

Light inflaton completing Higgs inflation

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We consider the extension of the Standard Model (SM) with a light inflaton where both unitarity problem in Higgs inflation and vacuum instability problem are resolved. The linear non-minimal coupling of the inflaton to gravity leads to a significant kinetic mixing between the inflaton and the graviton such that perturbative unitarity is restored up to Planck scale. We show the correlation between unitarity scale and inflationary observables in this model and discuss how the effective Higgs inflation appears.

Presenter: Dr LEE, Hyun Min (Chung-Ang U.)

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