

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Entropy mode loops in reheating and cosmological perturbations

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The conservation of the curvature perturbation on superhorizon scales is an important feature for the inflationary predictions to hold. We show that in scalar field inflationary models, entropy mode loop corrections during reheating, which correspond to the inflaton decay products, can cause nontrivial superhorizon evolution of the curvature perturbation. Similarly, entropy mode loops are shown to produce significant non-gaussianity and modify the tensor power spectrum meaningfully. The effect becomes prominent when reheating occurs via parametric resonance (preheating), even indicating the breakdown of the perturbation theory, as we demonstrate in a specific chaotic model.

Tuesday, October 28, 2014, 2:30 pm
Robinson Hall, Room 250
Tufts University

Refreshments at 2:00 in Knipp Library, Room 251