

Abstract Submitted
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Measurement of the Neutron Beta Decay Asymmetry by the UCNA Experiment MICHAEL MENDENHALL, UCNA Collaboration — In free neutron beta decay, the direction of the emitted electron is correlated with the polarization of the decaying neutron. The asymmetry between spin-aligned and spin-antialigned electron emissions is a function of λ , the ratio of axial-vector and vector coupling constants. Together with the neutron lifetime, λ can be used to determine V_{ud} in the CKM matrix. Ultracold neutrons (UCN) are advantageous for measuring the decay asymmetry as they can be nearly 100% polarized and minimize production of neutron-induced backgrounds. Presented here are results from the first measurement of the asymmetry using UCN, performed by the UCNA collaboration in 2007, and improvements for the higher-statistics measurements of this year.

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