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The 1/N expansion for stochastic fields in de Sitter spacetime

Friday 11 December 2020 12:00 (20 minutes)

We propose a 1/N expansion of Starobinsky and Yokoyama's effective stochastic approach for light quantum fields on superhorizon scales in de Sitter spacetime. We explicitly compute the spectrum and the eigenfunctions of the Fokker-Planck operator for a O(N)-symmetric theory with quartic selfinteraction at leading and next-to-leading orders in this expansion. We obtain simple analytical expressions valid in various nonperturbative regimes in terms of the interaction coupling constant.

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