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DEAP underground in Canada: the DEAP-3600 dark matter search

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DEAP-3600 is a dark matter experiment at SNOLAB in Ontario, Canada, using 3600kg of liquid argon to search for spin-independent interactions of Weakly Interacting Massive Particles (WIMPs). The experiment uses pulse shape discrimination to separate WIMP-like nuclear recoils from the electronic recoils caused by most background events. Nuclear recoils produce more prompt scintillation light compared to electronic recoils, and this allows for excellent rejection of these background events. The collaboration has gone to extraordinary lengths to minimise the background from nuclear recoils, and < 0.6 background events are expected in the WIMP region of interest for 3 years of running. The projected cross-section sensitivity is 10^{-46} cm^2 for WIMPs of mass 100 GeV, which is an order-of-magnitude better than current experimental limits. This talk will detail the current status of the DEAP-3600 experiment, including highlights of the construction effort, and the latest results from commissioning the detector.

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