

Search for Primordial Non-Gaussianity with Cosmological Gravitational Wave Background

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The search for primordial non-Gaussianity is an important probe of the early universe and can provide valuable information about the physics of inflation. I will discuss the possibility of measuring primordial non-Gaussianity through space-borne measurements of the cosmological gravitational wave background. We focus on the scalar non-Gaussianity generated during inflation, which can leave an imprint on the induced gravitational wave background. We show that by measuring the auto-correlation function of the induced gravitational wave background, it is possible to constrain the amount of scalar non-Gaussianity present in the early universe. We will also discuss the impact of various astrophysical and instrumental effects on the measurement of primordial non-Gaussianity, and show that future space-based gravitational wave detectors such as LISA and DECIGO/BBO have the potential to significantly improve our understanding of the early universe.

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