

Failure of the stochastic approach to inflation beyond slow-roll

Friday, May 17, 2019 10:45 AM (30 minutes)

After giving a pedagogical review I will clarify that the stochastic approach to inflation is generically reliable only at zeroth order in the (geometrical) slow-roll parameter ϵ_1 if and only if $\epsilon_2 \ll 6/\epsilon_1$, with the notable exception of slow-roll. This is due to the failure of the stochastic ΔN formalism in its standard formulation. However, by keeping the formalism in its regime of validity, I will show that, in ultra-slow-roll, the stochastic approach to inflation reproduces the power spectrum calculated from the linear theory approach.

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