

Abstract Submitted
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Argon Recoil Ionization and Scintillation for Electronic Recoils (ARIS-ER) SYDNEY OSTROM, University of California, Davis, DARKSIDE COLLABORATION — Low-energy dark matter electron recoils are not well understood in liquid argon (LAr), mainly due to a lack of measurements. The Argon Recoil Ionization and Scintillation for Electronic Recoils (ARIS-ER) experiment will measure the response of LAr to electronic recoils down to 1 keV and implement the response model in Geant4. ARIS-ER will use 511keV gammas from a Na-22 source to induce electronic recoils in LAr via Compton scattering in the TPC. A high-resolution germanium detector will measure the energy of the scattered gamma. This study is crucial to dark matter searches that use LAr, like DarkSide-20k, to identify sub-GeV dark matter-electron scattering events and to better understand backgrounds to dark matter-nucleon scattering.

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