



Canadian Association
of Physicists

Association canadienne
des physiciens et physiciennes

Contribution ID: 3081 Type: **Oral Competition (Graduate Student) / Compétition orale (Étudiant(e) du 2e ou 3e cycle)**

(G*) ^{39}Ar decay analysis and annual modulation search with DEAP-3600

Monday 6 June 2022 11:30 (15 minutes)

DEAP-3600 is a single-phase dark matter experiment looking at direct detection elastic nuclear scatters of the dark matter candidate, Weakly Interacting Massive Particles (WIMPs), with 3279 kg of liquid argon. The DEAP detector has recorded more than 3 years of physics data, and in addition to the direct search of dark matter, the collaboration is also working to extend the sensitivity of the detector by looking for annual modulation of the signal. The absolute stability of the detector and the detailed understanding of the detector systematics over the time of data collection allows the analysis of event rates in the detector data, which also compliments many other interesting physics analyses, such as a precise measurement of the lifetime of the ^{39}Ar isotope. In this talk, the stability of the DEAP-3600 detector with some preliminary measurements for the ^{39}Ar lifetime analysis and modulation analysis will be presented.

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Session Classification: M1-1 Dark Matter Experiments I (PPD) | Expériences sur la matière sombre I (PPD)

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