

## Barcelona Black Holes (BBH) I: Primordial Black Holes



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### Primordial Black Holes and Gravitational Waves from Domain Walls [Chair: Torrenti]

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Unstable domain wall (DW) networks in the early universe can emit a large amount of gravitational waves (GW) before annihilating.

In the context of the recent GW signal reported by Pulsar Timing Arrays (PTA) collaborations, I will explore them as a possible interpretation.

Next, I will address a crucial question: do unstable Domain Wall networks also lead to significant production of Primordial Black Holes (PBH)? I will then present two main consequences. Firstly, I will assess the compatibility of the DW interpretation of the PTA signal with observational constraints on PBHs. Secondly, I will consider the possibility that Dark Matter can be entirely in the form of asteroid-mass PBHs, resulting from the DW collapse. In this case, I will demonstrate that observable GW signals should be detectable at interferometers (such as LIGO-Virgo-KAGRA and future instruments like LISA and Einstein Telescope).

**Are you interested in publishing a 2-4 pages proceeding at the MDPI Journal?**

No

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