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

Liquid xenon detectors continue to lead in the search for the direct detection of dark matter. Still, very few measurements have studied the response of liquid xenon to low-energy interactions (≤ 10 keV) at different applied electric fields. 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. Coincidence techniques are employed to extract the light and charge yields from electronic and nuclear recoils in liquid xenon as a function of energy deposited and applied electric field. In this talk, we will discuss the results of the charge and light yield measurements.