

Electro-nuclear scattering measurements for neutrinos with LDMX

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The Light Dark Matter eXperiment (LDMX) is a proposed small-scale accelerator experiment designed to search for dark matter using missing energy and momentum techniques from multi-GeV electro-nuclear interactions. In order to detect and veto against energy losses from standard electro-nuclear scattering processes, the detector design features charged particle tracking and hermetic calorimetry for both electromagnetic and hadronic activity in a region within 40 degrees of the incident electron beam. These same characteristics make the experiment capable of measuring inclusive and semi-exclusive lepton scattering that can be used to inform interaction modeling for neutrinos – particularly for the upcoming Deep Underground Neutrino Experiment (DUNE) – in a way that is complementary to other neutrino and electron scattering experiments. We present the capability of LDMX to conduct a rich physics program in electro-nuclear scattering measurements of high relevance to current and future neutrino experiments.

Attendance type

In-person presentation

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