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# A Stochastic Gravitational Waves Background Coming from a Double Peak Domain Wall Model

*Friday 25 August 2023 09:10 (20 minutes)*

Domain Walls (DW) are 2-dimensional topological defects predicted by several theories beyond the Standard Model. They are expected to arise from the breaking of a discrete symmetry in the early universe. The motion and the eventual annihilation of these objects are projected to generate a stochastic background of gravitational waves (GW), that could in principle be probed by ground-based GW detectors. We perform a search for a novel model of signature of this stochastic GW background in the data from the first three observing runs of LIGO and Virgo. First, we implement the search for an agnostic double peaked model, followed by a phenomenological approach, in order to place constraints on the parameters characterizing the DWs. Finally, detection prospects for third generation detectors are being discussed.

## Collaboration / Activity

Virgo

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