

Heterodyne Detection of Axion Dark Matter via Superconducting Cavities

We will present a novel approach to detecting dark matter axions in a Superconducting RF cavity. The approach relies on axion-mediated transitions between nearly-degenerate resonant modes, leading to parametrically enhanced signal power for light axions. This approach could probe axion masses across fifteen orders of magnitude, all in a metre-scale cavity.

Primary frontier topic

Cosmic Frontier

Primary authors: BERLIN, Asher (NYU); NANTISTA, Christopher (SLAC National Accelerator Laboratory); NEILSON, Jeffery (SLAC National Accelerator Laboratory); ZHOU, Kevin (Stanford); TORO, Natalia (SLAC National Accelerator Laboratory); SCHUSTER, Philip (SLAC); D'AGNOLO, Raffaele (CEA Saclay); TANTAWI, Sami (SLAC National Accelerator Laboratory); ELLIS, Sebastian (SLAC National Accelerator Laboratory)

Presenter: ELLIS, Sebastian (SLAC National Accelerator Laboratory)

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