

Nonlinear galaxy clustering in massive neutrino cosmologies

Monday, 16 September 2024 14:40 (20 minutes)

Upcoming data from galaxy surveys has the potential to yield a detection of the sum of the neutrino masses. Therefore, state-of-the-art models for full-shape analyses of correlation functions need a complete validation in the context of massive neutrino cosmologies.

We perform a joint analysis of the power spectrum and bispectrum using a suite of mock galaxy catalogs built upon N-body simulations with massive neutrinos. The accuracy, constraining power, and degeneracies of the 1-loop EFT-based model, along with the role of the priors, are assessed.

To the same end, we investigate the potential ambiguities in the generalization of the Kaiser formula, as well as the issue of velocity bias, in the presence of massive neutrinos. These are relevant for an accurate modeling of the anisotropic clustering.

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