

On the IR divergences in de Sitter: loops, resummation and the semi-classical wavefunction

Thursday 31 October 2024 10:00 (45 minutes)

Detecting local Non-Gaussianity provides valuable insights into the early universe's particle composition. Interactions between the inflaton and light particles yield distinctive signatures, potentially observable in upcoming surveys. However, addressing IR divergences in light fields on de Sitter spacetimes requires careful treatment. Stochastic inflation offers a solution, but its relationship with perturbative computations remains unclear.

In this presentation, we establish a clear connection between perturbation theory and the stochastic formalism through the wavefunction formalism. We will explain how the leading-order Fokker-Planck equation arises from the classical saddle point of the wavefunction, and how subleading terms can be interpreted as quantum corrections to the wavefunction.

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