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The MADMAX experiment: First dark matter constraints and the road ahead

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The QCD axion is a well-motivated hypothetical particle that simultaneously addresses the strong CP problem and constitutes a compelling cold dark matter candidate. The MADMAX experiment (Magnetized Disk and Mirror Axion Experiment) is designed to search for axions in the mass range of 40–400 μeV by boosting the microwave radiation in the range of 10-100 GHz induced by the inverse Primakoff effect in a dielectric haloscope. Recently, MADMAX has achieved significant milestones, including the publication of its first search results for axion-like particles and dark photons. The collaboration is now focused on preparations for the first cryogenic measurements using an open booster configuration. In this talk, I will present an overview of the MADMAX experiment, summarize the recent results, and outline the upcoming steps toward a full-scale axion search.

Collaboration you are representing

MADMAX

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