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R&D program for Doped Liquid Argon TPCs

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LArTPCs are the technology of choice for current and future neutrino experiments. This technology provides sensitivity to GeV signals like accelerator neutrinos down to the 10s of MeV, covering part of the supernova neutrino spectrum. Expanding the reach of LArTPCs to the 1-10 MeV range would substantially enhance the flagship analyses of experiments like DUNE, while enabling low-energy analyses.

We outline the R&D pathway for Ar + Xe + photosensitive dopants, whose introduction into the LAr, has the potential to substantially enhance ionization yields of LAr detectors. This scalable R&D program will demonstrate the feasibility and impacts of introducing doped LAr into current and future neutrino detectors at the kTon scale.

Early Career

Yes

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