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A Spinor Representation of Gravity

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We follow an old hypothesis that there exists an intimate connection between weak interaction and gravity, symbolized by the relationship between the Fermi and Newton's constants. We analyze the hypothesis that the effect of matter upon the metric that represents gravitational interaction in General Relativity is an effective one. This leads us to consider gravitation to be the result of the interaction of two neutral spinorial fields (g-neutrinos) with all kinds of matter and energy. We present three examples with only one g-neutrino: two static and spherically symmetric configurations and a cosmological framework for an isotropic dynamical universe. Without self-interaction, the associated effective geometry is precisely the Schwarzschild metric. On the other hand, a self-interacting g-neutrino generates a new gravitational black-hole.

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