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BREAD: Broadband Reflector Experiment for Axion Detection

Thursday 22 September 2022 14:00 (20 minutes)

The BREAD Collaboration proposes a novel dish antenna programme for broadband searches of terahertz axion dark matter. Its hallmark is a cylindrical metal barrel converting axions to photons that are focused by a parabolic reflector onto ultralow-noise quantum sensors. We present the BREAD conceptual design and science program from dark photon pilot planned at Fermilab to large-scale experiment. BREAD is projected to open multiple decades of unexplored coupling sensitivity across meV to eV masses that has long eluded existing resonant-cavity haloscopes. Based on Phys. Rev. Lett. 128 (2022) 131801

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Session Classification: Session 2 (early pm)