

Fundamental physics in the cosmos: The early, the large and the dark Universe



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Anti-brane induced inflation

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We develop a new class of supergravity cosmological models where inflation is induced by terms in the Kähler potential which mix a nilpotent superfield S with a chiral sector Φ . As the new terms are non-(anti)holomorphic, and hence cannot be removed by a Kähler transformation, these models are intrinsically Kähler potential driven. Such terms could arise for example due to a backreaction of an anti-D3 brane on the string theory bulk geometry. We show that this mechanism is very general and allows for a unified description of inflation and dark energy, with controllable SUSY breaking at the vacuum. When the internal geometry of the bulk field is hyperbolic, we prove that small perturbative Kähler corrections naturally lead to α -attractor behaviour, with inflationary predictions in excellent agreement with the latest Planck data.

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