Bianchi type-III Power law model in f(R,T) gravity

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Abstract: An anisotropic Bianchi type-III universe is investigated in presence of perfect fluid within the framework of $f(R,T)$ gravity where R is the Ricci scalar and T is the trace of the source of matter, for the choice of functional $f(R,T) = R + 2f(T)$ and $f(R,T) = f_1(R) + f_2(T)$. We have shown that the field equations of $f(R,T)$ gravity are solvable for any arbitrary function of a scale factor. To get a physically realistic model of the universe, we have assumed a simple power-law form of a scale factor. The exact solutions of the field equations are obtained which represent an expanding model of the universe starts expanding with a big bang at $t = 0$. The physical behaviours of the model are discussed.

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