2019 Meeting of the Division of Particles & Fields of the American Physical Society



Contribution ID: 377

Type: Oral Presentation

Inflatinary Cosmology as a Precision Test of Quantum Mechanics

Tuesday 30 July 2019 14:36 (18 minutes)

Inflation predicts that quantum fluctuations determine the large scale structure of the Universe. This raises the striking possibility that quantum mechanics, developed to describe nature at short distances, can be tested by studying nature at its most immense – cosmology. By fully accepting the inflationary paradigm we realize this possibility. A nonlinear generalization of quantum mechanics modifies predictions for the cosmological power spectrum. Observational cosmology is sufficiently precise to place a stringent limit, $b \leq 3 \times 10^{-34}$ eV, on the size of the nonlinear term.

Authors: Dr ROSENZWEIG, Carl (Syracuse University); Dr GEORG, Julian (Syracuse University)

Presenter: Dr ROSENZWEIG, Carl (Syracuse University)

Session Classification: Cosmology & Dark Energy

Track Classification: Cosmology & Dark Energy