

Abstract Submitted
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Precision Polarimetry with UCN in the UCNA Experiment A.T. HOLLEY¹, North Carolina State University — The UCNA experiment, which uses ultracold neutrons (UCN) to determine the angular correlation between the electron momentum and the neutron spin (the beta-asymmetry) in free polarized neutron decay, was developed to provide a complementary technique to cold neutron beam measurements. Neutron polarization is an important systematic in both approaches, especially since neutron spin flippers are generally required to reduce detector-related asymmetries. Traditionally neutron polarimetry in such experiments amounts to an *ex situ* determination of both the polarizing efficiency and the spin flipping efficiency using, for example, a crossed polarizer analyzer apparatus. This technique was applied to the UCNA polarization system, but the use of UCN in the experiment allows for a second *in situ* method of performing polarimetry which serves as the primary monitor of neutron polarization for UCNA. Results from both polarimetry techniques will be compared, and polarimetry data collected during UCNA running through the 2010 run cycle will be presented.

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