

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Determination of the scintillation and ionization yield of nuclear recoils in liquid Xe from XENON10 neutron calibration data PETER SORENSEN, Brown University, XENON COLLABORATION — Neutron calibration data from the XENON10 experiment is used as a sensitive probe of the Xe scintillation yield ($\mathcal{L}_{\{\{\}}$) and ionization yield, for nuclear recoils on liquid Xe. Previous data for the ionization yield – the number of ionization electrons extracted per keV recoil energy (keVr) – do not extend below 25 keVr, while our method is robust to < 3 keVr. Previous data for the scintillation yield vary by $\times 1.5$ at 10 keVr, with limited data at lower energies. We show the most likely $\mathcal{L}_{\{\{\}}$ curve consistent with the XENON10 neutron calibration data, along with statistical and systematic limits on its variation.

Peter Sorensen
Brown University

Date submitted: 11 Jan 2008

Electronic form version 1.4