

Magnetized dark energy and the late time acceleration

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In the present work we have searched the existence of the late time acceleration of the Universe. The matter source that is responsible for the late time acceleration of the Universe consists of cosmic fluid with the equation of state parameter $\omega = \frac{p}{\rho}$ and uniform magnetic field of energy density ρ_B . The study is done here under the framework of spatially homogeneous and anisotropic locally rotationally symmetric (LRS) Bianchi-I cosmological model in the presence of magnetized dark energy. To get the deterministic model of the Universe, we assume that the shear scalar σ in the model is proportional to expansion scalar θ . This condition leads to $A = B^n$, where A and B are metric functions and n is a positive constant giving the proportionality condition between shear and expansion scalar. It has been found that the isotropic distribution of magnetized dark energy leads to the present accelerated expansion of the Universe and the derived model is in good agreement with the recent astrophysical observations. The physical behavior of the Universe has been discussed in details.

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