

Abstract Submitted
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On Origin of Non-Gaussianity Outside the Horizon from Preheating after Inflation¹ YUKI WATANABE, Department of Physics, University of Texas at Austin, EIICHIRO KOMATSU, Department of Astronomy, University of Texas at Austin — We show that preheating after inflation produces non-Gaussianity of primordial curvature perturbations on large scales. It can be shown that entropy perturbations imprinted on a large scale can generate adiabatic perturbations on the same scale. Those generated adiabatic modes are non-Gaussian due to mode couplings if non-linearity is important. The previous work on non-Gaussianity from preheating used the δN formalism, coupled with the lattice simulation; however, the validity of δN formalism has not been verified for preheating. While we also use the lattice simulation, we have studied this issue using a different approach, namely, a covariant formalism for non-linear perturbations of cosmological scalar fields.

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