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COSMOLOGICAL SCALING SOLUTION AND STABILITY ANALYSIS FOR CONSTANT COUPLING INTERACTION USING LOGARITHMIC POTENTIAL.

As the universe is dynamic, the best way to treat with the cosmological models are of course with dynamical systems. This work studies cosmological scaling solutions and their stability in models involving a scalar field with constant coupling interaction. We consider logarithmic potential for the scalar field and analyse its impact on the dynamics of the universe. We find scaling solutions where the scalar field energy density follows the background fluid by using phase plane analysis. The stability of these solutions is examined to reveal the conditions under which they act as late-time attractors. Our study may provide a insight into the role of logarithmic potential form in cosmological evolution.

Field of contribution

Theory

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