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Noise Analysis of the ADMX Josephson Parametric Amplifier[1]
ALYSSA LEE, GRAY RYBKA, University of Washington, AXION DARK MATTER EXPERIMENT COLLABORATION — Axions are hypothetical particles that, if they exist, would solve both the strong CP problem and the dark matter problem. The ADMX experiment is searching for dark matter axions through their conversion to microwave photons in a strong magnetic field. The ability of ADMX to detect these photons is strongly dependent on the the low noise properties of Josephson Parametric Amplifiers (JPA). I will present a preliminary gain and noise analysis of the JPA being used in the 2018 run of ADMX and the resultant effects on the experiment's system noise.

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