Theory of Everything

PD Dr. Melissa Blau, University of Tübingen

The main problem in formulating a theory of everything is that established methods known from other quantum field theories cannot be directly transferred to the general theory of relativity. Understanding the cause of gravity and the other three interactions can reveal more far-reaching relationships than the general theory of relativity and quantum theory can. We will show that all four basic interactions can be expressed by $E_i = ge\overline{v}cB/8\pi f_r$, where $\overline{v}$ is c for the electroweak force and the nuclear force, while for gravity it is the square root of the gravitational potential $v = \sqrt{mG/r}$.

Introduction

Quantum mechanics is a special description of the physics of subatomic particles (1,2). The first of two differences to classical physics is that Heisenberg's principle is more applicable here, as we are dealing with very small quantitative quantities for which Heisenberg's inequality (3) is not always fulfilled. A particle is also predetermined by the ratio of its De Broglie wavelength and its radius as to whether it behaves more like a particle or more like a wave (particle-wave dualism of small particles, e.g., the probability of electrons residing in atoms). If the ratio is large, as with electrons and quarks, the particle will behave like a wave; if the ratio is small, as with protons, the particle will no longer exhibit wave properties. Therefore, proton-based processes such as gravitation cannot be captured in quantum theory or expressed as a wave function. All "mysterious" observations in quantum physics can be traced back to Heisenberg's inequality and this particle-wave duality. It has long been understood that electromagnetic energy is emitted in quanta (photons) (4), but there are also forms of energy that are not quantized, such as dark energy. The hydrogen problem, for example, can be solved with the help of Heisenberg's inequality and wave equations (4). The GUT theory, a quantum-theoretical summary of the weak, electromagnetic interaction and nuclear force, has proven to be invalid (5), and the Planck scale is also not valid, as the four fundamental forces were never equal in the Big Bang, which is clear from the causes of gravity described here (6). Therefore, instead of trying to find a quantum mechanical description of gravitons, it only makes sense to combine the four fundamental forces in a different theoretical way into a TOE formula. Heisenberg's inequality has several formulations and these must always be treated specifically, e.g., with a certain formulation ($\Delta L \Delta\varphi >= h/2$ according to Pierre A. Milette (7)) the spin of particles can be calculated from the inequality. From this it can be seen that the spin measurement value only shows the value of the inequality divided by $\Delta\varphi$ =2π, while the real angular momentum and angular velocity are much lower. With this knowledge, one can rightly doubt the fact that nucleons, for example, do not actually rotate (7). The gravitational force from the general theory of relativity is also not sufficiently understood, as the background that leads to this force was not yet known. For example, G is not constant and varies slightly with a variable Earth's magnetic field, as was shown by measurements in the GRACE mission (8), as according to this theory, gravity is based on the rotation of protons in space and this can be influenced by magnetic fields. According to the physicists' interpretation, tiny changes in the Earth's gravitational pull are caused by mass displacements associated with the flow of currents in the Earth's core (9). With the concept of gravitational force generation presented here, the rotational speed of the protons in the Earth's mantle and thus the gravitational constant itself (G=v2r/m) should change much more as a result of changes in the Earth's magnetic field, as the rotational speed of particles in magnetic fields is increased (Larmor frequency). This can also be seen,

for example, in the fact that the old original kilogram in Paris has been steadily losing weight for unknown reasons (10), while the earth's magnetic field has been steadily decreasing for centuries (11). This problem cannot be solved, however, by the newly introduced silicon sphere (12). If one considers that the earth's magnetic field is transmitted to iron in the earth's mantle and that this makes up 6% of the earth's mantle, whereby the mass of the earth's mantle is approx. 42% of the earth's mass, G should be higher by a factor of $1+\left(\frac{B_m}{B_p}\cdot 2.5\cdot 10^{-2}\right)^2 \approx 1.0006$ than the G of the protons (B_m magnetic field density earth's magnetic field, B_p magnetic field density protons) due to the influence of the earth's magnetic field depending on its value. Gravity is also probably not infinite but limited (6), which can explain dark matter and dark energy, namely that gravity ends at a certain distance and thus free energy in the empty spaces and mass-loaded gravitons within the galaxies have formed as compensation during further expansion. Such a process is also known from electricity, for example, where photons are emitted to compensate for the loss of electrical charges (when electrons are knocked out of a light bulb).

All these new findings have solved many of the mysteries of physics, such as the puzzle of the different sizes of the proton radius (13). Based on new findings (new physics), a singularity in the Big Bang and the creation of quarks by an energy density can also very probably be ruled out, which favors the theory of the creation of originally neutral quarks from electromagnetic radiation (14). A TOE formula can be derived from the cause of gravitation described here, which conforms to GRT and is also based on the origin and nature of the other three fundamental forces:

$$E_i = \frac{ge\bar{v}cB}{8\pi f} \quad (1)$$

where v is c for the electroweak force and the nuclear force, while for gravity it is the square root of the gravitational potential v=√mG/r.

Derivation

$$\boxed{E_i = \frac{gec\bar{v}B}{8\pi f}}$$

We have shown that protons have different relative velocities as they rotate around themselves, the earth, the sun, the center of the galaxy, etc. There are also relative velocities within the proton, which lead to a different range of the forces and a different quantized radius, since all interactions are based on Heisenberg's principle, which states that ΔpΔx>=h/4π. Since ΔpΔx is smaller than h/4π for all interactions, Δx is quantized to R=h/4πΔp=c/8πfr (effective quantized radius). This could be shown impressively in a recent publication in Science Advance (6).

The gravitational energy is derived in equation (1) from the relationship for the potential energy mcv, which is equal to the torque of the proton. Since the torque is in turn equal to the magnetic moment of the proton multiplied by the magnetic flux density, a relationship for the gravitational energy of the proton to the magnetic flux density can be derived from this formula, which corresponds to the formula above.

$$E_g = \frac{mvc}{4} = hf_g = m \times B = g\frac{e}{2m}\frac{h}{2\pi}B = \qquad |\cdot\frac{4\pi\bar{v}mR}{h} = 1$$

$$= \frac{ge\bar{v}cB}{8\pi f} \qquad g = 5.585 \qquad (2)$$

With Coulomb energy as electromagnetic energy (2), there is the relationship between electrical charge ($q^2/4\pi\varepsilon_0 r$) and the magnetic flux density via the magnetic field strength $H=\Delta q/r\Delta t$ in a circular conductor. In a proton, the charge is not evenly distributed; when a proton rotates, a current flow occurs, the frequency f_r in this case being the inverse of the time in which the charges (in the quarks) rotate.

$$E_e = \frac{e^2}{4\pi\epsilon_0 r} = \frac{e^2c^2\mu_0}{4\pi r} = \frac{e^2c^2B}{4\pi rH} = \qquad |\ \cdot\frac{grH}{2ef} \approx \frac{I\Delta t}{\Delta q} = 1$$

$$= \frac{gec^2B}{8\pi f} \quad \bar{v} = c \qquad f = \frac{grB}{2e\mu_0} = 216789.007\ Hz \qquad (3)$$

The nuclear energy between the quarks (3) is achieved via the Lorenz force F=qvB (magnetic field of a proton), which holds the proton together over a distance that corresponds to the quantized radius of the proton.

$$E_n = gecBR = \frac{gec^2B}{8\pi f} \qquad f = f_g = 2180.34\ Hz \quad \bar{v} = c \qquad (4)$$

The weak interaction (4) acts via the same Lorenz force, which also causes the quark structure to rotate in a direction perpendicular to the main rotation axis, but over a different quantized distance $R=c/8\pi f_r$, whereby this frequency f_r comes from the special constellation of the joint rotation of the quarks in a proton.

$$R = \frac{h}{2\pi mv} = \frac{h}{4\pi^2 mfr} = \frac{2\pi mch}{16\pi^2 mfh} = \frac{c}{8\pi f}, \qquad r = \frac{4h}{2\pi mc} = 0.8412356\ fm \quad (5)$$

Because quarks move at almost the speed of light within the nucleon, they have a certain DeBroglie wavelength/frequency $f_d=c/\lambda=mc^2/h$, which leads to a bound rotation of the quarks (matter waves or rotational waves) with a rotational speed of $v=2\pi rf_d$ (r is the distance between the quarks), whose rotational wave frequency f_r is calculated from $fr=mv^2/h$.

$$E_w = gecBR = \frac{gec^2B}{8\pi f} \qquad f = \frac{4\pi^2r^2f^2}{h} = \frac{4\pi^2r^2m^2c^4}{h^3} = 1.07 \cdot 10^{16} Hz$$

$$\bar{v} = c \qquad (6)$$

Conclusions

As we can see from these derivations, the interaction energy is always dependent on the Lorenz force multiplied by the Landé factor and the quantized radius, regardless of the interaction in question. All interactions can be converted into this form. The Zeemann effect, the splitting of spectral lines by a magnetic field, also has the same form. The splitting is caused by the different displacement of energy levels of individual states under the influence of an external magnetic field. This underlines especially in the case of gravity, the dependence of gravity on the magnetic field of the proton and therefore the dependence on its own rotation. It should be noted that the gravitational force of a proton at a distance of one proton radius is mathematically equal to the Lorenz force $F_L = e\bar{v}B$ multiplied by the Landé factor g.

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