Physics > General Physics

A study of generalized second law of thermodynamics in modified f(R) Horava-Lifshitz gravity

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This work investigates the validity of the generalized second law of thermodynamics in modi?ed f(R) Horava-Lifshitz gravity proposed by Chaichian et al (2010) [Class. Quantum Grav. 27 (2010) 185021], which is invariant under foliation-preserving di?eomorphisms. It has been observed that the equation of state parameter behaves like quintessence (w > -1). We study the thermodynamics of the apparent, event and particle horizons in this modified gravity. We observe that under this gravity, the time derivative of total entropy stays at positive level and hence the generalized second law is validated.

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