JOINT TUFTS/MIT COSMOLOGY SEMINAR

Effective Field Theory in Inflation

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Although the observed CMB is at very low energy, it encodes ultra high-energy physics in spatial variations of the photon temperature and polarization fluctuations. This effect is believed to be dominated by the initial quantum state of the Universe. I will describe the first theoretical tools by which to construct such a state from fundamental physics. One can then use this technique to reliably calculate corrections to the power spectrum, non-Gaussianity, etc from high-energy physics. We may soon be able to compare these predictions against experiment, allowing one to rule out classes of inflationary models. Now is the critical time to undertake such investigations, with a number of ongoing and planned experiments such as Planck and CMBPol/Inflation Probe poised to collect a wealth of precision data.

Tuesday, December 4, 2012, 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