

Abstract Submitted
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Experiment E06-009: Measurement of Longitudinal and Transverse Structure Functions on Deuterium in the Nucleon Resonance Region IBRAHIM ALBAYRAK, Hampton University — This experiment ran in Hall C at Jefferson Lab to measure L/T separated structure functions from deuterium from the quasielastic region through the nucleon resonance region and beyond (up to $W^2=4.5 \text{ GeV}^2$), spanning the four-momentum transfer range $0.25 < Q^2 < 4.0 \text{ (GeV/c)}^2$ which is full Q^2 range for two running periods. ROSEN07, however, being the second period, focused on higher Q^2 range above 2 (GeV/c)^2 . The Rosenbluth separation technique will be used to separate longitudinal and transverse cross sections to extract structure functions F_1 , F_2 , F_L and R . This experiment is the second part of the first global survey of these fundamental quantities on deuterium which began with the Hall C experiment E02-109. The measurement of these fundamental quantities allows a variety of physics issues to be addressed, including: an evaluation of QCD moments of the deuteron and neutron structure functions, and quark-hadron duality in deuteron. This experiment was completed in July 2007 using the High Momentum Spectrometer to detect electrons from a 4 cm deuterium target. An overview will be presented of the experiment and analysis, along with preliminary results.

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