

Abstract Submitted  
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**Status and Early Results from the Axion Dark Matter eXperiment - High Frequency (ADMX-HF)**<sup>1</sup> SAMANTHA LEWIS, University of California, Berkeley, ADMX-HF COLLABORATION — The axion was originally proposed as a solution to the Strong-CP problem of the Standard Model. A sufficiently light axion ( $1 - 1000 \mu\text{eV}$ ) also represents an excellent cold dark matter candidate. Such axions may be detected by their resonant conversion to photons in a high- $Q$  microwave cavity permeated by a strong magnetic field. Previous experiments have probed the first decade in mass using this method. ADMX-HF was designed and built as an innovation test-bed and a data pathfinder for the second decade in mass range. The experiment, initially configured with a 9-tesla magnet, dilution refrigerator, 2-liter tunable copper cavity, and a Josephson Parametric Amplifier, is now operational with a system noise temperature approximately twice the Standard Quantum Limit. Preliminary data in the  $25 \mu\text{eV}$  range (on the order of 6 GHz in resonant frequency) will be presented, as well as an overview of ongoing R&D on new cavity and amplifier technologies that will be validated in situ within the next few years.

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