

Abstract Submitted
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Mode Coupling for Primordial Nonlocal Non-Gaussianity BEKIR BAYTAS, ARUNA KESAVAN, ELLIOT NELSON, SOHYUN PARK, SARAH SHANDERA, Institute for Gravitation and the Cosmos, The Pennsylvania State University, University Park, PA 16802, USA — The purpose of this study is to build the statistical formalism of a nonlocal functional of a Gaussian random field and to identify the relationship between non-Gaussian statistics in a large volume (the entire universe beyond our Hubble volume) and the statistics measured in a smaller subvolume (the observable universe). We set the rules and the constraints on the coefficients of the each nonlocal contribution term, which are derived under the known behavior of power spectrum and bispectrum, to generate the possible subset of cubic terms which can reproduce the quadratic terms under the long-short wavelength split. Under this split, one can write the possible shift to the power spectrum and the bispectrum in the subvolume from the subleading orders in the quadratic terms which are sensitive to up to quadratic powers of the long mode.

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