



Contribution ID: 9

Type: **Presentation**

Signal Reconstruction for DEAP-3600

Saturday, 23 September 2017 11:30 (15 minutes)

DEAP-3600 is a Dark Matter experiment operating in SNOLAB. DEAP currently holds the leading weakly interacting massive particle (WIMP) cross-section exclusion for a LAr detector and continues to probe deeper. The expected 3-year sensitivity to the spin-independent WIMP-nucleon cross-section is 10^{-46} cm^2 at 100 GeV/c^2 WIMP mass. The PMT response, reflectivity of optical surfaces, timing of scintillators and wavelength shifter properties all need to be precisely characterized in order to accurately describe detector response. A high level of understanding the detector response allows for optimizations in pulse shape discrimination methods used to discriminate between WIMP candidate events and a variety of background events. This talk will discuss the efforts to precisely characterize the time and charge response of the detector.

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Session Classification: Saturday Morning 2

Track Classification: Signal reconstruction and identification (analysis methods, simulations)