



Contribution ID: 2

Type: **not specified**

Peak theory and non-Gaussianity [Chair: Garriga]

Thursday, 30 May 2024 16:30 (45 minutes)

Spherical collapse is assumed in most of the works on PBH formation from the primordial curvature perturbation. According to the peak theory[1], sufficiently high peaks of a Gaussian random scalar field statistically have spherical symmetric shapes in the homogeneous and isotropic universe, which guarantees the above assumption. However, the PBH formation is related to highly non-linear regime of the perturbation and the non-Gaussianity may play an important role. In the talk, I will explicitly show how this argument can be modified if the curvature perturbation obeys non-Gaussianity.

[1] Bardeen et al. *Astrophys.J.* 304 (1986) 15-61

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No

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