

First results from a microwave cavity axion search at $24 \mu\text{eV}$

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I will report on the first results from a new search for axion dark matter using a microwave cavity detector at ~ 5 GHz frequencies. This detector has achieved near-quantum-limited sensitivity using a dilution refrigerator and Josephson parametric amplifier, and excluded axion-photon-photon couplings a factor of 2.3 above the benchmark KSVZ model in the mass range $23.55 \mu\text{eV} < m < 24.0 \mu\text{eV}$. These are the first limits within the QCD axion model band in the mass decade above $10 \mu\text{eV}$.

Primary author: BRUBAKER, Benjamin (Yale University)

Presenter: BRUBAKER, Benjamin (Yale University)