

Abstract Submitted
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Rolling With Quantum Fields MAINAK MUKHOPADHYAY, TANMAY VACHASPATI, Arizona State University — In cosmic inflation the quantum fluctuations of the inflaton are thought to break translational symmetry. Here we study the simpler problem of a classical rolling homogeneous field bi-quadratically coupled to a quantum field. We explicitly solve the problem using the newly developed classical-quantum correspondence, in which the dynamics of a quantum variable is seen to be equivalent to that of a complexified classical variable. We find that homogeneous initial conditions evolve homogeneously such that the quantum dynamics does not break translational invariance, contrary to the common lore of cosmic inflation.

Mainak Mukhopadhyay
Arizona State University

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