Contribution ID: **317** Type: **Talk in the parallel session**

Primordial Black Holes in a scalar field dominated universe.

Monday, 5 July 2021 18:00 (30 minutes)

I review in this talk the mechanism of Primordial Black Hole (PBH) formation at the end of inflation from an oscillating scalar field. I will first present solutions to the Klein Gordon and Einstein equations in this regime for linear perturbations, as well as long-wavelength nonlinear solutions. I argue that these are indicators of the collapse of inhomogeneities onto PBHs. The tiny black holes produced in these models quickly evaporate and may produce Planck mass relics. I will show that these relics can be abundant enough to constitute all of dark matter, and present the constraints that this brings on the models of complex scalar field reheating.

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