

# Compaction function profiles from stochastic inflation

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Strong perturbations from cosmic inflation produce primordial black holes (PBHs). The method of stochastic inflation lets us compute the perturbations beyond linear order. I discuss recent progress in numerical stochastic computations, focusing on the compaction function, a quantity controlling the PBH collapse. The numerical stochastic method allows us, for the first time, to produce full radial profiles of the compaction function needed for accurate estimates of PBH abundance and mass distribution. I discuss the nature of these profiles in an example model of single-field ultra-slow-roll inflation. I highlight their noisy, stochastic nature and raise the question of the correct way to assess the collapse threshold in a realistic model.

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