

Abstract Submitted  
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**aCORN: A Precision Measurement of the Neutron Decay  $a$ -coefficient** F.E. WIETFELDT, R. BADICI, B.M. FISHER, C. TRULL, Tulane University, M. LEUSCHNER, IUCF, B. COLLETT, G.L. JONES, Hamilton College, A. KOMIVES, DePauw University, R. WILSON, B.G. YEROZOLIMSKY, Harvard University, M.S. DEWEY, J.S. NICO, NIST, YU. MOSTOVOY, Kurchatov Institute, J. BYRNE, University of Sussex — The aCORN experiment will make a precision ( $< 1\%$ ) measurement of the electron-antineutrino angular correlation ( $a$ -coefficient) in neutron beta decay. It uses a novel collimation geometry in which the  $a$ -coefficient is proportional to an asymmetry in beta-proton coincidence count rates, so that precision spectroscopy of the particles is not necessary. The apparatus is now being constructed; it will be integrated and tested at the new LENS facility at Indiana University in 2007 and then moved to the NIST Center for Neutron Research for a precision physics measurement in 2008. The current status of design and construction will be presented. Work supported by NSF grants PHY-0420851, PHY-0420361, PHY-0420716, PHY-0420563, and NIST (U.S. Dept. of Commerce).

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