



Contribution ID: 151

Type: Oral

Exploring the Effects of Dark Matter - Dark Energy Interaction on Cosmic Evolution in Viscous Dark Energy Scenario

We explore the influence of interactions between dark matter and dark energy on the cosmic evolution of the Universe within a viscous dark energy (VDE) framework. Moving beyond traditional interacting dark energy (IDE) models, we propose a generalized IDE model adaptable to diverse IDE scenarios via IDE coupling parameters. In order to investigate deviations from Λ CDM across cosmic epochs by highlighting how viscous and the interaction between dark matter and dark energy impact cosmic density and expansion rates, we consider a model agnostic form of VDE. Eventually we perform a Bayesian analysis using the Union 2.1 Supernova Ia dataset and Markov Chain Monte Carlo (MCMC) sampling to obtain the optimal values of model parameters. This comprehensive analysis provides insights about the interplay between viscous and IDE in shaping the Universe's expansion history.

Field of contribution

Phenomenology

Author: Dr PANDEY, Madhurima (Haldia Institute of Technology)

Co-authors: Dr HALDER, Ashadul (St. Xavier's College); Prof. MAJUMDAR, Debasish (Ramakrishna Mission Vivekananda Educational and Research Institute); Mrs BASU, Rupa (St. Xavier's College)

Presenter: Dr PANDEY, Madhurima (Haldia Institute of Technology)

Track Classification: Astroparticle physics and cosmology