

Stochastic inflation beyond slow roll

Thursday, May 16, 2019 2:30 PM (45 minutes)

I will discuss how to apply stochastic formalism for inflation beyond the usual slow-roll approximation. We verify that the assumptions on which the stochastic formalism relies still hold even far from the slow-roll attractor. In particular this requires the separate universe assumption to hold for long-wavelength perturbations of the scalar field beyond slow roll. In general, there is a gauge correction to the amplitude of the stochastic noise which is usually calculated in the spatially-flat gauge. We show that if the number of e-folds is used as the time variable (the uniform-N gauge) then these corrections vanish in the slow-roll limit, but we explain how to calculate them in general.

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