

Broadband Reflector Experiment for Axion Detection (BREAD)

Saturday 1 April 2023 11:45 (15 minutes)

We introduce the Broadband Reflector Experiment for Axion Detection (BREAD) conceptual design and science program. This haloscope plans to search for bosonic dark matter across the $[10^{-3}, 1]$ eV ($[0.24, 240]$ THz) mass range. BREAD proposes a cylindrical metal barrel to convert dark matter into photons, which a novel parabolic reflector design focuses onto a photosensor. This unique geometry enables enclosure in standard cryostats and high-field solenoids, overcoming limitations of current dish antennas.

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Session Classification: SESSION 18: Direct detection: Light DM & Ultra-Light DM (Axions, ALPs, WISPs) searches-2 (CHAIR: Sebastian Baum- Stanford University)

Track Classification: Axions, Alps, Wisps as dark matter