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Dark matter and dark radiation from primordial black holes

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Primordial black holes (PBHs) lighter than 10^9 g are at present mostly unconstrained, because they evaporate before Big Bang Nucleosynthesis (BBN). Hence, they can not represent a fraction of dark matter (DM). However, their evaporation products can leave an imprint on the early universe observables. In this talk, we will decribe how the public code BlackHawk has been adapted to compute the Hawking radiation of light PBHs with the addition of a dark sector particle. Depending on this particle mass, it can result in a contribution to warm DM or dark radiation. The first one is further constrained using structure formation thanks to CLASS and the second one contributes to $\Delta N_{\rm eff}$, constrained by BBN and CMB (future) experiments. We conclude by giving the Hawking radiation constraints on light PBHs.

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Collaboration / Activity

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