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Reheating Process in Mixed Higgs-R^2 Model

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The mixed Higgs-R^2 inflation model is a two-field inflation model with minimal setup within general relativity (GR) and Standard Model (SM), which is a promising UV extension of the Higgs inflation model with a cutoff scale up to Planck scale. The model can be described as an effective Starobinsky model during inflation with effectively a single parameter while the reheating phenomena are rich due to the multi-field nature, including "spike preheating", tachyonic preheating, and perturbative reheating which occur for different parameter choices and dominate different stages of reheating. Thorough investigation of reheating in this model enables us to improve the observational constraints from CMB on the model parameter.

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