

Abstract for an Invited Paper
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A DEAP & CLEAN Program for the Direct Detection of Dark Matter

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On behalf of the DEAP/CLEAN Collaboration, I will discuss our efforts to exploit liquid argon (LAr) and liquid neon (LNe) in a single-phase, scintillation detector for the direct detection of dark matter and low-energy solar neutrinos. The unique properties of LAr and LNe allow for a conceptually simple, economic, and scalable detector when operated in the single phase. Target exchange between LAr and LNe allows the capability of a “Beam On - Beam Off” test of a positive dark matter signal versus some unknown source of background. At the multi-ton scale, the single-phase approach offers unprecedented sensitivity to WIMP dark matter and the simultaneous detection of the dominant and low-energy (pp-fusion) solar neutrino spectrum. I will discuss this program, including a status report from DEAP-1 presently operating underground at SNOLAB, our plans to construct and commission the Mini-CLEAN detector, and our vision to move to the multi-ton target scale. This presentation will be complemented by a number of contributed papers.