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Search for Dark Matter with DEAP-3600 CHRIS JILLINGS, SNOLAB/Laurentian University, DEAP-3600 COLLABORATION COLLABORATION — DEAP-3600 is a single-phase liquid argon detector, which searches for dark matter particle interactions with 1 tonne fiducial target mass (3.6 tonnes total) contained in an ultra-pure acrylic vessel viewed by 255 high quantum efficiency photomultiplier tubes. It is located 2 km underground at SNOLAB, in Sudbury, Ontario. Radioactive backgrounds are controlled through pulse-shape discrimination in case of electromagnetic backgrounds (demonstrated with a smaller 7-kg prototype DEAP-1) and with a combination of excellent radiopurity, shielding and fiducialization for neutron and alpha backgrounds. The target sensitivity to spin-independent scattering of Weakly Interacting Massive Particles (WIMPs) on nucleons is 10^{-46} cm^2 at 100 GeV/c^2. Commissioning of the DEAP-3600 detector is now complete and physics data taking is starting. This talk will present an overview and status of the project, including early results demonstrating the detector performance.

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