

A Manifestly Local Theory of Vacuum Energy Sequestering

Thursday 27 August 2015 15:00 (20 minutes)

We present a manifestly local, diffeomorphism invariant and locally Poincare invariant formulation of vacuum energy sequestering. In this theory, quantum vacuum energy generated by matter loops is cancelled by auxiliary fields. The auxiliary fields decouple from gravity almost completely. Their only residual effect is an *a priori* arbitrary, finite contribution to the curvature of the background geometry, which is radiatively stable. Its value is to be determined by a measurement, like the finite part of any radiatively stable UV-sensitive quantity in quantum field theory.

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Session Classification: Particle Cosmology

Track Classification: Particle Cosmology Theory and Experiment