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No-scale D-term inflation with stabilized moduli

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We study the effects of coupling hybrid inflation to moduli stabilization as employed in certain type IIB string compactifications with D-branes and fluxes. In a scenario with a single Kahler modulus stabilized in a racetrack potential, F-term hybrid inflation is unfeasible due to either a large inflaton mass or a tachyonic direction. However, we present a working model of D-term hybrid inflation with stabilized moduli. We discuss how the supersymmetric Minkowski vacuum at the end of inflation can be uplifted to a dS vacuum with TeV-scale gravitino mass without spoiling moduli stabilization or inflation. Moreover, we show that the considered model is equivalent to superconformal D-term inflation. The latter reproduces the Starobinsky model in the large-field regime, which makes it phenomenologically appealing in view of the recently published Planck data.

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