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Dark Matter Search at SNOLAB with DEAP-3600

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The DEAP-3600 experiment will search for dark matter particle interactions on liquid argon at SNOLAB, located 2 km underground in Sudbury, Ontario. A first generation prototype detector (DEAP-1) with a 7-kg liquid argon target mass is currently operating in the underground facility. It has demonstrated a pulse-shape discrimination (PSD) of 6×10^{-8} for reducing beta/gamma backgrounds, and is currently acquiring data for improved PSD demonstration and further background rejection studies. The larger detector containing a total mass of 3600 kg of liquid argon is currently under construction. The target sensitivity to spin-independent scattering on nucleons of 10^{-46} cm^2 will allow an improvement in dark matter particle sensitivity. The status of the experiment and construction at SNOLAB will be presented.

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