中央大學物理學系

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Colloquium

k-essence induced by derivative

couplings of the inflation

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Abstract : We consider two models which couple derivatives of the inflaton to ordinary matter, both to fermions and to scalars. Such couplings induce changes to the inflaton kinetic energy, analogous to the cosmological Coleman-Weinberg potentials which come from nonderivative couplings. Our purpose is to investigate whether these quantum-induced k-essence models can provide efficient reheating without affecting the observational constraints on primordial inflation. In this talk, I will mention the theoretic model buildings and discuss numerical studies which show that it is not very easy to preserve both properties.