

Quantum fluctuations of the compact phase space cosmology

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In the recent article Phys. Rev. D 100, no. 4, 043533 (2019) a compact phase space generalization of the flat de Sitter cosmology has been proposed. The main advantages of the compactification is that physical quantities are bounded, and the quantum theory is characterized by finite dimensional Hilbert space. The purpose of this presentation is to discuss the extraction of semiclassical effects from this model by way of canonical effective methods. First, a brief review of canonical effective methods is given. Afterwards, we discuss the character of the semiclassical solutions of the compact phase space cosmological model. Finally, a relation between the behavior of the quantum fluctuations of the cosmological sector and the holographic Bousso bound is discussed.

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