterbewegung. The existence of such a motion was postulated by Gregory Breit in 1928 and confirmed by Erwin Schrödinger in 1930 as a result of his analysis of wave packet solutions of the Dirac equation for relativistic electrons in a vacuum (5).

The frequency calculated here can be confirmed correctly via the velocity of the protons, which is mediated by the gravitation within the proton:

$$\frac{mv^2}{r}=\frac{m^2G}{r^2};\frac{v}{2\pi r}=(\frac{mG}{r})^{1/2}=2071.87\,Hz$$

which corresponds fairly exactly to the frequency determined using CERN data.

Because protons rotate quickly, as calculated using data from CERN, they act like centrifuges. The mass of a proton can be assumed as the sum of virtual mass points inside the proton rotating freely at a distance around the center of the proton. It is known that in a mass formation with freely moving substructures, which rotates rapidly as a whole, a specific mass distribution

$$\rho(\vec{r})=\rho_i/1+\frac{r^2}{r_c^{\,2}}$$

is generated under isothermal conditions. This mass distribution corresponds to a density gradient within the mass formation of m/r^2 (this is also roughly the density distribution in galaxies or in other rapidly rotating mass distributions)

$$\omega^2 r=4\pi^2 f^2 r=\frac{\beta m}{r^2};\beta=\frac{4\pi^2 f^2 r^3}{m}$$

The rotation of the proton can be compared to a density gradient centrifugation using a special centrifuge, in which the density gradient of the centrifugate is also constant. A rapidly rotating proton accelerates the virtual mass points inwards. Analogously to the centrifuge, the resulting density gradient within the proton is proportional to the centripetal acceleration.

$$\frac{d\rho}{dr}=\frac{\omega^2 r}{\beta}$$

(dρ/dr is the density gradient, ß is a proportionality factor). With the help of this formula we were able to determine the proportionality factor between the centrifugal acceleration of a mass point at the edge of the proton and the density gradient:

$$mgr(x)=m\frac{m\beta}{r(x)^2}r(x)=\frac{m^2\beta}{r(x)}$$

Hence, all mass-points are accelerated inward by fast rotation. In addition to their kinetic energy, the mass points also have potential energy because they rotate at a distance around the center of the proton. The potential energy of a mass point that has the distance from the center is calculated accordingly as

$$mgr(x)=m\frac{m\beta}{r(x)^2}r(x)=\frac{m^2\beta}{r(x)}$$
$$gr=\frac{m\beta}{r}$$

(g is the centripetal acceleration). Due to the fact that mass points at the edge of the proton rotate faster than those circling closer to the center, there is a potential gradient from the outside to the inside, but this is strictly linear. Since the punctiform center itself does not rotate, the potential difference is between inside and outside

$$\varnothing\,(\vec{r})=\int_{r_i}^{r} g\,dr$$

which also results from the simple subtraction of the outer from the inner potential. Due to this potential difference, a gravitational energy arises in the proton, which multiplies the potential difference with the proton mass

$$E_G=\frac{m^2\beta}{r}$$

The gravitational force depends on the force field by definition

$$\vec{F}(\vec{r}) = mg(\vec{r}) = \frac{-mM\beta}{r^2}$$

(Ø is the gravitational potential, g is the gravitational field strength and ß is the proportionality factor). This proton field is not limited, its field lines extend up to the quantized radius of the proton calculated from mvr=h/2, comparable to the electric field of a charge distribution. The quantized radius r of a proton has the value $1.7.10^4$ m, that of our Milky Way $1.6.10^{23}$ m. This also shows that the gravitation is incomplete and that only neighboring galaxies like Andromeda are attracted by the Milky Way. The dependence on the distance is r^2. Since the field strength of the field is an acceleration towards the proton center, every body and particle with a mass > 0 is subjected to an attractive force, the field corresponding to a monopolar gravitational field.
Next, to test the hypothesis, I calculated the proportionality factor:

$$g(r) = \omega^2 r = \frac{m\beta}{r^2}; \gamma = \frac{\omega^2 r^3}{m} = \frac{4\pi^2 f^2 r^3}{m} = const. =$$
$$= \frac{4\pi^2 f_m{}^2 r_0{}^3}{m_p} = 6.674 \frac{m^3}{kgs^2}$$

Substituting the values for = 2072.84 Hz, r = $0.87.10^{-15}$ m, m = $1.6726.10^{-27}$ kg into this equation gives a value for the constant of proportionality of 6.674 m^3/kgs^2, which corresponds to the value of the gravitational constant with a deviation of only 6 hundred-thousandths. The hypothesis can thus be verified. The field whose force vector points to the proton center is caused by the constant monopole moment of the exact magnitude of the proton mass. Due to the superposition principle (9) for conservative fields, for bodies of mass M that contain protons, (M is the mass of a proton):

$$\vec{g}(\vec{r}) = \sum_{n=0}^{\frac{M}{m}} \frac{\vec{v}_m{}^2 r_0}{r^2} = n \cdot \frac{mG}{r^2} = \frac{(M+\Delta M)}{m} \frac{mG}{r^2} = \frac{(M+\Delta M)G}{r^2}$$

Thus, this fixed relationship holds for all macroscopic masses and distances. But how can one explain the exact mechanism? Well, the answer is relatively simple. The reason why protons, like a centrifuge, not only attract mass points within the proton but also instantaneously masses far away, is due to the fact that the proton radius is quantized to an oversize of $1.8.10^4$ m (h/2mv = h/4πfrm) and up to 5.10^{23} m in the case of the Milky Way. Summing up, the small gravitational fields of the protons result in the gravitation of the individual large masses in the universe, except for the mass defect. The proton rotation is therefore very likely the cause of gravitation in this universe and the theory of relativity is only its effect on space-time, which also explains why the values in the theory of relativity (ART) are always correct. To check this, I calculated the Earth's gravitational ray power by simply multiplying the radiant power of a proton by the number of protons contained in the Earth. We received a value of 200.85 W, which, within the limits of measurement accuracy, corresponds exactly to the Earth's gravitational ray power of 200 W, which was measured using the beam deflection of a quasar. This is strong evidence that the rapid rotation of the protons creates a gravitational potential and is emitted via radiation from Earth. Finally, the mass attraction occurs through the long-distance attraction of up to 10^{23} m, which corresponds to the quantized radius of a proton. This can be determined using the relation mv(rPb)½= h/2 (b = r is also the range of gravity). With the mechanism of proton fields as the basis for the gravitation of masses, every mass and every particle composed of protons has a gravitational field. Here, the curvature of space would not be necessary to explain the attraction of masses. In particular, the perihelion rotation of Mercury and the gravitational lensing effect are the most frequently cited arguments for the proof of a curvature of space as the cause of mass attraction. We also derived this two quantities and the matched exactly to the reseults of the relativity theory.

A Franco-German research team recently showed that gravity is significantly influenced by the Earth's magnetic field (6). They used magnetic field measurements from the GFZ satellite CHAMP and extremely accurate measurements of the Earth's gravity field, which originate from the GRACE mission (7). This also supports the assumption of a gravitational field (as the sum of individual proton fields) that can be influenced, and not the idea of gravitation generated by space curvature, while this form of attraction assumes a constant gravitational acceleration and constant gravitational constant that cannot be influenced. Since the earth's magnetic field is in the range of the magnetic field of a proton, a higher local magnetic field of the earth (high fluctuation) slightly increases the rotation speed of the protons and thus the gravitation constant.

Any mass distribution other than that presented in this article (particularly a non-spherical or non-cylindrical distribution, or a homogeneously or inhomogeneously filled body or sphere) results in higher moments than a monopole moment for the generated force field. For example, mass distributions have, among other things, a quadrupole moment. The lowest order of gravitational waves is quadrupole radiation, which corresponds to the propagation of quadrupole radiation. From these observations, the hypothesis can be extended as: Depending on its specific distribution, an accelerated mass distribution produces a field (or radiation) with monopolar or higher moments.

In summary, a specific mass distribution arises in a well-isolated mass formation with freely mobile substructures, which very fast rotates as a whole. The potential difference between the outside and inside of the individual rotating masses (points) generates gravitational energy and a radially symmetric monopolar gravitational field that attracts mass, with field lines perpendicular to the centripetal force. This mass distribution corresponds to a density gradient within the mass formation, while the field strength is proportional to this density gradient. Such force fields arise both in the macrocosm (for the Milky Way, solar system) and in the microcosm (protons). The gravitational constants of individual masses are not exactly identical due to their different mass defects. With the gravitational model described here, all four basic forces can be unified relatively easily (8).

This can be proven many times, for example, large masses around the mass defect would be smaller than measured by gravity, the perihelion rotation of the planets and the deflection of light by large masses could be demonstrated in a further publication (9), the earth's magnetic field would influence the protons and thus also the gravitational constant, which has already been shown (6), the gravitational constant would not really be constant, which is also the case (10), etc. Dark matter would also no longer remain a mystery, since galaxies rotate quickly like protons, have a similar density distribution and build up an additional field that is equal to the gravitational mass. This would attract galaxies with 2G, but only those that would be in the range of gravity = quantized radius. This can be easily confirmed by measurements of the approach of our neighboring galaxy Andromeda

$$=1/2\,mv^2=\frac{mMG'}{d};\;G'=\frac{1/2\,v^2 d}{M}=2.0204\,G$$

v is the mean radial velocity = 150 km/s, M = 1012 solar masses and d= 2.52 million light years, exactly calculated radial velocity 149.238 m/s). The gravitation would then be instantaneous but would not have an infinite range, the range would be around 10^{23} m. Perhaps an explanation for the dark energy could also be found with this, because the incomplete gravitational effect could be an explanation for the expanding universe with increasing acceleration.

Conclusion

The spin and other quantities in particle physics are only quantized for the purpose of energetic exchange, in a measurement or in coupled processes. Quantization means that a quantity is changed and usually significantly increased in order to satisfy the Heisenberg inequality. In the case of photons, the rotation component (velocity) is quantized to c, and the photon has no actual intrinsic rotation but ideally moves with c on a spiral helix or more complex path. Electrons have both an inherent rotation in free flight and an orbital momentum. The quantities in particle physics differ significantly in the quantized state from those in the unquantized state. Photons and bosons have a spin of 1 because they do not have an inhomogeneous density distribution, hadrons and leptons have a special density distribution and therefore a half-integer spin (11). Since the speed is canceled out of the spin derivation formula, the rotational speed is never quantized in spin interactions or measurements, it has its very special value. In magnetic resonance tomography, this value is increased differently by magnetic fields and therefore indicates different specific densities in the tissue. Since we always measure the angular momentum, it assumes the value of the Heisenberg inequality because it would otherwise be too small. Hence the constant spin value. If one would do serious research, one would also carry out measurements to determine or falsify the rotational velocity of the particles, instead always dogmatically claim that "they don't rotate" what is not even substantiated by experiments. Measuring the angular momentum is not the right thing to do, one would have to design and carry out completely different experiments. For example, the rotation velocity of the particle could be deduced by determining the mass of different particles after the deflection in the Stern-Gerlach experiment using E/v^2 and subtracting the energy difference from the actual mass of $E/4\pi$: $f=(mv^2/4\pi - \Delta mc^2)/2h$. The same applies to the dogma of symmetry in particle physics, e.g. that all elementary particles and antibodies formed in the same amount at the same time 813). This is neither realistic nor intuitive. The fact that the theory of relativity always delivers correct data does not mean that the space-time curvature or masses themselves also produce gravity. And Albert Einstein was also unable to answer how masses can generate gravity. Clearly, via the protons, which are contained in every mass and which, due to their rapid rotation like a centrifuge, pull everything inside that is within reach of their oversized quantized radius. Which in the case of a proton is more than 19 powers of ten larger than its actual radius, so that $mvr \geq h/2$ (Heisenberg-Millette) is fulfilled.

References

(1) W. Gerlach, W, O. Stern, Der experimentelle Nachweis der Richtungsquantelung im Magnetfeld. *Zeitschrift für Physik*. 9 (1): 349–352. doi: 10.1007/BF01326983 (1922)

(2) A. Sommerfeld, Zur Feinstruktur der Wasserstofflinien. Geschichte und gegenwärtiger Stand der Theorie. *Naturwissenschaften* (in German). 28 (27): 417–423. doi:10.1007/BF01490583 (1940)

(3) P. Millette, The Heisenberg Uncertainty Principle and the Nyquist-Shannon Sampling Theorem, Progress in Physics, arXiv:1108.3135, http://doi.org/10.48550/arXiv.11083135 (2011)

(4) M.B. Blau, M.B, And yet they turn, database docdroid.com. https://docdro.id/fs1XAwM Accessed 19 March 2022

(5) C. Wunderlich, Quantum physics: Trapped ion set to quiver. *Nature News and Views*. 463 (7277): 37–39. doi:10.1038/463037a (2010)

(6) M. Dumberry, M. Mandea, Gravity variations and ground defomations resulting from core dynamics, Surveys in Geophysics 43 (1), 5-39 (2011)

(7) M. Mandea, V. Dehant, A. Cazenave, GRACE – Gravity Data for Understanding the Deep Earth's Interior, Remote Sensing 12 (24), 4186 (2011)

(8) M.B. Blau, Big Bang and the inflation phase, database docdroid.com https://docdro.id/BQpqgWq Accessed 16 March 2022

(9) M.B. Blau, Und sie drehen sich doch, first edn. (United p.c.-Verlag, 2022). pp. 65-77

(10) C. Speake, T. Quinn,: The search for Newton's constant. In: Physics Today. Band 67, Nr. 7, 2014, S. 27, doi:10.1063/PT.3.2447.

(11) M.B. Blau, The spin of particles. Database docdroid.com https://docdro.id/K5E3aVu. Accessed 14 Febr 2022