

Abstract Submitted
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The future of UCNA: towards a sub-0.4% measurement of the neutron beta decay asymmetry using ultracold neutrons MICHAEL MENDENHALL, California Institute of Technology, UCNA COLLABORATION — The UCNA experiment uses trapped ultracold neutrons (UCN) to measure the neutron beta decay asymmetry “ A ”. Since publication of a proof-of-principle result in 2009, a series of improvements have increased the statistical and systematic sensitivity of the experiment, from an initial 4% determination of A to the 1.4% result published in 2010 and the soon-to-be-published $\sim 0.7\%$ measurement. This talk describes plans for pushing the UCNA experiment towards the limits of its sensitivity (below 0.4%), including higher precision polarimetry and energy calibrations, thinner windows to decrease backscattering and monte carlo corrections, and improvements in UCN production and transport.

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