

Abstract Submitted
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A Study of the Spin Dependence of Pion Electro-Production near the Δ -Excitation Region YUAN XIAO, Bates Linear Accelerator Laboratory, Laboratory of Nuclear Science, MIT, BLAST Collaboration — The BLAST collaboration recently finished an experiment measuring the spin dependence of pion electro-production near the Δ -excitation region. The experiment used the polarised electron beam from the MIT-Bates Linear Accelerator Facility and a target of vector polarized atomic hydrogen produced by an Atomic Beam Source (ABS). The polarized hydrogen was injected into an internal target cell on the South Hall Electron Storage Ring. Data for various kinematics and different reaction channels were collected simultaneously by the BLAST (Bates Large Acceptance Spectrometer Toroid) detector. By flipping the target spin direction and the electron beam helicity, asymmetries were constructed from the measured rates with different spin combinations. The resulting asymmetries were obtained for longitudinal and transverse target spin orientations (with respect to the momentum transfer direction) and cover an invariant mass (W) range of 1.1 to 1.4 GeV/c^2 . With less background and fewer assumptions than results from other inclusive channels, this spin depend study of the exclusive channels, pion electro-production near the Δ -excitation region, will cast light on the spin structure of protons. Preliminary experimental results of spin-correlated parameters and a comparison between the experiment and a unitary iosbar model (MAID) will be presented.

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