

Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Cosmological constraints on general, single field inflation¹ NISHANT AGARWAL, RACHEL BEAN, Department of Astronomy, Cornell University — Inflation is now an accepted paradigm in standard cosmology. It lacks, however, a firm physical theory, with many possible theoretical origins beyond the simplest, canonical, slow-roll inflation, including Dirac-Born-Infeld inflation and k-inflation. We discuss how a hierarchy of Hubble flow parameters, extended to include the evolution of the inflationary sound speed, can be applied to compare a general, single field inflationary action with cosmological observational data. By integrating the full flow and perturbation equations to obtain precise scalar and tensor primordial power spectra, we use a Monte-Carlo-Markov-Chain approach to constrain the properties of general, single field inflation by comparing with recent cosmic microwave background and large-scale structure observations.

¹Supported by the Gerald A. Soffen Memorial Fund Travel Grant

Nishant Agarwal
Department of Astronomy, Cornell University

Date submitted: 18 Dec 2008

Electronic form version 1.4