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Discrete torsion, de Sitter tunneling vacua and AdS brane: U(1) gauge theory on D_4-brane and an effective curvature

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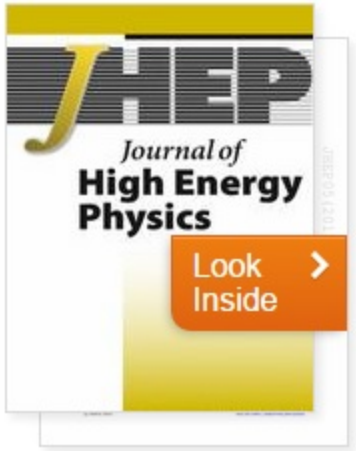

Abstract

The U(1) gauge dynamics on a D_4-brane is revisited, with a two form, to construct an effective curvature theory in a second order formalism. We exploit the local degrees in a two form, and modify its dynamics in a gauge invariant way, to incorporate a non-perturbative metric fluctuation in an effective D_4-brane. Interestingly, the near horizon D_4-brane is shown to describe an asymptotic Anti de Sitter (AdS) in a semi-classical regime. Using Weyl scaling(s), we obtain the emergent rotating geometries leading to primordial de Sitter (dS) and AdS vacua in a quantum regime. Under a