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Chaplygin gas in the cosmological settings of $f(T)$ gravity

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In the work reported in this paper, we have analyzed generalized Chaplygin gas (GCG) and modified generalized Chaplygin gas (MGCG) in an interacting scenario. The equation of state parameter has been analyzed in both the cases and the stability of the models has been discerned through squared speed of sound. Stability against gravitational perturbations has been observed for both GCG and MGCG interacting with pressureless dark matter. Also, the generalized second law (GSL) of thermodynamics has been tested for different enveloping horizons and validity of GSL has been observed throughout. Furthermore, $f(T)$ gravity has been reconstructed with GCG and MGCG and phantom behaviour has been observed through reconstructed EoS parameters. The squared speed of sound has been derived for $f(T)$ gravity and stability of the model has been established through its positivity.

Session

Astroparticle Physics and Cosmology

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