

Cosmological implication of $f(T)$ gravity models through phase space analysis

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We have performed the dynamical system analysis of $f(T)$ gravity cosmological models at both background and perturbation levels. We have presented three models pertaining to three distinct functional forms of $f(T)$. The first form is that of the logarithmic form of the torsion scalar T , the second one is in the power law form, and the third one is the combination of the first two forms. For all these three forms of $f(T)$, we have derived the corresponding cosmological parameters in terms of the dynamical variables. Subsequently, the critical points are obtained and the condition(s) of its existence has been derived. Critical points of each model have been analysed individually and the corresponding cosmology are derived. The stability behaviour of these critical points are discussed from the behaviour of the eigenvalues and the phase portraits. At least one stable node has been obtained in each of these models. Further from the evolution plots of the cosmological parameters, the accelerating behaviour of the cosmological models are also verified

Presenter: Dr DUCHANIYA, Lokesh Kumar (BITS Pilani Hyderabad Campus India)