

Chulmoon Yoo: Abundance of primordial black holes with local non-Gaussianity in peak theory

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We discuss the effect of local type non-Gaussianity on the abundance of primordial black holes (PBH) based on the peak theory. We provide the PBH formation criterion based on the so-called compaction function and use the peak theory statistics associated with the curvature perturbation with the local type non-Gaussianity. Providing a method to estimate the PBH abundance, we demonstrate the effects of non-Gaussianity. It is explicitly shown that the value of non-linear parameter $|f_{\text{NL}}| \sim 1$ induces a similar effect to a few factors of difference in the amplitude of the power spectrum.