

New Horizons in Primordial Black Hole physics (NEHOP)



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Primordial black hole superradiance

Wednesday, June 21, 2023 9:00 AM (20 minutes)

I will describe superradiant particle production in the context of primordial black holes, discussing its cosmological and astrophysical relevance. In particular, I will focus on the superradiant production of axion-like particles and other exotic bosonic particles that they may account for (a fraction of) dark matter. I will discuss particle production by primordial black holes in the asteroid-mass range, as well as by (much) lighter black holes. In the latter case, there is a significant interplay between Hawking evaporation and superradiance that may lead to interesting dynamical and observational consequences. Finally, I will discuss potential observational signatures of primordial black hole superradiance.

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