## Meson Photoproduction on a Polarized Deuterium

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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  $\pi N$  channel. Stronger couplings are predicted to other decay channels such as  $\pi\pi N$ ,  $\rho N$  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 (~ 25% polarization) longitudinally polarized deuterium may be used to approximate a polarized neutron. This talk summarizes the status of on-going analyses of the  $\pi^-p$ ,  $K^+\Lambda$ ,  $K^0\Lambda$ ,  $K^0\Sigma^0$ ,  $\pi^+\pi^-n$ ,  $\pi^\pm\Delta^\mp$ , and  $\rho n$  channels to extract relevant polarization observables.