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Quantum vacuum as the cause of the phenomena usually attributed to dark matter

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We show that if quantum vacuum fluctuations are virtual gravitational dipoles, then the phenomena usually attributed to hypothetical dark matter, may be considered as a consequence of the gravitational polarization of the quantum vacuum by the immersed baryonic matter; apparently, at least mathematically, the galactic halo of dark matter can be replaced by the halo of the polarized quantum vacuum. The eventual gravitational effects of the quantum vacuum “enriched” with virtual gravitational dipoles, can be revealed by the study of orbits of tiny satellites in trans-Neptunian binaries (for instance UX 25 and Eris-Dysnomia).

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