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A study of space time of the spatially homogeneous and anisotropic Bianchi type I & V cosmological model with general relativity

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Abstract

In the sense of general relativity, we studied a new class of Bianchi Type I and V spatially homogeneous and anisotropical models that have ideal liquid distributions, in case of a time that is different in cosmology and gravity. For starters, two types of cosmologies can be identified with exact solutions of Einstein's field equations. $m \neq 3$ And m = 3, respectively. We suggest an alternative law on anisotropy (σ/θ) Scalar (total) is proportional with the scale factor R function, i.e. $\frac{(\sigma/\theta)}{\theta} \propto f(R)$ (where σ is a shear scalar). Detailed discussion is made of the physical properties of models. The models are late isotropic. Cosmological distance parameters have also been defined for both models. The space-time model of Bianchi type I & V gives continuous value to the parameter of deceleration. We derive two different regulations for the average factor in scale with cosmic time, one is power-law-like and the other is exponential. In both types of cosmologies, Bianchi type I & V space-time can obtain precise solutions for Einstein field equations with total fluid and heat conduction. In cosmology with a power law, solutions match a cosmological model that begins to expand with a positive deceleration parameter from the singular state. Our solutions favor the model CDM as well as discussed state finder parameters.

KEYWORDS: Bianchi type- I & V, Distance parameters, Perfect fluid, ΛCDM model, cosmological model, deceleration parameter.

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