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Measurements of Nuclear Recoils in Liquid Argon: Results from SCENE SAMUELE SANGIORGIO, Lawrence Livermore National Laboratory, SCENE COLLABORATION — The SCENE (SCintillation Efficiency of Noble Element) collaboration has measured the scintillation and ionization yield of recoiling nuclei in liquid argon as a function of applied electric field by exposing a dual-phase Liquid Argon Time Projection Chamber (LAr-TPC) to a low energy pulsed narrowband neutron beam produced at the Notre Dame Institute for Structure and Nuclear Astrophysics. Liquid scintillation counters were arranged to detect and identify neutrons scattered in the TPC and to select the energy of the recoiling nuclei. The presentation will report recent results including the scintillation and ionization yields for nuclear recoils at varying energies and applied electric fields and the anti-correlation between scintillation and ionization for nuclear recoils. The implications for dark matter experiments will also be discussed.

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