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Latest data analysis results from DEAP-3600

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DEAP-3600 is a single-phase liquid argon direct dark matter search experiment located at SNOLAB in Sudbury, Ontario. DEAP-3600 is designed to detect the nuclear recoil signal of a Weakly Interacting Massive Particle (WIMP), while using pulse-shape discrimination to remove backgrounds from argon-39 beta decay. Other sources of background include alpha decays, neutrons, and Cherenkov light. This presentation will summarize the latest results from DEAP-3600: the latest dark matter search results including a detailed background model, a measurement of electromagnetic backgrounds and potassium-42 activity in the detector, and a characterization of the liquid argon pulse-shape. The expected sensitivity of new machine-learning algorithm to suppress alpha particle events occurring in the detector neck, strongly reducing the largest contribution to the background estimates in the dark matter search, will also be presented.

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