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Constant-roll inflation

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We propose a phenomenological class of inflationary models in which the assumption of inflaton slow-roll is replaced by more general, constant-roll condition. We derive general exact solution for the inflaton potential and dynamics, and show that there exists parameter region that satisfies the latest observational constraint on the scalar spectral index and the tensor-to-scalar ratio. We also consider its generalization to the case of $f(R)$ gravity. We provide a simple constant-roll condition defined in the original, Jordan frame, obtain exact expressions for the scalaron potential in the Einstein frame, for the function $f(R)$ in the parametric form and for inflationary dynamics, and show the model has observationally viable parameter region.

Presentation type

Parallel talk

Primary author: Dr MOTOHASHI, Hayato (IFIC/ CSIC-University of Valencia)**Co-authors:** Prof. STAROBINSKY, Alexei (Landau Institute for Theoretical Physics); Prof. YOKOYAMA, Jun'ichi (The University of Tokyo)**Presenter:** Dr MOTOHASHI, Hayato (IFIC/ CSIC-University of Valencia)**Session Classification:** Parallel I