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A neutrino floor for the Migdal effect

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Neutrino-nucleus scatterings in the detector could induce electron ionization signatures due to the Migdal effect. We derive prospects for a future detection of the Migdal effect via coherent elastic solar neutrino-nucleus scatterings in liquid xenon detectors, and discuss the irreducible background that it constitutes for the Migdal effect caused by light dark matter-nucleus scatterings. Furthermore, we explore the ionization signal induced by some neutrino electromagnetic and non-standard interactions on nuclei. In certain scenarios, we find a distinct peak on the ionization spectrum of xenon around 0.1 keV, in clear contrast to the Standard Model expectation.

Mini Symposia (Invited Talks Only)

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