

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Vacuum Decay and Inflation

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We argue that moduli stabilization severely constrains the evolution following transitions between weakly coupled de Sitter vacua and can induce a strong selection bias towards inflationary cosmologies. We begin by carefully discussing gravitational vacuum decays and resolve a naive sign ambiguity in the Euclidean path integral approach. Equipped with this clear understanding of vacuum transitions we then turn towards constraints on the cosmological evolution after transitions in weakly coupled flux compactifications. The energy density of domain walls between vacua typically destabilizes Kahler moduli and triggers a runaway towards large volume. This decompactification phase can collapse the new de Sitter region unless an extended period of inflation generates overlapping past light cones for all events at the reheating surface.

Tuesday, November 22, 2016, 2:30 pm

Cosman Seminar Room

Center for Theoretical Physics

Building 6C, Room 6C-442

Massachusetts Institute of Technology

Refreshments at 2:00 in the same room