

# GEN-Recoil Polarimetry Experiment in Jefferson Lab SBS Program

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The Super BigBite Spectrometer (SBS) program at JLab aims to measure nucleon electromagnetic form factors (EMFFs) at high momentum transfers. The GEN-RP experiment, the third in the SBS experiment series, concluded data taking in May 2024. This experiment is focused on measuring the neutron EMFF ratio  $G_E^n/G_M^n$  through recoil polarimetry at a  $Q^2 = 4.5 \text{ (GeV/c)}^2$ . Two polarimetry techniques have been used in this experiment: charge-exchange  $np \rightarrow pn$  with a passive Fe analyzer, and conventional  $np \rightarrow np$  scattering with an active CH analyzer. The results of this experiment will serve to optimize future high  $Q^2$  experiments aimed at measuring  $G_E^n/G_M^n$ . Among the various detector subsystems, the gas electron multiplier detectors (GEMs) played a major role in particle tracking and polarimetry. An overview of the experiment and post-experiment data analysis efforts will be presented with a focus on contributions from the GEM detector subsystem.

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