

Experimental Approach to Finding an Energy Correction to the electron scattered into the Forward Tagger

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The CLAS12 detector covers a large percentage of the 4π solid angle which allows detection of multi-particle final states. One of its new subsystems, the Forward Tagger (FT), provides an azimuthal angular coverage between $2.5^\circ < \theta < 4.5^\circ$. The detection of forward-angle scattered electrons at such small angles enables electroproduction experiments at low Q^2 providing an energy-tagged, polarized, high-intensity, quasi-real photon beam.

Experiments relying on the FT need a very well calibrated subsystem to provide accurate information of the e' in order to complete physics analysis. One way to verify the FT energy calibration is using the missing mass technique, applying energy and momentum conservation, for well established reactions. For this study, the reaction $ep \rightarrow e'p'\pi^+\pi^-$ was used in two ways by first allowing the e' to be missing and then the p' . The results of both methods are compared and then applied to the data enabling a direct comparison before and after the e' energy correction.