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AN ANISOTROPIC AND INHOMOGENEOUS BIANCHI TYPE-III COSMOLOGICAL MODEL WITH ELECTROMAGNETIC FIELD IN GR

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Abstract: Investigate an anisotropic and an inhomogeneous Bianchi type-III cosmological model in presence of electromagnetic field in GR. Here we assume that F_{12} is only non-zero element of electromagnetic field tensorF_{ij}. We have been find out a exact solutions by considering the metric potentials and displacement field are functions of coordinates t and x and the scale of expansion(θ) in the model is proportional to the particular eigen value σ_2^2 of the shear tensor σ_i^j , which leads to $B = (AC)^n$. The geometrical and bodily properties of the model are discussed in the occurrence of electromagnetic field.

Keywords and Phrases: Bianchi type-III, Electromagnetic field, Inhomogeneous universe, GR.

2020 Mathematics Subject Classification: 83C50, 83F05.

1. Introduction

Study of the cosmological models clear that the accessible theories for the constitution of the universe fall in to two categories, based either leading the amplification of quantum fluctuations in a scalar field during price rises or leading equilibrium breaking phase conversion in the primary universe. It's leading to the development of topological flaws like as area walls, monopoles, cosmic strings textures and other creatures. Space time admitting three parameter groups of automorphisms are significant in discussing the Bianchi models. In case of group is purely transitive