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Global orientifolded quivers with inflation. (English) Zbl 1383.83228
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Summary: We describe global embeddings of fractional D3 branes at orientifolded singularities in type IIB flux compactifications. We present an explicit Calabi-Yau example where the chiral visible sector lives on a local orientifolded quiver while non-perturbative effects, $\alpha'$ corrections and a T-brane hidden sector lead to full closed string moduli stabilisation in a de Sitter vacuum. The same model can also successfully give rise to inflation driven by a del Pezzo divisor. Our model represents the first explicit Calabi-Yau example featuring both an inflationary and a chiral visible sector.

MSC:
83F05 Relativistic cosmology
83E30 String and superstring theories in gravitational theory
53Z05 Applications of differential geometry to physics
14J32 Calabi-Yau manifolds (algebro-geometric aspects)
32Q25 Calabi-Yau theory (complex-analytic aspects)
83C75 Space-time singularities, cosmic censorship, etc.
81T30 String and superstring theories; other extended objects (e.g., branes) in quantum field theory

Keywords:
compactification and string models; cosmology of theories beyond the SM; flux compactifications; superstring vacua

Full Text: DOI arXiv

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