

Abstract Submitted  
for the DNP17 Meeting of  
The American Physical Society

**Parity Measurements in the  $^{70}\text{Ga}$  Nucleus<sup>1</sup>** D. C. VENEGAS VARGAS, R. A. HARING-KAYE, K. D. JONES, K. Q. LE, Ohio Wesleyan University, B. L. HARBIN, Northern Kentucky University, J DÖRING, Bundesamt für Strahlenschutz, B ABROMEIT, R DUNGAN, R LUBNA, S. L. TABOR, P. -L TAI, VANDANA TRIPATI, J. M VONMOSS, Florida State University, S. I. MORROW, Houghton College — The odd-odd  $^{70}\text{Ga}$  nucleus was studied at high spin after being produced at Florida State University using the  $^{62}\text{Ni}(^{14}\text{C}, \alpha pn)$  fusion-evaporation reaction at a beam energy of 50 MeV. The resulting  $\gamma$  rays were detected in coincidence using an array of Compton-suppressed Ge detectors consisting of three Clover detectors and seven single-crystal detectors. The linear polarizations of eight  $\gamma$ -ray transitions in  $^{70}\text{Ga}$  were measured by comparing their scattering yields within a Clover detector in the parallel and perpendicular directions relative to the beam axis, under the requirement that at least one other  $\gamma$  ray in  $^{70}\text{Ga}$  was recorded by a single-crystal detector in the array. As a result of these measurements, the parities of six states were confirmed and those of two other states were established for the first time based on a comparison of the experimental polarizations with the predicted ones determined from known spin assignments. The resulting level spectrum of  $^{70}\text{Ga}$  shows both similarities and differences with the predictions of previous shell-model calculations.

<sup>1</sup>This work was supported by the U.S. National Science Foundation and the Ohio Wesleyan University Summer Science Research Program.

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Date submitted: 25 Jul 2017

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