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Weighing the Axion with Muon Haloscopy

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Axions in the local dark matter halo of the galaxy collide with virtual photons dressing the electromagnetic vertex of the muon. The collisions shift the muon magnetic moment in a way that scales with the volume of the muon beam and transforms like the axion under the charge conjugation, parity, and time-reversal symmetries of quantum electrodynamics. Analysis of measurements of the muon magnetic moment suggests that axions saturate the local halo density.

In-person or Virtual?

In-person

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