



Contribution ID: 1322  
compétition)

Type: Oral (Student, In Competition) / Orale (Étudiant(e), inscrit à la

## **\*\*WITHDRAWN\*\* Delayed Coincidence Analysis to Tag Alpha Decays from Radon in The DEAP-3600 Experiment**

*Wednesday 15 June 2016 13:45 (15 minutes)*

The DEAP-3600 experiment, located 6800 feet underground at the SNOLAB facility, uses 3.6 tons of liquid argon for a direct detection search for weakly-interacting massive particle (WIMP) dark matter. The target sensitivity to the spin-independent WIMP-nucleon cross section is  $10^{-46} \text{ cm}^2$  at 100 GeV/c<sup>2</sup> WIMP mass. The success of dark matter experiments depends critically on understanding and reducing any possible sources of background. In the DEAP-3600 experiment radon (Rn) daughters decaying on the surface of the detector and in the argon may mimic the expected dark matter signal. Here we will present an analysis using time and energy to identify and tag such radioactive decays. This talk will discuss the results from this analysis method, applied to various stages of the DEAP-3600 experiment, to determine the Rn activity and to perform basic calibrations.

**Primary author:** Mr GIAMPA, Pietro (Queen's University)

**Presenter:** Mr GIAMPA, Pietro (Queen's University)

**Session Classification:** W2-8 Cosmic Frontier: Dark Matter IV (PPD) / Frontière cosmique: matière sombre IV (PPD)

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