

Frame Covariant Formulation of Inflation Using a Generalised Approach to the Inflationary Attractor

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Inflation has been a very successful generic explanation of the origin of cosmological anisotropies. However, the multitude of inflationary models, all with numerous different theoretical underpinnings, poses a challenge in determining the fundamental driving mechanism of inflation. With the aim of obtaining predictions from inflationary models in a concise and straightforward manner, we extend the potential slow-roll approximation and derive new, generalised forms for the potential slow-roll parameters. Thus, we are able to extract predictions for cosmological observables for a wide class of inflationary models (scalar-curvature theories). We furthermore show that, under the generalised potential approach, frame transformations (conformal transformations and inflaton reparametrisations) leave observable quantities invariant. We apply the generalised potential formalism to induced gravity inflation and Higgs inflation, and show that, since no approximations to the potential need be made, more accurate results for observable quantities are obtained.

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