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ADMX Receiver and Analysis[1] ANA MALAGON, University of Washington, ADMX COLLABORATION — ADMX looks for the excess radiation deposited into a cavity from the conversion of a dark matter axion into a microwave photon. The sensitivity of the experiment increases by reducing the background thermal noise and minimizing the electronic noise of the readout system. The axion masses that the experiment can detect are determined by the resonant frequency of the cavity mode of interest, which is tuned using a two rod configuration. One can also increase the search rate by measuring the output from two cavity modes at once, which requires two separate readout schemes. I will discuss the ADMX dual-channel receiver which has been upgraded to have near quantum-limited sensitivity on both channels, and describe how the correct modes are verified, using simulations, in the presence of dense electromagnetic structure. I conclude by describing upgrades to the ADMX analysis which allow for real-time exclusion limits.

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Ana Malagon
University of Washington

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