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Calibration of CsI Detectors for the NPDG Experiment¹ CHARLES FIESELER, University of Kentucky, SEPTIMIU BALASCUTA, Arizona State University, DAVID BOWMAN, Oak Ridge National Laboratories, CHRIS CRAWFORD, University of Kentucky, NADIA FOMIN, KYLE GRAMMER, University of Tennessee, ANDREW MCNAMARA, University of Kentucky, SEPPO PENTILLA, Oak Ridge National Laboratories, NPDGAMMA COLLABORATION — The NPDGamma experiment at Oak Ridge National Lab will measure the asymmetry in gamma production in the reaction: neutron + proton -> deuteron +gamma. The parity violating component of this reaction is measured from the correlation of neutron spin and γ momentum. In order to detect this asymmetry, 48 cesium iodide scintillators are arranged in a cylinder around a liquid parahydrogen target in a beam of polarized neutrons. The detector efficiency was calibrated using a rotating Cs¹³⁷ source of known intensity. The output voltage output as a function of the rotation angle was fit using a Fourier series expansion plus a linear background term. The amplitude was the ratio of signal to energy deposited in V/MeV/s, essentially an efficiency for each detector. The calibration procedure will be presented, as well as the complete data analysis. Supported by NSF under grant PHY-0855584.

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