

First Measurements of the Inclusive Electron Scattering off Protons with CLAS12

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Electron scattering data off protons from the CLAS12 detector has recently become available and cover a wide kinematical range in W up to 4 GeV and Q^2 up to 10 GeV², 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 fall 2018 run data, collected at an electron beam energy of 10.6 GeV using an unpolarized liquid-hydrogen target.

The comparison of inclusive electron scattering data from CLAS12 with the available world data is essential for the understanding and validation of the CLAS12 performance in terms of the electron identification and efficiency evaluation.

The data on inclusive electron scattering cross sections in the resonance region at high photon virtualities, $Q^2 > 5.0$ GeV², will become available. In combination with the already existing CLAS results on N^* electrocouplings, they will shed light on the behavior of the parton distributions in the resonance region of large x_B and offer valuable input for quark-hadron duality studies.