Abstract Submitted
for the APR16 Meeting of
The American Physical Society

Inflationary perturbations in a closed FLRW universe[1] NELSON YOKOMIZO, BEATRICE BONGA, BRAJESH GUPT, The Pennsylvania State University — We investigate the evolution of gauge invariant quantum perturbations in the closed FLRW model in the presence of an inflationary potential. We first find out initial conditions for the background geometry which lead to a desired slow-roll phase that is compatible with observation. Providing the initial conditions for the quantum field at the onset of slow-roll we study the influence of the spatial curvature on the scalar and tensor power spectra at the end of inflation. By comparing our results with the recent Planck data we discuss the role of spatial curvature on the estimation of various cosmological parameters. We highlight the main differences from the standard inflationary scenario in a flat FLRW model and potential implications for future observations. Finally, we comment on the quantum gravitational extension of this scenario to the Planck scale.

[1]Supported by CNPq-Brazil and NSF

Nelson Yokomizo
The Pennsylvania State University

Date submitted: 06 Jan 2016 Electronic form version 1.4