



Contribution ID: 375

Type: **not specified**

Supergravity Inflation in braneworld

Tuesday 24 August 2021 16:40 (20 minutes)

We discuss supergravity inflation in braneworld cosmology for the class of potentials $V(\phi) = \alpha\phi^n \exp(-\beta^m \phi^m)$ with $m = 1, 2$. These minimal SUGRA models evade the η problem due to a broken shift symmetry and can easily accommodate the observational constraints. In the high energy regime $V/\lambda \gg 1$, the numerical predictions and approximate analytic formulas are given for the scalar spectral index n_s and tensor-to-scalar ratio r . The models with smaller n are preferred while the models with larger n are out of the 2σ region. Remarkably, the ρ^2/λ correction to the energy density in Friedmann equation results in sub-Planckian inflaton excursions $\Delta\phi < 1$.

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Session Classification: Early Universe Cosmology

Track Classification: Early Universe Cosmology