

Abstract Submitted
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Continued Analysis of the NIST Neutron Lifetime Measurement Using Ultracold Neutrons¹ CRAIG HUFFER, P.R. HUFFMAN, K.W. SCHELLHAMMER, NC State University, M.S. DEWEY, M.G. HUBER, P.P. HUGHES, H.P. MUMM, A.K. THOMPSON, NIST, Gaithersburg, K. COAKLEY, NIST, Boulder, A.T. YUE, University of Maryland, C.M. O'SHAUGHNESSY, UNC, L. YANG, UIUC — The neutron lifetime is an important parameter for constraining the Standard Model and providing input for Big Bang Nucleosynthesis. The current disagreement in the most recent generation of lifetime experiments suggests unknown or underestimated systematics and motivates the need for alternative measurement methods as well as additional investigations into potential systematics. Our measurement was performed using magnetically trapped Ultracold Neutrons in a 3.1 T Ioffe type trap configuration. The decay rate of the neutron population is recorded in real time by monitoring visible light resulting from beta decay. Data collected in late 2010 and early 2011 is being analyzed and systematic effects are being investigated. An overview of our current work on the analysis, Monte Carlo simulations, and systematic effects will be provided.

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