

## First results from the NPDGamma experiment at the Spallation Neutron Source

*Wednesday, 20 June 2012 09:30 (30 minutes)*

The NPDGamma experiment aims to measure the parity-odd correlation between the neutron spin and the direction of the emitted photon in neutron-proton capture. A parity violating asymmetry (to be measured to  $10^{-8}$ ) from this process can be directly related to the strength of the hadronic weak interaction between nucleons, specifically the  $\Delta I = 1$  contribution. The experiment has been commissioned and is presently taking production data at the Fundamental Neutron Physics beam line at the Spallation Neutron Source at ORNL. The gamma-ray asymmetries from the parity-violating capture of cold neutrons on  $^{35}\text{Cl}$  and  $^{27}\text{Al}$  were measured, to check for systematic effects, false asymmetries, and backgrounds. Preliminary results for the measurements with  $^{35}\text{Cl}$  and  $^{27}\text{Al}$  will be presented as well as first results obtained up to now with the liquid parahydrogen target.

**Primary author:** Prof. ALARCON, Ricardo (Arizona State University)

**Presenter:** Prof. ALARCON, Ricardo (Arizona State University)

**Session Classification:** Wed 9:00-10:30