

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}Cl and ^{27}Al were measured, to check for systematic effects, false asymmetries, and backgrounds. Preliminary results for the measurements with ^{35}Cl and ^{27}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