Abstract Submitted
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Evolution of Collectivity with Spin in ^{70}As[1] R.M. ELDER, R.A. HARING-KAYE, Ohio Wesleyan University, S.I. MORROW, Houghton College, S.L. TABOR, V. TRIPATHI, P.C. BENDER, Florida State University, N.H. MEDINA, P. ALLEGRO, University of São Paulo, J. DÖRING, Bundesamt für Strahlenshutz — The high-spin decay of ^{70}As was studied using the ^{55}Mn(^{18}O, $3n$) reaction at 50 MeV and a Compton-suppressed Ge array consisting of three Clover detectors and seven single-crystal detectors at Florida State University. Based on prompt γ-γ coincidences and γ-ray relative intensities measured in the experiment, several previously proposed γ-ray transitions have been confirmed and additional transitions have been placed in the level scheme. In particular, members of a "missing" negative-parity, odd-spin band were observed. The yrast positive-parity band shows similarities to those of neighboring odd-odd isotopes, including signature splitting and large alternations in the $B(M1)/B(E2)$ ratios. Kinematic moments of inertia were calculated for each observed high-spin band and roughly indicate a convergence to the expected rigid-body value. Theoretical shape calculations indicate a nearly prolate shape at high spin, as well as a possible oblate shape associated with some low-spin, negative-parity states.

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