Measuring $f_{NL}^{\text{loc}}$ may not rule out all single-field inflation...

Slow-roll inflation using standard, Maldacena-like calculation

Non-vacuum initial state

Enhanced local bispectrum ($k_3 \ll k_1 \approx k_3$):

$$B_{\text{non-BD}} \propto \frac{k_1}{k_3} B_{\text{loc}}$$

*arXiv: 1104.0244*
Measuring $f_{NL}^{loc}$ may not rule out all single-field inflation…

Slow-roll inflation

using standard, Maldacena-like calculation

Non-vacuum initial state
(...previous calculations looked for folded shape)

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arXiv: 1104.0244
Enhanced bispectrum from slow-roll inflation with a non-vacuum initial state

What would Planck measure?
• We use the transfer function and 2D projection.
Enhanced bispectrum from slow-roll inflation with a non-vacuum initial state

What would Planck measure?

- We use the transfer function and 2D projection.

\[ N_k = \text{occupation number of mode with momentum } k. \]

- We find that, for \( N_k = \mathcal{O}(1), \)

\[ f^\text{measured}_{NL} \gg \frac{5}{12} (1 - n_s) \approx 0.01 \]

Jonathan Ganc
University of Texas, Austin
5/14/2011
$f_{NL}$ is enhanced! What are the implications?

Is this $f_{NL}$ observable?

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* * *

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Come and ask me for specifics!

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