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Axion-Mediated Dark Matter: Models and Future Experimental Opportunities

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Dark matter (DM) remains one of the most profound mysteries in fundamental physics, motivating a wide array of theoretical models and experimental searches. Axions or axion-like-particles are theoretically well-motivated as they generically arise in models with a spontaneously broken global symmetry. They could either be good DM candidates or mediate the interactions between DM and the Standard Model. In this talk, we will give an overview of such DM models and highlight novel ideas to probe them using future laboratory-based experiments. Particularly, we will highlight ongoing experimental efforts on future fixed target experiments and DM direct detection experiments that will have access to large swaths of unexplored parameter space.

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