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Cosmic variance in inflation with two light scalars ANNE-SYLVIE DEUTSCH, BATRICE BONGA, Pennsylvania State Univ, SUDDHASATTWA BRAHMA, None, SARAH SHANDERA, Pennsylvania State Univ — We examine the squeezed limit of the bispectrum when a light scalar with arbitrary non-derivative self-interactions is coupled to the inflaton. We find that when the hidden sector scalar is sufficiently light ($m0.25H$), the coupling between long and short wavelength modes from the series of higher order correlation functions (of arbitrary order) causes the statistics of the fluctuations to vary in sub-volumes. However, the local bispectrum induced by mode-coupling always has the same squeezed limit. This means that observations of primordial non-Gaussianity cannot be used to uniquely reconstruct the potential of the hidden field but can be used to determine its mass.

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