Gravity Interaction With Forcefields

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Abstract

It is well known that strength of gravity is about 40 orders of magnitude weaker than strength of other force fields. On this statement is based generally accepted meaning that gravity dominates only in cosmic scale and cannot influence micro scale events. Here we show that absolutely everything in nature is affected by gravity.

Keywords: physics, space, gravitation, Unified Field Theory, electric field, magnetic field, strong (nuclear) field, Shnoll effect, force, Moon, Sun, tide, mass, charge, philosophy of science

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Four fundamental forces, i.e., strong (nuclear), electromagnetic, weak and gravity, are in nature. If the strength of the nuclear force is assumed to be 1 unit, then the strength of electromagnetic force is 0.01 unit, the strength of weak force is 10^{-13} and the strength of gravity is only 10^{-38}. Therefore, it is inconceivable that gravity could affect processes in which nuclear or electromagnetic forces are the main ones. On the other hand, the Shnoll effect [1] experimentally proves that small changes in gravity field affect practically everything.

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To explain this, let's look at Newton's law of gravity:

$$g = G\,M/r^2 \qquad (1)$$

where: g – acceleration due to gravity of the Earth;
G – gravity constant;
M – mass of the Earth;
r – distance.

The force of the Earth's attraction is most affected by the Moon and Sun. The acceleration due to gravity of the Moon on the sea level is $-1.1*10^{-7}$ of g and acceleration due to gravity of the Sun is $-0.52*10^{-7}$ of g. The sign "minus" means that attraction of the Moon and Sun is opposite to attraction of the Earth. Therefore actual acceleration due to gravity is less than g. The G and mass of the Earth M in the equation (1) are constants. As consequences variable is only distance r:

$$r_a^2 = GM/(g - \Delta g_a), \qquad (2)$$

where: Δg_a – actual acceleration due to gravity of the Moon (Sun);
r_a – effective (actual) distance.

The actual acceleration is a vertical component of total Moon's acceleration that acts in the same direction as the Earth's acceleration or in an opposite direction.

This conclusion agrees with statement that gravity and space (distance) are different appearance of one phenomenon [2] or in other words the space and gravity are synonyms.

Therefore Coulomb law must be written as follows:

$$E = q(g - \Delta g_a)/(4\pi\varepsilon GM), \qquad (3)$$

where: E – strength of electric field;
q – charge;
ε – permittivity.

The strength of magnetic field according to Gilbert law:

$$H = \mathscr{M}\,(g - \Delta g_a)/(4\pi\mu GM) \qquad (4)$$

where: H – strength of magnetic field;
$\mathscr{M}$ – magnetic charge;
μ – permeability.

The strength of nuclear field [3]:

$$N = B(g - \Delta g)^{3/2}/(\Pi_B G^{3/2} M^{3/2}), \qquad (5)$$

where: N – strength of nuclear field;
B – baryon charge;
Π_B – propagation of nuclear field.

Conclusions

Equation (2) show that the weakening of gravity causes an increase in the effective distance. As a result, the field strength according to equations (3, 4, 5) also decreases. This applies to all force fields including electromagnetic and nuclear.

The equations (2 - 5) are valid only on the Earth.

As the Moon's and Sun's gravity is 6 orders weaker than the Earth's gravity on the sea level, its effect can only be measured by very sensitive methods like Shnoll histograms [4]. The exception is a tide, the magnitude of which is small in relation to the radius of the Earth, but large in relation to the size of man.

References

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