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Information content on primordial non-Gaussianity from the non-linear dark matter field

vendredi 22 avril 2022 15:45 (15 minutes)

Constraining primordial non-Gaussianity using large-scale structure data usually requires accurate predictions of the matter bispectrum, limiting significantly the range of scales which can be considered (linear and midly non-linear regimes).

In this talk, I will present a simulation-based inference approach which allows us to probe the non-linear regime. We combine the modal bispectrum estimator (a standard method to extract bispectral information from data) with an optimal compression scheme (using the score function) to build a quasi maximum-likelihood estimator for f_{NL} of several primordial shapes (local, equilateral, orthogonal). I will then show the constraints we obtained from the Quijote simulations, including a joint-analysis with the power spectrum to disentangle the impact of several cosmological parameters from primordial non-Gaussianity.

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