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Primordial black hole formation: Type II B

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Primordial black holes (PBHs) may have formed from a sufficiently large amplitude of perturbation in the early Universe. The central aim of the formation studies is to predict the abundance and other properties of PBHs for a given cosmological scenario. After briefly introducing the standard setup and revisiting the compaction function, we here present our recent work on the numerical simulation of the time evolution of type II perturbations in the radiation-dominated universe. One of the striking features is that such a perturbation may result in a spacetime with bifurcating trapping horizons, which we would call a type II B PBH.

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