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Dynamical dark energy and the relativistic bohm-poisson equation

Carlos Castro Perelman
Clark Atlanta University, USA

The nonlinear Bohm-Poisson-Schrodinger equation is studied further. It has solutions leading to repulsive gravitational behavior. An exact analytical expression for the observed vacuum energy density is obtained. Further results are provided which include two possible extensions of the Bohm-Poisson equation to the full relativistic regime. Two special solutions to the novel Relativistic Bohm-Poisson equation (associated to a real scalar eld) are provided encoding the repulsive nature of dark energy. One solution leads to an exact cancellation of the cosmological constant, but an expanding decelerating cosmos; while the other solution leads to an exponentially accelerated cosmos consistent with a de Sitter phase, and whose extremely small cosmological constant is consistent with current observations. We conclude with some final remarks about Weyl's geometry.

$$\Lambda = \frac{3}{R_H^2},$$

Biography

Carlos Castro Perelman received his B.S in Physics at MIT in 1980 with an undergraduate thesis supervised by Prof. Philip Morrison. In 1991 he earned his Ph.D. in Physics at the University of Texas with Prof. Yuval Neeman. His goals and professional expertise are: continuing research in the Extended Relativity Theory in Clifford spaces developed by the author; Gravity, Strings, and Membranes; Grand Unification; Fractals, Quantum Field Theory, Mathematical Physics, Noncommutative Geometry and Number Theory.

perelmanc@hotmail.com

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