

Neutron Magnetic Form Factor Measurement at High Q^2 with CLAS12¹

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Understanding the internal structure of the nucleon is one of the central goals of nuclear and high-energy physics programs at Jefferson Lab. The basic observables that provide valuable insight into this structure are the elastic electromagnetic form factors, G_E^p , G_M^p , G_E^n , and G_M^n , at high Q^2 . In this talk, we will focus on the measurement of neutron magnetic form factor, G_M^n , at high Q^2 using the CLAS12 detector. The ratio method of quasi-elastic $e - n$ to $e - p$ scattering on a deuteron target is used to extract G_M^n . The advantage of using the ratio method is to reduce the impact of systematic uncertainties like luminosity, etc. This method requires a precise measurement of neutron detection efficiency (NDE). In this talk, we will discuss the procedures that we have used to measure the ratio and show preliminary results for the CLAS12 NDE.

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