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**Absolute Electron Extraction Efficiency of Liquid Xenon** KATAYUN KAMDIN, ELI MIZRACHI, Univ of California - Berkeley, JAMES MORAD, Univ of California - Davis, PETER SORENSEN, Lawrence Berkeley National Laboratory — Dual phase liquid/gas xenon time projection chambers (TPCs) currently set the worlds most sensitive limits on weakly interacting massive particles (WIMPs), a favored dark matter candidate. These detectors rely on extracting electrons from liquid xenon into gaseous xenon, where they produce proportional scintillation. The proportional scintillation from the extracted electrons serves to internally amplify the WIMP signal; even a single extracted electron is detectable. Credible dark matter searches can proceed with electron extraction efficiency (EEE) lower than 100%. However, electrons systematically left at the liquid/gas boundary are a concern. Possible effects include spontaneous single or multi-electron proportional scintillation signals in the gas, or charging of the liquid/gas interface or detector materials. Understanding EEE is consequently a serious concern for this class of rare event search detectors. Previous EEE measurements have mostly been relative, not absolute, assuming efficiency plateaus at 100%. I will present an absolute EEE measurement with a small liquid/gas xenon TPC test bed located at Lawrence Berkeley National Laboratory.

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