

Cosmic surveys probe features in the inflationary power spectrum

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Current and near-future measurements of cosmic structure will provide unprecedented constraints on the initial density field. A sharply blue-tilted isocurvature component of the density fluctuations, indicative of an evolving mass during inflation, can evade CMB constraints but is accessible to large-scale structure observations. I discuss an axionic spectator field model whose power spectrum has a characteristic bump associated with a transition from a blue to a flat spectrum. Through careful numerical analysis I construct a fitting function capturing the essential qualitative features of this power spectrum component. Finally, I discuss ongoing work to constrain blue-tilted isocurvature using cosmological surveys.

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