

Abstract Submitted
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Measurement of Charge and Light Yields of Liquid Xenon using Carbon-14 and Tritium Beta Decay Sources in the LUX Detector JON BALAJTHY, Univ of Maryland-College Park, LUX COLLABORATION — Many of the most sensitive WIMP dark matter searches are based upon liquid xenon TPC technology. The Large Underground Xenon (LUX) experiment, which operated at the Sanford Underground Research Facility from 2013 to 2016, set stringent new constraints on the existence of WIMPs with masses above 6 GeV/c². After the final LUX WIMP search run was completed (WS2014-16), Carbon-14 and tritium sources were dissolved into the detector to measure the charge and light yields of liquid xenon to beta decay events. We report on the results of these measurements as a function of energy and electric field. These results will be useful for future dark matter searches such as LZ, where beta decay events from radon daughter species are expected to be the dominant source of electron recoil backgrounds.

Jon Balajthy
Univ of Maryland-College Park

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