

The CASPER and SHAFT searches for ultralight axion-like dark matter

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I will describe two precision experiments searching for ultralight axion-like dark matter. The SHAFT experiment uses ferromagnetic toroidal magnets, and is sensitive to the electromagnetic coupling in the 12 peV to 12 neV mass range. The CASPER-e experiment is based on precision magnetic resonance, and is sensitive to the EDM and the gradient couplings in the 162-166 neV mass range. These two searches have recently produced leading experimental limits on all three of the possible interactions of axion-like dark matter in those mass ranges.

Are you are a member of the APS Division of Particles and Fields?

Yes

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