Linking Inverse Square Law with Quantum Mechanical Probabilities

SHANTILAL GORADIA, Gravity Research Institute, Inc. — (©2007 by S Goradia) I modify the Newtonian inverse square law with a postulate that the probability of interaction between two elementary particles varies inversely as the statistical number of Planck lengths separating them. For two nucleons a million Planck lengths apart, the probability of an interaction is a trillionth (almost never), seemingly contradicting gravity. Likewise, statistical expression of the size of the universe implicitly addresses the issue of dark energy by linking fine-structure constant \( \alpha = 1/137 \) with the cosmological constant \( \lambda = 1/R^2 \) (abstract submitted 11/11/07 for APS APR2008 meeting). Since light travels one Planck length per Planck time, the radius \( R \) of the spherical shape of the universe is \( 10^{60} \) Planck lengths, linking the cosmological constant \( \lambda = 1/10^{120} \) (see equation 14 in Einstein’s 1917 paper) with \( \alpha \) by the relationship \( 1/\alpha \approx \ln \sqrt{1/\lambda} \). Intuitive answers to the questions raised suggest that the elementary particles interact via Planck scale mouths (1) with higher probabilities at smaller distances. This intuition may be supported by genetics, explaining issues such DNA – nucleosome interaction (2)(3). [1] http://www.arxiv.org/pdf/physics/0210040 [v. 3] [2] www.gravityresearchinstitute.org [3] Segal E. et al, A genomic code for nucleosome positioning. Nature 442, pp. 772-778, 2006.