

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Double-Polarization Experiments Using Polarized HD at LEGS.¹

C. STEVEN WHISNANT, James Madison University, LEGS COLLABORATION — A novel, solid, frozen-spin HD target has been developed for measurements of double-polarization observables in the Δ resonance region. Our focus is the determination of the pion photo-production amplitudes for the neutron and proton. Cross sections, beam asymmetries and the E and G double-polarization observables are measured simultaneously. E provides information on the GDH and Spin-Polarizability spin sum rule integrals. We report here a preliminary analysis of one month of data collected on a \vec{HD} target with polarizations of $\langle P_H \rangle = 30.0\%$ and $\langle P_D \rangle = 31.5\%$ and in-beam spin relaxation times of about one year. The photon beam energies ranged from 190 - 422 MeV with circular polarizations between 59% and 100%. Data collected during this run period focused on π^0 production from the neutron using a detector system optimized to detect the recoil neutron in coincidence with the π^0 . This work is supported by the U.S. Department of Energy under contract DE-AC02-98CH10886, by the U.S. National Science Foundation, and by the the Instituto Nazionale de Fisica Nucleare, Italy.

¹C. Steven Whisnant for the LEGS-Spin Collaboration.

C. Steven Whisnant
James Madison University

Date submitted: 25 May 2005

Electronic form version 1.4