

APR20-2020-000918

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Abstract for an Invited Paper
for the APR20 Meeting of
the American Physical Society

Axions: A New Wave of Dark Matter Searches

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The axion is a popular dark matter candidate. It is distinguished by its very small mass, which causes it to behave more as a wave than as a particle. Within the Standard Model, axions arise from a simple extension, the addition of the Peccei-Quinn Symmetry to solve the strong CP problem. Similar particles, axion like particles (ALPs) arise from many higher-order theories. The wave-like nature of the axions and ALPs leads to experiments that are often fundamentally different than standard particle physics experiments and demand techniques that push the bounds of what is possible to measure. In this talk, I will review both axion and ALP physics and cosmology and then present an overview of the world-leading searches and the many new efforts that are coming online.