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## Gravitational waves from magnetised primordial black holes

*Wednesday, 13 September 2023 17:00 (20 minutes)*

Primordial black holes (PBH) can account for a wide variety of cosmic conundra, among which the origin of the primordial magnetic fields threading the intergalactic medium. In this talk, by considering PBHs naturally furnished with a disk due to the vortexlike motion of the primordial plasma around them, we will propose a novel natural ab initio mechanism for the generation a battery induced seed magnetic field (MF) which can be later amplified by various dynamo/instability processes and provide the seed for the present day MF on intergalactic scales. Finally, we will derive the GW signal induced by the magnetic anisotropic stress of such a population of magnetised PBHs checking at the end their detectability by GW observational probes.

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