

DEAP-3600 Dark Matter Search with Argon

Tuesday, 10 September 2013 15:20 (20 minutes)

The DEAP-3600 experiment will search for dark matter particle interactions on 3.6 tonnes of liquid argon at SNOLAB. The argon is contained in a large ultralow-background acrylic vessel viewed by 255 8-inch photomultiplier tubes. Very good pulse-shape discrimination has been demonstrated for scintillation in argon, and the detector has been designed for a total background budget, including (alpha,n) and external neutron recoils, surface contamination from ^{210}Pb and radon daughters, of 0.2 events per tonne-year, allowing an ultimate sensitivity to spin-independent scattering of 10^{-46} cm^2 per nucleon at 100 GeV mass. Installation of the detector is currently being completed at SNOLAB. The acrylic vessel, purification systems, electronics and trigger system, the cryogenic cooling system and water shield tank have been installed. Commissioning and data collection are scheduled for early 2014. The status of the experiment and of construction at SNOLAB will be presented.

Primary author: Dr BOULAY, Mark (Queen's University)

Presenter: Dr BOULAY, Mark (Queen's University)

Session Classification: Dark Matter III

Track Classification: Dark Matter