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Source Calibration for Neutron Flux Measurement<sup>1</sup> KAYLA CRAYCRAFT, University of Kentucky, NPDGAMMA COLLABORATION — The NPDGamma experiment is currently running at the Fundamental Neutron Physics Beamline (FNPB) at the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory (ORNL). The goal of the experiment is to measure the parity-violating asymmetry between the incident neutron spin and emitted photon direction for the capture of neutrons on protons. The gamma-rays are detected in a CsI array. We need to know the neutron flux accurately to verify that we are running at counting statistics. We measure the neutron flux from the gamma signal produced by capturing all neutrons on a black boron target. The detectors were calibrated with a known gamma-ray source (Cesium-137) to high precision using a High Purity Germanium (HPGe) detector. I will present the methodology and results of this calibration, and how it affects our measurement of the statistical precision of NPDGamma.

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