

Producing a squeezed-limit bispectrum from single-field inflation with a non-standard initial state

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For single-field inflation with a non-standard initial state, we can find a regime where the bispectrum is “superlocal”:

$$\text{Non-standard initial state} \Rightarrow B_{\zeta} \propto \frac{1}{k_1^2 k_3^4}$$

(in squeezed limit: $k_3 \ll k_1 \approx k_2$)

Goes like $B_{\zeta}^{loc} \times \frac{k_1}{k_3}$

What are the signatures of this shape in observables?

- CMB temp. anisotropy
- large scale structure (scale-dependent bias)
- μ -type distortion of the CMB spectral shape

Can we distinguish it from the local form?