

The Search for Axion Dark Matter Below 1 micro-eV: ABRACADABRA-10cm Current Results and Designing the DMRadio-m³

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ABRACADABRA-10cm (ABRA-10cm) is a pathfinder experiment searching for axion dark matter (ADM) in the well-motivated parameter space for masses below 1 micro-eV. The next-generation experiment DMRadio-m³ brings together the expertise developed for the ABRA-10cm and DMRadio Pathfinder efforts and is being developed under the DOE Dark Matter New Initiatives program. In this talk, I will review the motivation, concept, and plans for searching for ADM below 1 micro-eV. I will present the results from our first one month search for axions with ABRA-10cm, updates from our second physics run and our plans towards a cubic meter scale experiment, DMRadio-m³.

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