

Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Results and update from the ABRACADABRA search for sub- μeV axion dark matter REYCO HENNING, Univ of NC - Chapel Hill, ABRACADABRA COLLABORATION — ABRACADABRA is an experimental concept that searches for axion dark matter (ADM) in the $10^{-14} - 10^{-6} \text{eV}/c^2$ mass range. In ABRACADABRA, ADM couples to the static magnetic field of a toroidal magnet. This coupling induces a small, oscillating magnetic flux in the center of the torus that can be measured by a pickup loop connected to a SQUID current sensor. In this talk we review the ABRACADABRA motivation, concept, and plans. We also present the first results from a one month search for axions with a prototype, ABRACADABRA-10cm. We found no evidence for axion dark matter and present limits in the $3.1 \times 10^{-10} \text{eV} - 8.3 \times 10^{-9} \text{eV}$ mass range. We also present an update from recent running with an upgraded version of ABRACADABRA and our plans towards a cubic meter scale experiment, DMRadio-1m³.

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Date submitted: 10 Jan 2020

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