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Theorie-Palaver

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Primordial black holes from Supercooled First-Order Phase Transition

Cosmological first-order phase transitions are said to be strongly supercooled when the nucleation temperature is much smaller than the critical temperature. The phase transition takes place slowly and the probability distribution of bubble nucleation times is maximally spread. Hubble patches which get percolated later than the average are hotter than the background after reheating and potentially collapse into primordial black holes (PBHs). I will give a review of this PBHs formation mechanism and of its most recent developments.

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