

Abstract Submitted
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Status of the Axion Dark Matter Experiment – High Frequency (ADMX-HF)¹ BENJAMIN BRUBAKER, Yale University, ADMX-HF COLLABORATION — The axion is a well-motivated cold dark matter candidate first postulated to explain the absence of CP violation in strong interactions. Dark matter axions may be detected via their resonant conversion into photons in a high- Q microwave cavity permeated by a strong magnetic field. The Axion Dark Matter eXperiment (ADMX) has used this technique to exclude axion models in the few μeV mass range. Much of axion dark matter parameter space has until recently been beyond the reach of experiment, but advances in amplifier technology have enabled quantum-limited axion detection around 20 μeV (5 GHz). ADMX-HF (high-frequency) at Yale, which recently took its first data, will have sufficient sensitivity to probe this region of parameter space. This talk will discuss the design, current status, and projected sensitivity of ADMX-HF, which serves as both an innovation test bed and a pathfinder search at high frequencies.

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