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Momentum Corrections for the CLAS E5 Data Set ROBERT BURRELL, GERARD GILFOYLE, University of Richmond, CLAS COLLABORATION — The Thomas Jefferson National Accelerator Facility located in Newport News, Virginia, is home to the CLAS (CEBAF Large Acceptance Spectrometer) detector, which measures scattered particles from high-energy collisions of an electron beam and a nuclear target. Initial measurement of the momentum of charged particles is done by reconstructing tracks using several different detecting elements and a toroidal magnetic field. To improve the accuracy and precision of these momentum measurements for the electron and proton, we have applied the following algorithm. (1) Establish a known standard using the neutron peak in the $ep \rightarrow e'\pi^+X$ reaction and applying the missing mass technique. (2) Calculate the curvature, qB/p_m , event by event where q is particle charge, B is the ratio of torus magnet current to 3860A, and p_m is the reconstructed particle momentum. (3) Calculate the curvature again using the particle momentum p_c derived from only the polar angle of the track. This angle is measured with high precision. (4) Plot the difference between these two curvatures $\Delta(qB/p)$ versus qB/p_c and fit the results to a line. (5) Use these fit results to calculate a new corrected momentum and use it to calculate the missing mass in Step 1. We will present the results of this procedure for the E5 running period at a beam energy of 2.56 GeV on a deuterium target.

Gerard Gilfoyle
University of Richmond

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