

Abstract Submitted
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Open quantum dynamics in the early Universe¹ NISHANT AGARWAL, University of Massachusetts Lowell, SARAH SHANDERA, The Pennsylvania State University, ARCHANA KAMAL, BRENDEN BOWEN, University of Massachusetts Lowell — Primordial perturbations are responsible for CMB anisotropies and structure formation in the Universe. We believe that the perturbations have their origins in quantum theory, though these effects are hard to detect. I will discuss the quantum dynamics of observable perturbation modes in the presence of interactions during inflation. In particular, I will describe an open quantum system framework that demonstrates a non-Hamiltonian and non-Markovian evolution of observable modes. I will also discuss preliminary results on evolution under a simplifying Markovian approximation and the resulting Greens functions.

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