Further thoughts on, " On a general theory of gravity based on Quantum Interactions ". Part One.

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1) In this theory, the mass 'M' is strictly defined by the famous mass/ energy equation by Einstein, $M = E/c^2$. This is different from the definition of mass as defined by Newton's first law of motion.

2) A consequence of # 1 is that the inertial mass given by $M_I = F/a$, where F = force acting upon M_I and 'a' is the acceleration of M_I is equal to the gravitational mass given by $M_g = F_G/g$, where F_G is the gravitational force acting on mass M_g and 'g' is the gravitational acceleration. In short, $M_I = M_g$. This is also, of course, Galileo's " Principle of Mass Equivalence ".

3) Defining mass as E/c^2, automatically converts the " matter density " equation, $\rho_m(r) = \rho(M,r) = \lambda K M (1 - e^{-\alpha K/r^2})$, with $K = (1 - e^{-m\beta})$ into an " energy density " equation given by, $\rho_E(r) = \rho(E,r) = \lambda/c^2 \, K_E E (1 - e^{-\alpha K_E/r^2})$ with $K_E = (1 - e^{-\beta E/c^2})$. This makes it quite easy to understand how the " matter density " equation is applicable to all objects, from the sub-atomic to the cosmic.

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