

Abstract Submitted
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Development of a Liquefied Noble Gas Time Projection Chamber¹ EZRA LESSER, AARON WHITE, CHRISTINE AIDALA, University Of Michigan — Liquefied noble gas detectors have been used for various applications in recent years for detecting neutrinos, neutrons, photons, and potentially dark matter. The University of Michigan is developing a detector with liquid argon to produce scintillation light and ionization electrons. Our data collection method will allow high-resolution energy measurement and spatial reconstruction of detected particles by using multi-pixel silicon photomultipliers (SiPM) and a cylindrical time projection chamber (TPC) with a multi-wire endplate. We have already designed a liquid argon condenser and purification unit surrounded by an insulating vacuum, constructed circuitry for temperature and pressure sensors, and created software to obtain high-accuracy sensor readouts. The status of detector development will be presented.

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