MOCa 2022: Materia Oscura en Colombia



Contribution ID: 7

Type: not specified

Dark Matter in the Time of Primordial Black Holes

Wednesday 1 June 2022 10:50 (30 minutes)

Hawking evaporation of primordial black holes (PBH) with masses ranging from $\sim 10^{-1}$ to $\sim 10^9$ g can generate the whole observed dark matter (DM) relic density. However, a second DM production mechanism, like freeze-out or freeze-in, could have also been active in the early universe. Here we study the interplay of these mechanisms, focusing on the scenario where PBHs dominate the energy density of the universe, leading to a nonstandard cosmological era.

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