Contribution ID: **157**   Type: **not specified**

General Pole Inflation and Inflationary Attractors

Tuesday 12 July 2016 16:15 (20 minutes)

A reformulation of inflationary model analyses appeared recently, in which inflationary observables are determined by the structure of a pole in the inflaton kinetic term rather than the shape of the inflaton potential. This is called pole inflation, and it is a generalization of α-attractors and ζ-attractors.
The predicted values of inflationary observables are universal in the attractor limit in the sense that they do not depend on the details of the original potential.

We comprehensively study this framework with an arbitrary order of the pole taking into account possible additional poles in the kinetic term or in the potential.
Depending on the setup, the canonical potential becomes the form of hilltop or plateau models, variants of natural inflation, power-law inflation, or monomial/polynomial chaotic inflation.
The boundary of the effective field theory is discussed, which motivates the study of additional poles.
We demonstrate attractor behaviors of these models and compute corrections from the additional poles to the inflationary observables.
Realization of these new attractor models in supergravity is briefly discussed.

Summary

A reformulation of inflationary model analyses appeared recently, in which inflationary observables are determined by the structure of a pole in the inflaton kinetic term rather than the shape of the inflaton potential.
We comprehensively study this framework with an arbitrary order of the pole taking into account possible additional poles in the kinetic term or in the potential.
Depending on the setup, the canonical potential becomes the form of hilltop or plateau models, variants of natural inflation, power-law inflation, or monomial/polynomial chaotic inflation.
We demonstrate attractor behaviors of these models and compute corrections from the additional poles to the inflationary observables.

Primary author: TERADA, Takahiro

Presenter: TERADA, Takahiro

Session Classification: Parallel V

Track Classification: Inflation and alternatives, Strings, Cosmology