

## Low Energy Neutron-Proton Interactions

There have been few measurements of cross sections for neutron-proton scattering and radiative capture below 1 MeV. Those measurements which do exist are at a small number of energies, and are inconsistent with theoretical models and with each other. Several experiments were conducted with the goal of obtaining improved data on these cross sections at the University of Kentucky (UKY) and Los Alamos Neutron Science Center (LANSCE): feasibility studies for measuring the low energy cross section for n – p radiative capture; measurements of the response of BC418 plastic scintillator to low energy protons, yielding very precise results from 100 keV to 3.6 MeV; and measured of the total cross section for n – p scattering by absorption from 150 to 800 keV, filling in a significant gap in the total cross section data below 500 keV. I will present the methods and results of these experiments, and discuss future planned measurements of these low energy interactions.