

Abstract Submitted
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Limits on Fierz Interference for the free neutron from the UCNA experiment KEVIN HICKERSON, California Institute of Technology, UCNA COLLABORATION — We report on limits on the Fierz interference term for the free neutron, b_n , using ultracold neutrons (UCN) as measured using the UCNA experiment at the Los Alamos Neutron Science Center. UCNA was designed to measure the energy dependence of the electron beta decay asymmetry using polarized neutrons. Limits on the Fierz term test consistency with the Standard Model (in which b_n is negligibly small) and thus serves as a test for new physics. The b_n parameter can skew the peak of the beta decay spectrum as well as modify the energy dependence of the asymmetry, $A(E)$. Using the same data used to measure A , we can simultaneously place limits on b_n , with only a partial decrease in sensitivity to A . This dual fit allows us to limit the effects of systematic errors, such as detector linearity and energy dependent detector efficiency. We will present results from the 2010 data, as well as the status of analysis of the data collected from the 2011-2013 run cycles.

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