

Abstract Submitted
for the NWS12 Meeting of
The American Physical Society

The ADMX ultra-low noise receiver CHRISTIAN BOUTAN, University of Washington, AXION DARK MATTER EXPERIMENT COLLABORATION — Finding axions would finally point to the solution to the “strong CP problem” in QCD and uncover the nature of the Milky Way’s dark-matter halo. The Axion Dark Matter eXperiment (ADMX) is a sensitive search for such axions. ADMX looks for the exceedingly tiny amount of power that would be released in the very weak conversion of dark-matter axions to photons. The key to the sensitivity of ADMX is a microwave receiver sensitive to sub-yoctowatt electromagnetic power. ADMX is currently being upgraded to a lower noise temperature and a new receiver design that has the sub-Hz spectral resolution necessary for the detection of even exotic non-virialized axion dark-matter halo models. I discuss the simulation nature of the axion signal and the calibration of this receiver using simulated axion signals.

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Date submitted: 12 Sep 2012

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