



Contribution ID: 20

Type: **not specified**

## Compaction function profiles from stochastic inflation

*Monday, 17 June 2024 16:50 (20 minutes)*

Primordial black holes can arise from quantum fluctuations produced during cosmic inflation. Stochastic inflation is a method to compute the fluctuation statistics non-perturbatively, including non-Gaussianities. I discuss recent progress in the numerical implementation of the method, allowing us to compute the radial dependence of the fluctuations' compaction function in random patches of space. These compaction function profiles are needed for accurate black hole predictions. Using example models of ultra-slow-roll inflation, I discuss the spiky, stochastic nature of the profiles, their dependence on the curvature power spectrum, and the implications for the abundance and mass distribution of primordial black holes.

**Primary author:** Dr TOMBERG, Eemeli (Lancaster University)

**Presenter:** Dr TOMBERG, Eemeli (Lancaster University)

**Session Classification:** Session 4