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Level structure of ^{69}Zn and the nature of yrast excitations near N=40[1] R.V.F. JANSSENS, S. ZHU, Argonne National Laboratory, C.J. CHIARA, W.B. WALTERS, University of Maryland, M. ALBERS, M. ALCORTA, P.F. BERTONE, M.P. CARPENTER, J.P. GREENE, C.R. HOFFMAN, F.G. KONDEV, Argonne National Laboratory, N. LARSON, S.N. LIDDICK, Michigan State University, T. LAURITSEN, C. PROKOP, A.M. ROGERS, D. SEWERYNIAK, Argonne National Laboratory, S. SUCHYTA, Michigan State University — The region of nuclei around $^{68}Ni_{40}$, with its closed proton shell and closed neutron harmonic-oscillator sub-shell, continues to be of much interest as recent data indicate that the stabilizing effects of the N=40 gap are rather localized in N and Z. There is evidence for the onset of collectivity and strong polarization of the ^{68}Ni core in neighboring nuclei of the region. With two protons and one neutron hole in ^{68}Ni, the structure of ^{69}Zn provides an opportunity to learn about the nature of its yrast excitations, and to identify the orbitals responsible for polarization effects. Excited states in ^{69}Zn were populated with deep-inelastic reactions of a ^{70}Zn beam at 430 MeV on a thick 197Au target. A level scheme, with states built on the previously known 13.76(2)-hour isomer, will be presented, along with comparisons with the results of shell-model calculations.

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