

Whispers from the Dark Universe - Particles & Fields in the Gravitational Wave Era

CLUSTER OF EXCELLENCE
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DESY THEORY WORKSHOP

WHISPERS FROM THE DARK UNIVERSE – PARTICLES & FIELDS IN THE GRAVITATIONAL WAVE ERA

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Radio Emissions from Accreting Axion Stars

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Axion-like particles, which we call axions, are promising dark matter candidates and may form substructures such as miniclusters and axion stars. When axions couple to photons, this interaction sets a critical axion star mass, which we call decay mass, above which parametric resonance of photons occurs. We consider the accretion of axion stars at decay mass within our galaxy and estimate the resulting radio line signals from these axion stars. We put constraints on the axion-photon coupling by comparing with observed radio backgrounds.

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