Abstract Submitted
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Core-coupled protons, $f_{7/2}$ intruder states, and competing $g_{9/2}$ proton and neutron structures in ^{65,67}Cu[1] C.J. CHIARA, I. STEFANESCU, A.A. HECHT, N. HOTELING, A. WÖHR, U. of Maryland and ANL, W.B. WALTERS, U. of Maryland, S. ZHU, R.V.F. JANSSENS, M.P. CARPENTER, E.G. JACKSON, B.P. KAY, T. LAURITSEN, E.A. MCCUTCHAN, D. SEWERYNIAK, ANL, R. BRODA, B. FORNAL, W. KRÓLAS, T. PAWŁAT, J. WRZESIŃSKI, IFJ PAN, X. WANG, ANL and U. of Notre Dame — The nuclei ^{65,67}Cu were studied in reactions between a 430-MeV ^{64}Ni beam and a thick ^{238}U target with the Gammasphere array. Decay schemes for both nuclei have been extended, with spin and parity assignments constrained by gamma-ray angular distributions and correlations. Positive-parity structures, based on $p_{3/2}$ protons coupled to negative-parity Ni core states, have been identified above the known $9/2^+$ states. In ^{67}Cu, a negative-parity dipole band built upon a $\pi f_{7/2}^{-1}$ state has been observed, as were two shorter negative-parity sequences. A qualitative description of the level structures has been obtained through comparison with odd-A Cu systematics and neighboring even-even Ni and Zn cores. Shell-model calculations using JUN45 and jj44b effective interactions were performed for ^{65,67}Cu; the successes and limitations of the calculations will be discussed.

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