

Cosmological perturbations during the kinetic inflationary epoch in the Horndeski theory

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We consider cosmological perturbations in the theory of gravity with nonminimal kinetic coupling. The Lagrangian of the theory contains the term $\zeta G^{ij} \phi_{,i} \phi_{,j}$, and represents the particular example of a general Horndeski Lagrangian, which results in second-order field equations. We derive a complete set of equations for scalar and tensor perturbations. The scalar and tensor modes are analyzed in detail. It is shown that their behavior inside the Hubble horizon differs cardinally from the analogous behavior of scalar and tensor modes in Friedmann cosmology.

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