

Analysis Progress of the GMN Experiment with Super BigBite Spectrometer at Jefferson Lab

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The nucleon form factors are one of the most fundamental aspects of the nucleon structure. At high Q^2 , they are linked to the generalized parton distributions which provide information on the proton spin. The Super Bigbite Spectrometer (SBS) in Hall A at Jefferson Lab is dedicated to measure the form factors at high Q^2 . This includes GEP (proton electric form factor, recorded) up to $Q^2 = 12.5 \text{ GeV}^2$, GMN (neutron magnetic form factor, upcoming) up to $Q^2 = 13.5 \text{ GeV}^2$, GEN and GEN-RP (neutron electric form factor, recorded and upcoming, respectively) up to $Q^2 = 10 \text{ GeV}^2$, and nTPE (two-photon exchange contribution in elastic electron-neutron scattering, recorded with GMN). GMN/NTPE was the first SBS experiment to run, and its successful run has helped tremendously to the successful run of all following experiments. In this presentation we will focus on the GMN/NTPE experiment with an emphasis on the experimental analysis method and the progress of the data analysis.