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Nonlinear waves in 2nd order conformal hydrodynamics

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In this work we study wave propagation in dissipative relativistic fluids described by a simplified set of the conformal 2nd order hydrodynamic equations.
Small amplitude waves are studied within the linearization approximation while waves with larger amplitude, which are described by nonlinear wave equations, are investigated using the reductive perturbation method. Our results indicate the presence of a “soliton-like” wave solution in 2nd order conformal hydrodynamics despite the presence of dissipation and relaxation effects.

On behalf of collaboration:

None

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