10th International Conference on Gravitation and Cosmology: New Horizons and Singularities in Gravity (ICGC 2023)



Contribution ID: 218

Type: Poster

Dynamical systems approach in cosmology

The present work deals with a dynamical systems study of quintessence potentials leading to the present accelerated expansion of the universe. The principal interest is to check for late time attractors which give an accelerated expansion for the universe. Two examples are worked out, namely the exponential and the power-law potential. Furthur we can encountered with the other type of potential where linear stability analysis fails and we prefer to other approaches like Centre Manifold theorem and Lyaponuv functions to check the stability of the system.

Key words; Quintessence, Linear stability theorem, Centre Manifold Theorem and Lyapunov Functions.

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Track Classification: Cosmology