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Amplification and oscillations in the power spectrum from features in the potential of single-field inflation

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We discuss features of the inflaton potential that can lead to a strong enhancement of the power spectrum of curvature perturbations. Such features may be either inflection points or steep decreases of the potential and enhance the power spectrum of the curvature perturbations by several orders of magnitude at certain scales. In particular, steep step-like features also produce prominent oscillatory patterns. We also see that the induced tensor power spectrum inherits the distinctive oscillatory profile of the curvature spectrum and is potentially detectable by near-future space interferometers. The enhancement of the power spectrum may trigger the production of a sizeable number of primordial black holes. This talk is based on the two following papers: “Features of the inflaton potential and the power spectrum of cosmological perturbations”, K. Kefala, G.P. Kodaxis, I.D. Stamou, N. Tetradis, *Phys. Rev. D* 104, 023506 (2021) and “Spectrum oscillations from features in the potential of single-field inflation”, I. Dalianis, G.P. Kodaxis, I.D. Stamou, N. Tetradis, A. Tsigkas-Kouvelis, *Phys. Rev. D* 104 (2021).

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