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Experiment E06-009, "ROSEN07": Measurement of $R = F_L/F_T$ 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 $W^2 = 4.5GeV^2$), spanning the four-momentum transfer range $1 < 4.5(GeV/c)^2$. Rosenbluth separation technique is used to extract separated structure functions F_1, F_2, F_L and R. The measurement of these fundamental quantities allows a variety of physics issues to be addressed including: an evaluation of QCD moments of the deuterium and neutron structure functions (experimentally determining both the proton and neutron moments provide a direct confrontation with recent and future calculations from lattice QCD of the nucleon non-singlet moments), and quark-hadron duality in protons and neutrons. This experiment was completed in july 2007 at Jefferson Lab using the equipment: the High Momentum Spectrometer (HMS) to detect electrons and 4 cm cryogenic deuterium target. The current status of the data analysis and preliminary results such as nearly finalized cross sections, L/T separation results on deuterium, preliminary moments and duality studies will be presented.

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