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Dark Matter Radio - 50 Liter

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The axion is one of the most compelling dark matter (DM) candidates and a solution to the strong charge-parity problem. The DMRadio program consists of three experiments that together search for axions in the range 5 kHz - 200 MHz (20 peV - 0.8 μeV) with sensitivity to the DFSZ axion model: DMRadio-50L, DMRadio-m^3, and DMRadio-GUT. DMRadio-50L is a resonant lumped-element detector with a toroidal magnet searching for axions in the range 5 kHz - 5 MHz (20 peV - 20 neV) with a target sensitivity to axion-photon-photon coupling 5×10^{-15} GeV^{-1}. DMRadio-50L also acts as an innovation platform and technology test bed for quantum sensors that will enable a next-generation search for GUT-scale axions in this mass region (DMRadio-GUT). This talk will provide an overview and status update of the DMRadio-50L experiment.

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