

Abstract Submitted  
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**A New Method for Electronic Recoil Calibration in Liquid Noble Dark Matter Detectors** SEAN MACMULLIN, Purdue University, XENON COLLABORATION — Calibration of next-generation liquid noble dark matter detectors present new challenges because radiation from external sources will not probe the entire target, owing to its large volume and high stopping power. For electronic recoil calibration in particular, a proposed solution is to dissolve a source of low-energy  $\beta$ -electrons directly into the liquid. A particularly promising candidate is  $^{212}\text{Pb}$ , a daughter of  $^{220}\text{Rn}$ . We have acquired a custom-made source of electrodeposited  $^{228}\text{Th}$  that efficiently emanates the desired  $^{220}\text{Rn}$ . Details of recent measurements of mixing  $^{220}\text{Rn}$  and its daughters in a liquid xenon detector and future prospects will be presented.

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