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MADMAX: detection of axion dark matter

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The Axion is the hypothetical low-mass boson predicted by the Peccei-Quinn mechanism solving the strong CP problem. It is naturally also a cold dark matter candidate, thus it could simultaneously solve two major problems of nature. Up to recently, there was no existing experimental effort aiming to detect QCD axions in the mass range around 100 ueV, preferred by models in which the Peccei-Quinn symmetry was restored after inflation.
The MADMAX project is designed to be sensitive for QCD dark matter axions with masses 40ueV –400 ueV. The experimental design is based on the idea of enhanced axion photon conversion in a system with movable dielectric discs.
The MADMAX experiment will be located at DESY in Hamburg and enters now its prototyping phase. The design, realization and time scale of the experiment will be discussed. Proof of concept will be presented indicating the path towards the first physics run.

Primary author: Prof. GARUTTI, Erika (University of Hamburg)

Presenter: Prof. GARUTTI, Erika (University of Hamburg)

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