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Dynamical dark energy from lattice quantum gravity

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Euclidean Dynamical Triangulation (EDT) is a lattice approach to quantum gravity that has produced results compatible with semiclassical gravity in four dimensions. Although the lattice gravity calculations are broadly consistent with an emergent four-dimensional de Sitter space geometry, the calculations give corrections to a purely constant cosmological constant term. These corrections are well described by a simple model for running vacuum energy. A determination of the parameters of the model from the lattice is presented, along with a discussion of the implications for cosmology.

Topical area

Particle Physics Beyond the Standard Model

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