

Constraints on primordial black holes beyond the Hawking picture

The energy injection through Hawking evaporation has been used to put strong constraints on primordial black holes as a dark matter candidate at masses below 10^{18} g. However, recent work has shown that Hawking's semiclassical approximation breaks down at latest after half-decay. Beyond this point, the evaporation could be significantly suppressed. In this work, we review existing cosmological and astrophysical bounds on primordial black holes. We show that the constraints disappear completely for a reasonable range of parameters, which opens a new window on light primordial black holes as a dark matter candidate.

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