



Contribution ID: 383

Type: **Oral Presentation**

Detailed discussion of the most sensitive microwave receiver for Axion Dark Matter detection

Monday, July 22, 2019 5:55 PM (15 minutes)

This talk will give an overview of the cryogenic detector for the most sensitive experiment to probe the QCD axion to date, Axion Dark Matter eXperiment, (ADMX). The detector technology includes a dilution refrigerator operated at 90mK and quantum-noise-limited amplifiers which contribute minimally to the system noise temperature thereby increasing the experimental sensitivity to the QCD axion. Using these technologies, ADMX has demonstrated recent success in reaching the so-called (DFSZ) sensitivity covering axion mass ranges from 2.66 to 3.31 μeV which no other axion experiment has achieved to this date. These results have crucial implications for the future direction of ongoing dark matter searches.

Less than 5 years of experience since completion of Ph.D

Y

Student (Ph.D., M.Sc. or B.Sc.)

N

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Session Classification: Orals LM 004

Track Classification: Low Temperature Detector Applications