

Starobinsky Model in Rainbow Gravity

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In this work, we study the Starobinsky's model of inflation in the context of gravity's rainbow theory. We assume that the rainbow function can be written in the power-law form of the Hubble parameter. In addition, we clearly formulate the expressions of the spectral indices, the power spectra, and the tensor-to-scalar ratio associated with both scalar and tensor perturbations and we also compare the results of our model to Planck 2015 data. Finally, it turns out that the values of the number of e-folds N_k and the rainbow parameter λ are constrained to be $42 \leq N_k \leq 87$ and $\lambda \leq 6.0$ respectively in order to be well consistent with the Planck data up to 2σ C.L..

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