

Abstract Submitted
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Reheating of the universe after inflation with $f(\phi)R$ gravity¹

YUKI WATANABE, EIICHIRO KOMATSU, Univ. of Texas, Austin — We show that reheating of the universe occurs spontaneously in a broad class of inflation models with $f(\phi)R$ gravity (ϕ is inflaton). The model does not require explicit couplings between ϕ and bosonic or fermionic matter fields. The couplings arise spontaneously when ϕ settles in the vacuum expectation value (vev) and oscillates, with coupling constants given by derivatives of $f(\phi)$ at the vev and the mass of resulting bosonic or fermionic fields. This mechanism allows inflaton quanta to decay into any fields which are not conformally invariant in $f(\phi)R$ gravity theories.

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