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String cosmological models in f(R,T) gravity

Non-singular Bianchi-III and VI_0 string cosmological models filled with perfect fluid in the framework of f(R,T) gravity are presented. The model initially accelerates for a certain period of time and decelerates thereafter. The physical behaviour of the model is also studied.

Summary

We have studied Bianchi type-III and VI_0 metrics in f(R, T) gravity proposed by Harko et al. (2011). We have considered the source of matter as perfect fluid with one dimensional strings. Exact solutions of the f(R, T)gravity field equations are obtained by choosing a special value for the average scale factor of the model which corresponds to a time-dependent deceleration parameter. The string tension density vanishes for Bianchi-III whereas for Bianchi- VI_0 it exist. In both the cases the energy density is positive and decreasing function of time. The physical parameters θ , H, σ^2 are decreasing function of time and tend to zero as $t \to -\infty$ for both the models. Since $\frac{\sigma^2}{\theta^2} \neq 0$, both the models are anisotropic throughout the evolution of the universe.

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