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Single-particle structure of neutron-rich N=40 isotopes A. WESTERBERG, K. WIMMER, Central Michigan University, V. BADER, Michigan State University, C. BANCROFT, D. BAROFSKY, Central Michigan University, T. BAUGHER, D. BAZIN, J. BERRYMAN, Michigan State University, H. CRAWFORD, Lawrence Berkeley National Laboratory, L. FRAILE, Universidad Complutense Madrid, A. GADE, C. LANGER, S. LIDDICK, Michigan State University, J. LLOYD, Central Michigan University, E. LUNDERBERG, Michigan State University, F. NAQVI, Yale University, B. OLAIZOLA, Universidad Complutense Madrid, F. RECCHIA, M. SCOTT, J. TOMPKINS, Michigan State University, C. WALZ, TU Darmstadt, D. WEISSHAAR, S. WILLIAMS, Michigan State University
— Spectroscopic studies of neutron-rich nuclei around N=40 have been performed at NSCL utilizing the S800 spectrometer and the GRETINA gamma detector array. The study focused on the one-neutron removal reactions from ^{68}Ni and ^{64,66}Fe. An experimental challenge in this region of the nuclear chart is the occurrence of low-lying isomeric states resulting from the neutron $\nu g_{9/2}$ intruder orbital. This experiment employed a new technique of combined prompt and delayed gamma-spectroscopy using a CsI(Na) array at the end of the focal plane detector box of the S800 spectrograph to tag the population of an isomeric state. This approach allowed to quantify the occupancies of the intruder neutron $\nu g_{9/2}$ and $\nu d_{5/2}$ orbitals in ^{68}Ni and ^{64,66}Fe.

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