JOINT TUFTS/MIT COSMOLOGY SEMINAR

Inflationary trajectories: An effective field theory approach

Feraz Azhar

Harvard

With a view to exploring generic characteristics of the onset of cosmic inflation, I describe recent work that combines an effective field theory of inflation with a dynamical systems analysis. I explore the nature of inflationary trajectories for general 'single-clock' models of inflation, and exhibit probabilities for background spacetimes to flow into inflationary states. I show that (i) the probability of flowing into inflationary states in the simplest dynamical phase spaces can be significant; (ii) if initial conditions are included such that subsequent dynamical trajectories cannot be mapped onto the usual single-scalar-field (SSF) models of inflation, the probability of flowing into inflationary states can be significantly enhanced; (iii) when subsequent dynamical trajectories can be mapped onto the usual SSF models of inflation, there is a universal functional form for the scalar potential governing such trajectories; and (iv) this potential can give rise to observables that are in agreement with recent results from the Planck Collaboration.

Tuesday, April 10, 2018, 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