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Argon Recoil Ionization and Scintillation from Electron Recoils (ARIS-ER) DAVID-MICHAEL POEHLMANN, University of California, Davis, DARKSIDE COLLABORATION — In 2018, the Argon Recoil Ionization and Scintillation (ARIS) experiment studied the response of liquid argon to monoenergetic neutrons. In a continuing effort to study the response of liquid argon at low energies, the proposed Argon Recoil Ionization and Scintillation from Electron Recoils (ARIS-ER) will measure the response of liquid argon to monoenergetic gammas which Compton scatter in the detector. The liquid argon Time Projection Chamber (TPC) will be exposed to 511 keV gammas produced by a Na-22 source. A Broad Energy Germanium (BEGe) detector will measure the energy of gammas which scatter in the TPC to determine the energy deposited. The ARIS-ER measurement will provide information on the scintillation and ionization energy scales, quenching factor, recombination probability, and time response of liquid argon to low-energy electron recoils.

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