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Active Resonators for ADMX[1] ANA MALAGON, University of Washington, ADMX COLLABORATION — The Axion Dark Matter experiment (ADMX) searches for dark matter axion particles converting into detectable photons in a microwave resonator immersed in a strong magnetic field. Here we will discuss a recently proposed technique to use active feedback in resonators as a way to increase the sensitivity of dark matter axion searches. We will briefly overview the theoretical motivation for axions and the current experimental setup of ADMX, then describe the principles of the active feedback system. Finally, we will discuss an active resonator prototype which demonstrates the improvement in signal to noise ratio.

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