

Abstract Submitted  
for the DNP11 Meeting of  
The American Physical Society

**UCN Transport** BRITTNEY VORNDICK, UCNA COLLABORATION  
— The UCNA experiment utilizes ultracold neutrons (UCN) to measure angular correlations in beta-decay. UCN are produced in a solid deuterium source and then coupled to the experimental decay volume through a sequence of guide tubes. Requirements for the guides typically include smooth surfaces, high Fermi potentials, and often a very low depolarization probability per bounce. We review the UCNA guide geometry and characterize the effectiveness of recently developed diamond-like carbon coatings produced by pulsed laser deposition on Cu and quartz tubing. We also describe the development of a UCN shutter to be used to monitor UCN polarization. Finally we present research and development towards new coating processes and materials for UCN guides.

Brittney VornDick  
NCSU

Date submitted: 01 Jul 2011

Electronic form version 1.4