



High Energy Physics - Phenomenology

Higgs inflation in minimal supersymmetric SU(5) GUT

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The Standard Model Higgs boson with large nonminimal coupling to the gravitational curvature can drive cosmological inflation. We study this type of inflationary scenario in the context of supersymmetric grand unification and point out that it is naturally implemented in the {em minimal} supersymmetric SU(5) model, and hence virtually in any GUT models. It is shown that with an appropriate Kähler potential the inflaton trajectory settles down to the Standard Model vacuum at the end of the slow roll. The predicted cosmological parameters are also consistent with the 7-year WMAP data.

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