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Scale-dependence in DHOST inflation

We study the inflationary consequences of Degenerate Higher Order Scalar Tensor (DHOST) theories in a de Sitter background. We perturb the de Sitter background by operators breaking either the degeneracy condition, i.e scordatura DHOST, or the shift symmetry in the scalar field. We first consider derivative scordatura and find that in all cases the power spectra of curvature perturbations are scale-invariant. We then investigate small perturbations by an axion-like potential, and show that in this scenario the power spectrum becomes scale-dependent. The modifications to the spectral index and its first two derivatives are compatible with the latest inflationary constraints. Moreover the tensor to scalar ratio and the non-Gaussianities of these models could be within reach of future experiments.

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