Reliable effective theory of warm inflation in the light of CMB data

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This study investigates the alignment of theoretical and observational Cosmic Microwave Background (CMB) power spectra, focusing on the high-dissipative regime of the most reliable effective theory of inflation. Using marginalized posterior distributions, we analyze parameter spaces constrained by our model and compare them to observational data from the Planck 2018 results. The diagonal plots of marginalized distributions reveal the most probable values for each parameter, providing insights into the model's consistency with empirical evidence. We parametrized the model with an accelerated cosmology solution instead of a specific potential for the model. A comparative analysis of the theoretical power spectrum (f = 0.186 CT = 100) and Planck 2018 data highlights a close match, particularly at the first acoustic peak $\ell \approx 220$ and subsequent higher-order peaks. These results emphasize the robustness of the proposed model and its potential for accurately describing the early universe's dynamics.

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