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Paolo Agnes (Houston U): Measurement of liquid argon response to nuclear and electronic recoils with the ARIS experiment

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The Argon Response to Ionization and Scintillation (ARIS) experiment utilized monoenergetic fixed-angle neutron and gamma scatters to characterize liquid argon response to nuclear and electronic recoils for support of direct dark matter detection experiments with a liquid argon target. The relative scintillation efficiency for low energy single-scatter nuclear recoils and the recombination probability of electron-ion pairs for single-scatter electronic recoils were measured for both zero field and a range of applied electric fields. The gamma-tagged events were also analyzed to extract the linearity of the light yield for electronic recoil events at zero field. The ARIS results and their application in the calibration of liquid argon response simulation models will be presented.

Presenter: AGNES, paolo (University of Houston)

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