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Marder's Two-Fluid Dark Energy Cosmological Models In Saez-Ballester Theory of Gravitation

Abstract

The present paper deals with cylindrically symmetric metric in the form of Marder (1958) with Saez-Ballester theory of gravitation in the presence of perfect fluid and dark energy. In order to obtain the deterministic solution of the field equations we have assumed that the expansion scalar in the model is proportional to the Eigen value of the shear tensor. We have also assumed that the two sources, here the perfect fluid and dark energy interact minimally with separate conservative parts of their energy momentum tensors together with the constant EoS parameter of the perfect fluid. The role of the dark energy in the present model with variable equation of state parameter is studied more in detail. Some physical properties of model are also discussed.

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