

Abstract Submitted
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The DEAP 3600 Dark Mater Detector THOMAS SONLEY, Queen's University, DEAP-3600 COLLABORATION — The DEAP-3600 dark matter detector consists of 3,600 kg of liquid argon contained in an ultra-pure acrylic cryogenic vessel. The experiment is located 2 km underground at SNOLAB. DEAP-3600 is entering the commissioning phase. Scintillation light from events in the detector is observed by 255 high-efficiency room temperature PMTs. Electromagnetic backgrounds, including those from argon-39, are rejected using pulse shape discrimination based on timing. Backgrounds from neutrons and alphas are mitigated by ensuring excellent radiopurity and using a high efficiency neutron shield. The DEAP-3600 background budget is 0.2 events per year allowing a cross-section sensitivity of 10^{-46} cm² for scattering of Weakly Interacting Massive Particles with a 100-GeV mass in a 3-year run. In this talk, we will describe the status and physics reach, highlighting that it is expected to reach competitive sensitivity within months of the start of data collection.

Thomas Sonley
Queen's University

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