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Hunting for axion dark matter with the ADMX project[1] GIANPAOLO CAROSI, Lawrence Livermore National Laboratory, ADMX COLLABORATION — The axion is a hypothetical particle that explains why the strong force is CP invariant and could also account for the cold dark matter in the universe. The Axion Dark Matter eXperiment (ADMX) directly searches for dark-matter axions by looking for their resonant conversion into detectable photons in a microwave cavity permeated by a strong magnetic field. This experiment, currently a Generation 2 DOE Dark Matter Project, is now preparing for operations with enough sensitivity to either detect the "QCD axion" or reject that hypothesis at high confidence over a large range of potential axion masses. This talk will give an overview of the ADMX project and technology, its search plan and some of the various R&D projects that are being undertaken to extend its sensitivity.

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