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Parity Measurements in ^{70}Ge[1] B.L. HARBIN, Northern Kentucky University, R.A. HARING-KAYE, D.C. VENEGAS VARGAS, K.D. JONES, K. Q. LE, Ohio Wesleyan University, J. DÖRING, Bundesamt für Strahlenschutz, B. ABROMEIT, R. DUNGAN, R. LUBNA, S.L. TABOR, P.-L. TAI, VANDANA TRIPATHI, J.M. VONMOSS, Florida State University, S.I. MORROW, Houghton College — Previous studies of the ^{70}Ge nucleus have left open questions about its decay spectrum, in particular the spins and parities of the high-spin states. The goal of this work was thus to measure the parity of as many states in ^{70}Ge as possible. High-spin states in ^{70}Ge were produced from the ^{62}Ni(^{14}C,$\alpha 2n$) reaction at 50 MeV performed at Florida State University. The resulting γ decays were measured in coincidence using a Compton-suppressed Ge array consisting of three Clover detectors and seven single-crystal detectors. The parallel and perpendicular Compton-scattering yields in a Clover detector (relative to the beam direction) were measured under the condition that another γ decay in ^{70}Ge was also detected in coincidence. Ultimately, the linear polarizations of eight transitions in ^{70}Ge were measured, leading to the confirmation of eight parity assignments. In general, the linear polarization measurements for the low-spin transitions show good agreement with those measured previously as well as with theoretical predictions based on previous angular distribution measurements.

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