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Beyond DEAP-3600: Development of a 50-tonne Next-Generation Liquid Argon Detector at SNOLAB

Tuesday, April 8, 2014 4:45 PM (15 minutes)

Building on the experience with single-phase Liquid Argon detectors, wich are particularly well-suited for high-mass WIMP sensitivity, I will present a conceptual design for a next-generation 50-tonne detector. In this large detector, surface background events which are one of the primary concerns for DEAP-3600, are mitigated more readily with position reconstruction, ultimately allowing a more conventional and cost-effective detector design. The high-discrimination of LAr of electronic events also mitigates the effect the neutrino background is the limiting factor in the ultimate sensitivity of all dark matter detectors.

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