



Contribution ID: 4

Type: **not specified**

Perturbatively including inhomogeneities in axion inflation

Monday 5 February 2024 14:00 (45 minutes)

Axion inflation, i.e. an axion-like inflaton coupled to an Abelian gauge field through a Chern-Simons interaction, comes with a rich and testable phenomenology. This is particularly true in the strong backreaction regime, where the gauge field production heavily impacts the axion dynamics. Lattice simulations have recently demonstrated the importance of accounting for inhomogeneities of the axion field in this regime. We propose a perturbative scheme to account for these inhomogeneities while maintaining high computational efficiency. Our goal is to accurately capture deviations from the homogeneous axion field approximation within the perturbative regime as well as self-consistently determine the onset of the non-perturbative regime.

Presenter: EMA, Yohei

Session Classification: Theory of Particle Production