Phenomenology 2025 Symposium



Contribution ID: 33

Type: not specified

Warm Inflation with the Standard Model

Tuesday 20 May 2025 16:30 (15 minutes)

We show for the first time that warm inflation is feasible with Standard Model (SM) gauge interactions alone. Our model consists of a minimal extension of the SM by a single scalar inflaton field with an axion-like coupling to gluons and a monomial potential. The effects of light fermions, which were previously argued to render warm inflation with the SM impossible, are alleviated by Hubble dilution of their chiral chemical potentials. Our model only features one adjustable combination of parameters and accommodates all inflationary observables. We briefly discuss implications for axion experiments, dark matter, and the strong CP-problem.

Mini Symposia (Invited Talks Only)

Plenary (Invited talks only)

Author: BERGHAUS, Kim (California Institute of Technology)
Co-authors: DREWES, Marco; ZELL, Sebastian (LMU Munich)
Presenter: BERGHAUS, Kim (California Institute of Technology)
Session Classification: New Ideas in Baryogenesis, Inflation

Track Classification: New Ideas in Baryogenesis and Inflation