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**MEASUREMENT OF THE H(N,N)H ELASTIC SCATTERING ANGULAR DISTRIBUTION AT  $E_n = 15$  MEV**

Fred B. Bateman<sup>1</sup>, Salah I. Al-Quraishi<sup>2</sup>, Charles E. Brient<sup>2</sup>, Allan D. Carlson<sup>1</sup>, Donald E. Carter<sup>2</sup>, Steven M. Grimes<sup>2</sup>, Robert C. Haight<sup>3</sup>, Thomas N. Massey<sup>2</sup>

<sup>1</sup> *National Institute of Standards and Technology*

<sup>2</sup> *Ohio University*

<sup>3</sup> *Los Alamos National Laboratory*

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We have undertaken an experiment to measure the relative differential cross section for neutron scattering from hydrogen at a neutron energy of 15 MeV, for center-of-mass scattering angles from 60 degrees to 180 degrees. A total of eleven E- $\Delta E$  telescopes are used to detect the scattered protons at laboratory angles of 0,  $\pm 12$ ,  $\pm 24$ ,  $\pm 36$ ,  $\pm 48$ , and  $\pm 60$  degrees. This experiment is intended to extend the earlier work performed by this group at 10 MeV.[1] In order to avoid possible dead time problems and amplifier summing noise, a unique approach to the data acquisition is based on eleven individual data acquisition boards, one for each detector telescope, installed in separate personal computers, each running independently. In this way, no multiplexing of the detector signals is required, and the noise associated with the summing of the signals is eliminated. Also an additional acquisition board and personal computer are used for a neutron detector, with gamma ray discrimination, as a neutron monitor. A detailed description of the data acquisition system will be given, and results from a preliminary analysis of the data will be presented.

[1] N. Boukharouba, F. B. Bateman, C. E. Brient, A. D. Carlson, S. M. Grimes, R. C. Haight, T. N. Massey, and O. A. Wasson, Phys. Rev. C65, 014004 (2002).