Contribution ID: **8** Type: **not specified**

Primordial black holes as a LIGO-Virgo and dark matter candidate

Wednesday, 20 October 2021 16:00 (2 hours)

Although black holes can be the remnants of dead stars, it is also possible that some are primordial. Such primordial black holes are the unique dark matter candidate which is not a new type of particle, and they could also explain some of the unexpected properties of the black hole mergers that LIGO and Virgo have detected. I will summarise the evidence and (fine-tuning) challenges behind this claim, including a new Bayesian model comparison between astrophysical and primordial black holes.
I will also discuss the interesting coincidence of scales between the LIGO events, Chandrasekhar limit and the horizon mass during the QCD transition in the early universe, and the wavelength of gravitational waves on which NANOGrav may (potentially) have detected a stochastic gravitational wave background.

Presenter: Dr BYRNES, Christian (Sussex U)

Session Classification: The KEK-PH + KEK-Cosmo joint workshop on "Primordial Black Holes"