

Abstract Submitted  
for the DNP11 Meeting of  
The American Physical Society

**Isomeric levels of nuclei near  $N = 40$**  S. SUCHYTA, S. LIDDICK, H. CRAWFORD, G. GRINYER, A. KLOSE, P. MANTICA, J. PEREIRA, A. SCHNEIDER, S. VINNIKOVA, NSCL/MSU, C. CHIARA, ANL/U. of M., W. WALTERS, U. of M., M. CARPENTER, G. GURDAL, L. MCCUTCHAN, S. ZHU, ANL — The neutron rich nuclei near  $N = 40$  and  $Z < 28$  challenge our theoretical understanding of shell structure in this region. As protons are removed from the  $f_{7/2}$  single-particle state, rapid changes in collectivity are observed and attributed to the influence of the neutron  $g_{9/2}$  intruder orbital. Even the removal of two protons between  $^{68}\text{Ni}$  and  $^{66}\text{Fe}$  gives rise to a large drop by 1460 keV for the energy of the first excited  $2^+$  state from which an increase in collectivity has been inferred. The gamma-ray decay of isomeric states near  $N = 40$  were studied at the NSCL to investigate nuclear structure in this region. We report the low level structures that were confirmed for  $^{64}\text{Mn}$  and newly proposed for  $^{66}\text{Mn}$  and  $^{64}\text{V}$ .

Scott Suchyta  
NSCL/Michigan State University

Date submitted: 30 Jun 2011

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