The 4th UniverseNet School - Frontiers of Particle Cosmology



Contribution ID: 64

Type: not specified

Mr. WELLER, Joel (University of Sheffield): Coupled DBI Cosmology

Friday, 17 September 2010 17:45 (15 minutes)

The availability of high precision observational data in cosmology means that it is possible to go beyond the simple descriptions of cosmic inflation in which the expansion is driven by a single slowly rolling scalar field. One set of models of particular interest involve the Dirac-Born-Infeld (DBI) action, arising in string cosmology, in which the dynamics of the inflaton field are affected by a speed limit in a manner akin to special relativity. Also, the presence of additional fields during inflation is to be expected, and the question of how these fields affect the inflationary process and observables is an interesting one. In this talk, I will introduce a multi-field model in which inflation is driven by a canonical scalar field, non-minimally coupled to gravity, and a DBI field. I will explore the effect of the coupling on both fields and on the background dynamics, as well as the treatment of first-order perturbations.

Session Classification: 6 talks (Chair: Konstantinos DIMOPOULOS)