Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Limits on the Fierz Interference term for the free neutron KEVIN HICKERSON, California Institute of Technology, UCNA COLLABORATION — We report on efforts to extract limits on the Fierz interference term for the free neutron, b_n, using ultracold neutrons (UCN). The UCNA experiment at LANSCE, designed to measure the neutron beta asymmetry, uses a 4π spectrometer to measure the electron energy dependence of neutron beta decay and the electron asymmetry in polarized beta decay. The b_n parameter can skew the peak of the beta decay spectrum and modifies the energy dependence of the asymmetry. Thus using the observed energy dependence of the decay distribution and the asymmetry, we can place limits on b_n and test consistency with the Standard Model in which b_n is negligibly small.

Kevin Hickerson
California Institute of Technology

Date submitted: 11 Jan 2013 Electronic form version 1.4