

Abstract Submitted  
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**The Electron Recoil Response of the XENON1T Dark Matter Experiment** EVAN SHOCKLEY, University of Chicago, XENON1T COLLABORATION — XENON1T employs a two-phase xenon TPC to search for dark matter by detecting scintillation light produced by nuclear recoils in a 2 ton active volume of liquid xenon. However, nuclear recoils are not the only recoils that can occur since radiogenic electronic recoils are possible. Our only way of differentiating nuclear and electronic recoils is by comparing the relative fraction of scintillation (S1) and ionization (S2) signals. For the first Science Run of XENON1T, we must understand the response of our detector to S1 and S2 signals at the low keV energies where dark matter will present itself. Therefore, I will be discussing the current understanding of our signal and detection mechanisms at these energies. This work includes work using sources such as the Rn220 technique developed by XENON collaborators for understanding our rejection of electronic recoils.

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