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Structure growth in the thawing dark energy models

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In this work, we study the dynamics of the universe using Thawing Dark Energy (TDE) model with a minimally coupled scalar field that evolves away from the dominance of potential energy. As the equation of state parameter $w(z)$ evolves, this offers a dynamic framework where the impact of dark energy may change over time. The structure formation of the universe will be highlighted in TDE using the redshift space distortion data together with cosmic chronometers (CC) baryon acoustic oscillation (BAO) data taken from the Dark Energy Spectroscopy Instrument (DESI) and the SNIa distance moduli measurements from the Pantheon + SH0ES survey, which consist of 1701 light curves of 1550 distinct supernovae. After introducing the background cosmological solutions and numerical findings, the linear cosmological perturbation equations will be derived in the 1+3 covariant formalism to analyse the numerical density fluctuations. The detailed statistical analysis will be performed after we calculate the best fit cosmological parameters through MCMC simulations.

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None

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Primary authors: Prof. ABEBE, Amare (Centre for Space Research, North-West University); AKALU, Shambel (North-West University)

Presenter: AKALU, Shambel (North-West University)

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