Measurements of the Inclusive Electron Scattering off Protons with CLAS12

Electron scattering data off protons from the CLAS12 detector in Hall B at Jefferson Laboratory have become available and cover a wide kinematic range in W up to 4 GeV and Q^2 up to 10 GeV^2, offering new opportunities to explore inclusive, semi-inclusive, and fully exclusive reactions. A study that aims to extract the inclusive electroproduction cross sections from the CLAS12 data collected at a beam energy of 10.6 GeV from an unpolarized liquid-hydrogen target is now in progress and preliminary results will be presented. Because of the large acceptance of CLAS12, these data offer a unique opportunity to measure inclusive cross sections at W from the meson electroproduction threshold to W from 2.0 GeV to 3.0 GeV within any given Q^2-bin. This unique W-coverage at fixed Q^2-values is of particular importance for the extension of our knowledge on the nucleon parton distribution function from the data on F2 structure function in the resonance region by employing the existing CLAS results on the γpN* electroexcitation amplitudes. These studies also offer valuable input for the exploration of quark-hadron duality.