What is gravitational constant?

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ABSTRACT

Gravitational constant is the square ratio of proton and atomic radius.

The ratio of the nuclear force and gravity, the relationship to the gravitational constant:

As indicated in Fig. 1, the squared ratio of the average covalent radii (1 Å = 100 pm) or the Bohr diameter of the electronic hydrogen to the charge radius (0.8751 fm) of the proton almost equals the gravitational constant.

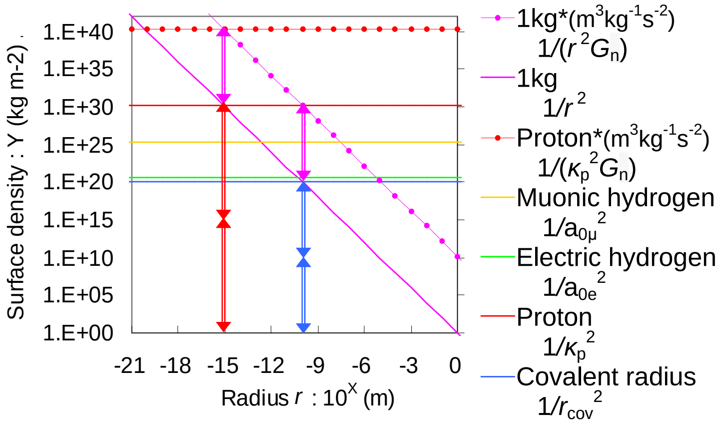

FIG. 1. Ratios among quantum size, nuclear force, and gravity. The pink solid line is the surface density line of 1 kg of substance. The pink dotted line is the line, obtained by dividing the pink solid line with the gravitational constant. The red horizontal dotted line is the proton line, scaled to a proton mass of 1 kg at one meter. This line represents the strength of the pr oton force relative to gravity. The proton force is 1×10^{40} times higher than gravity, of which 1×10^{10} is contributed by the gravitational constant (G_n), and $1 \times 10^{(15 \times 2)}$ is contributed by th e spin radius. The solid red line is the surface density line of proton, of which 1×10^{10} is cont ributed by G_n, and $1 \times 10^{(10 \times 2)}$ is contributed by the covalent radius (blue solid line).

The material density of the average covalent radii or the Bohr diameter of the electronic hydrogen may have been scaled by the gravitational constant because the mass of the nucleons approximates the mass at the average covalent radius or the Bohr diameter of the electronic hydrogen. That is,

$$G_n/(1\mathrm{m}^3\mathrm{kg}^{-1}\mathrm{s}^{-2}) \approx (r_p/r_{cov})^2 \approx (r_p/2a_0)^2. \quad (1)$$

The ratio of the gravitational and nuclear forces, which relates the proton radius to the average covalent radius or the Bohr diameter of electronic hydrogen, is given by

$$r_p^2 G_n/(1\mathrm{m}^3\mathrm{kg}^{-1}\mathrm{s}^{-2}) \approx r_p^4/r_{cov}^2 \approx r_p^4/(2a_0)^2. \quad (2)$$

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