Abstract Submitted
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Meson Photoproduction on Polarized Deuterium[1] DAO HO, Carnegie Mellon University, THE CLAS COLLABORATION — A successful description of the nucleon excitation spectrum is a basic test of how well the underlying forces are understood. Recent Lattice-QCD calculations have supported the predictions of $SU(6) \times 0(3)$ quarks models for many "missing" levels which have yet to be observed. Most of these are predicted to couple weakly to the well-studied πN channel. Stronger couplings are predicted to other decay channels such as $\pi\pi N$, ρN and $K\Lambda$, which can be studied in photo-production. Polarization observables on both polarized proton and neutron targets are needed to disentangle reaction mechanisms at the amplitude level. While polarized-proton data is comparatively abundant, data on the polarized neutron has been essentially non-existent. During 2011-2012, JLAB carried out experiment E06-101 (g14 run with CLAS) to measure pseudoscalar-meson photo-production reactions using circularly and linearly polarized beam on an HD-Ice target, where quasi-free kinematics of the ($\sim$ 25% polarization) longitudinally polarized deuterium may be used to approximate a polarized neutron. This talk summarizes the status of on-going analyses of the πp, $K\Lambda$, $K^0\Sigma^0$, $\pi\pi n$, $\pi\Delta$, and ρn channels to extract relevant polarization observables.

[1]On behalf of CLAS g14 group.

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