

Abstract Submitted
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New Measurement of the Scintillation Efficiency of Low Energy Nuclear Recoils in Liquid Xenon¹ GUILLAUME PLANTE, Columbia University, E. APRILE, R. BUDNIK, B. CHOI, K.-L. GIBONI, R.F. LANG, K.E. LIM, A.J. MELGAREJO FERNANDEZ — The uncertainty in the relative scintillation efficiency of nuclear recoils, \mathcal{L}_{eff} , at low energies is the largest systematic uncertainty in the reported results from liquid xenon (LXe) WIMP searches at low masses (<15 GeV). A new single phase LXe detector has been designed and built specifically for the measurement of \mathcal{L}_{eff} at low energies. For the design of the detector, the emphasis has been placed on the maximization of the scintillation light detection efficiency to obtain the lowest possible energy threshold. We present the results of a new measurement of \mathcal{L}_{eff} at low energies performed with this detector by recording fixed-angle elastic scatters of 2.5 MeV monoenergetic neutrons from a deuterium-deuterium neutron generator.

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