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MADMAX: post-inflationary axion dark matter search

Saturday 1 April 2023 09:15 (15 minutes)

Latest lattice-QCD simulations predict dark matter axions with a mass around 100 μeV if the Peccei-Quinn symmetry was broken after cosmic inflation. This mass range, however, is hardly explored by the current experiments. This talk will introduce a novel traveling-wave-based detector, the dielectric haloscope, to increase sensitivity to the suggested mass range. The MADMAX collaboration aims to realize the novel concept. I will report the status of the MADMAX experiment, with a special focus on the hidden-photon search using a proof-of-principle dielectric haloscope.

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Track Classification: Non-directional direct dark matter detection