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High Spin Structure in Neutron Rich Zn Isotopes A.A. HECHT, N. HOTELING, Maryland, Argonne Natl Lab, W.B. WALTERS, Maryland, M.P. CARPENTER, R.V.F. JANSSENS, T. LAURITSEN, D. SEWERYNIAK, X. WANG, S. ZHU, Argonne Natl Lab, B. FORNAL, R. BRODA, W. KROLAS, J. WRZESINSKI, Niewodniczanski Inst of Nucl Phys, Poland, A. WOEHR, Notre Dame, N.J. STONE, Tennessee, J. STONE, Maryland — The neutron rich region near doubly-magic ^{78}Ni is significant for both nuclear structure and nuclear astrophysics: as input for models on shell structure near the neutron drip-line and as the seed region for the beginning of the rapid neutron capture process of nucleosynthesis. This region is not easily accessible and most of the data towards the drip line are on low spin states. To expand this knowledge to high spin states, a deep inelastic scattering (DIS) experiment was performed at Argonne National Laboratory. Pulsed beams of ^{82}Se and ^{64}Ni impinged on a target of ^{238}U and the gamma rays emitted from the DIS products were observed using the Gammasphere detector array. $\gamma - \gamma - \gamma$ coincidence matrices were made with both prompt and delayed data and excited states of $^{68-78}\text{Zn}$ were observed. Angular correlations and new high spins states were measured for ^{74}Zn and several other Zn isotopes. This work was supported in part by the US DOE under Contract Nos. W-31-109-ENG-38, DE-FG02-94-ER40834 and Polish Sci. Committee Grant No. 1PO3B-059-29.

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