Abstract Submitted
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Approaching the Island of Inversion: ^{34}**P**[1] PETER C. BENDER, CALEM HOFFMAN, MATHIS WIEDEKING, J.M. ALLMOND, L.A. BERNSTEIN, J.T. BURKE, D.L. BLEUEL, R.M. CLARK, P. FALLON, B.L. GOLDBLUM, T.A. HINNERS, H.B. JEPPESEN, S.L. LEE, I.-Y. LEE, S.R. LESHER, A.O. MACCHIAVELLI, M.A. MCMAHAN, D. MORRIS, M. PERRY, L. PHAIR, N.D. SCIELZO, S.L. TABOR, V. TRIPATHI, A. VOLYA, Florida State University
— Yrast states in ^{34}P were investigated using the ^{18}O(^{18}O,pn) reaction at energies of 20, 24, 25, 30, and 44 MeV at Florida State University and at Lawrence Berkeley National Laboratory. The level scheme was expanded, γ-ray angular distributions were measured, and lifetimes were inferred with the Doppler-shift attenuation method by detecting decay protons in coincidence with one or more γ rays. The results provide a clearer picture of the evolution of structure approaching the "Island of Inversion", particularly how the 1 and 2 particle-hole (ph) states fall in energy with increasing neutron number approaching inversion. Shell model calculations made using a small modification of the WBP interaction reproduce the negative-parity, 1-ph states rather well.

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