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The DEAP-3600 Dark Matter Direct Detection Experiment (20' + 5')

Friday 5 August 2016 12:20 (25 minutes)

DEAP-3600 is a single phase liquid argon (LAr) dark matter experiment, located 2 km underground at SNO-LAB, in Sudbury, Ontario. The detector has 1 tonne fiducial mass of LAr. The target sensitivity to spin-independent scattering of 100 GeV WIMPs is 10^{-46} cm². The DEAP-3600 background target is < 1 background events in the WIMP region of interest in 3 tonne-years. The strategies to achieve this background are pulse shape discrimination to mitigate electron recoils, ultra-low radioactive materials for detector construction to reduce neutron and alpha backgrounds, and in-situ sanding of the acrylic vessel to mitigate radon exposure of surfaces during construction and fabrication. The WIMP search run began in 2016. This presentation gives an overview of the DEAP-3600 experiment and reports on recent results.

Presenter: GIAMPA, Pietro

Session Classification: Dark Matter Detection

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