



Contribution ID: 1692
compétition)

Type: **Poster (Student, In Competition) / Affiche (Étudiant(e), inscrit à la**

POS-37 - Process system bursts and cosmic ray muon events in DEAP-3600

Wednesday 31 May 2017 18:02 (2 minutes)

The DEAP-3600 dark matter experiment is a single phase liquid argon (LAr) based detector located 2km underground at the SNOLAB facility near Sudbury, Ontario. This experiment requires thorough characterization of all expected backgrounds in order to push the current limits on the spin-independent Weakly Interacting Massive Particle (WIMP) scattering cross section. As such, key systematics must be examined in order to fully characterize the detector response. This work examines the detector response through process system related backgrounds induced by thermodynamic changes to the LAr volume and explores methods to suppress such events. Cosmic ray muon events are examined by thorough analysis of the muon veto system data in tandem with detector data within the veto time window.

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Session Classification: PPD Poster Session | Session d'affiches PPD (9)

Track Classification: Particle Physics / Physique des particules (PPD)