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Inflationary cosmology in anisotropic inflation models

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Abstract

In this work, we study the anisotropic inflationary models . In these models, an abelian gauge field non-minimally coupled to the inflaton field plays a role in the inflation dynamicIn a gauge field,the backgroundanswer is anisotropic, in the form of metric Bianchi. In order for the model to be consistent with the observations, the level of anisotropy should be small. The anisotropy power spectrum is obtained by calculating cosmological perturbation using δN formalism. We show that the criticism levelled in [4] does not apply and we can repeat the calculations in the non-absorbence by calculating the anisotropy spectrum. Using the constraint on the quadrupole anisotopy, we show that the contribution of the gauge field to total energy density should be very small

Keywords: cosmology, inflationary models, anisotropic inflation

For full article, refer to the Persian section