

Abstract Submitted
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Calibration of the XENON10 detector¹ GUILLAUME PLANTE,
Columbia University, XENON COLLABORATION — The XENON10 detector is a
15 kg dual-phase liquid xenon time projection chamber used to search for dark mat-
ter weakly interacting massive particles (WIMPs) by simultaneously measuring the
scintillation and ionization of nuclear recoils. The energy calibration of the detector
(as well as its response to electron recoils) is performed using external gamma-ray
sources (Cs-137 and Co-57) while its response to nuclear recoils is obtained using a
neutron source (AmBe). We discuss how different detector performance parameters
such as light yield and electron lifetime can be inferred from these calibrations and
show how the spatial dependence of some other parameters (light collection effi-
ciency for example) can be obtained. We also present comparisons of results from
calibrations with Monte Carlo simulations.

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