We analyse the implications of the Wilkinson Microwave Anisotropy Probe (WMAP) results for a braneworld tachyonic model of inflation. We find that the running of the scalar spectral index is within the bounds determined by WMAP; however, it is not possible to obtain $n_s > 1$ on large scales and $n_s < 1$ on small scales. We have also studied the possibility for power spectrum suppression at lower multipoles, as observed by the COBE DMR and confirmed by WMAP.

**Introduction**

Recent measurements of the cosmic microwave background anisotropies lend powerful support to the inflationary paradigm i.e. the existence of an epoch of accelerated expansion in the very early universe which dynamically solves the cosmological puzzles such as the homogeneity, isotropy and flatness of the universe Guth:1980zm. During this accelerated expansion phase, primordial quantum fluctuations of fields are amplified and act essentially as seeds for structure formation in the universe. In particular, the remarkably accurate data set obtained by the WMAP satellite has made it possible to significantly constrain inflationary models, on the basis of their predictions for the primordial power spectrum of density perturbations Bennett:2003bz,Hinshaw:2003ex,Spergel:2003cb. WMAP data provides no indication of any significant deviations from gaussianity and adiabacity; moreover, it allows for very accurate constraints on the spectral index, $n_s$, and its running, $\alpha_s$ Peiris:2003ff equation $n_s = 1.10^{+0.07}_{-0.06}$, $\alpha_s \equiv dn_s/d\ln k = -0.042^{+0.021}_{-0.020}$,