Perturbations and observational aspects of mutated hilltop inflation

Barun Kumar Pal, Supratik Pal, B. Basu

(Submitted on 28 Oct 2010)

We perform a careful investigation of cosmological perturbations and observational aspects, taking mutated hilltop inflation as a representative model. Employing mostly analytical treatment, we derive the formalism of quantum fluctuation and the corresponding post-inflationary perturbation theory which directly reflect the feature of a typical model of inflation. This further leads to exploring observational aspects related to Cosmic Microwave Background (CMB) radiation. The analysis results in modifications of the standard cosmological relations which are usually employed in determining certain cosmological parameters.

We also demonstrate that this semi-analytical treatment reduces complications related to numerical computation to some extent and may even result in increased accuracy level for studying the features of different phenomena related to CMB angular power spectrum, which can be subject to observational verification in near future.

Comments:	29 pages, 8 figures
Subjects:	**Cosmology and Extragalactic Astrophysics (astro-ph.CO)**; General Relativity and Quantum Cosmology (gr-qc); High Energy Physics - Theory (hep-th)
Cite as:	**arXiv:1010.5924v1 [astro-ph.CO]**

Submission history

From: Dr. Banasri Basu [view email]

[v1] Thu, 28 Oct 2010 11:26:19 GMT (475kb)