Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Status of DEAP-3600 at SNOLAB SUMANTA PAL[1], Univ of Alberta — DEAP-3600 is a low-background, single-phase liquid argon (LAr) direct detection experiment looking for nuclear recoils from WIMP dark matter, operating 2 km underground at SNOLAB (Sudbury, Canada). The detector consists of 3279 kg of LAr contained in a spherical acrylic vessel. LAr is an excellent scintillator, transparent to its own scintillation light. Photomultiplier tubes detect the scintillation light, and pulse shape discrimination is applied to differentiate between nuclear recoils and electromagnetic interactions (the most abundant backgrounds, which predominantly come from the beta-decay of Ar39). I will present an analysis of a 758 tonne-day exposure during 231 live day data set taken during the first year of operation. I will also discuss the current detector status, ongoing hardware upgrades, plans to improve the alpha-decays background discrimination in the detector neck region, recent updates of LAr scintillation pulse shape analysis, and an update on WIMP-search analysis including an approach using a non-relativistic effective field theory framework considering various possible substructures in the local dark matter halo to interpret the WIMP results.

[1]On behalf of the DEAP3600 collaboration

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Date submitted: 08 Jan 2021 Electronic form version 1.4