

Measurement of the Charge and Light Yield of Low Energy Nuclear Recoils in Liquid Xenon at Different Electric Fields

Dual-phase liquid xenon detectors continue to lead in the search for the direct detection of dark matter. Characterization of the response of liquid xenon to low energy (≤ 20 keV) nuclear recoils is essential to establish the sensitivity of these detectors to dark matter. The neriX detector at Columbia University is a dual-phase time projection chamber that is optimized for simultaneous measurements of light and charge from these low-energy interactions. A coincidence technique is employed to extract the light and charge yield from nuclear recoils in liquid xenon as a function of energy deposited and applied electric field. In this talk, we will present preliminary results from the light and charge yield measurements.