

Abstract Submitted  
for the DNP13 Meeting of  
The American Physical Society

**Deformation and shape coexistence in  $^{66,70}\text{Ni}$  and  $^{69,71}\text{Cu}$  nuclei near  $N = 40$** <sup>1</sup> W.B. WALTERS, J. HARKER, C.J. CHIARA, Maryland, R.V.F. JANSSENS, M. ALBERS, M. ALCORTA, P.F. BERTONE, M.P. CARPENTER, C.R. HOFFMAN, F.G. KONDEV, T. LAURITSEN, A.M. ROGERS, D. SEWERY-  
NIAK, S. ZHU, ANL, R. BRODA, B. FORNAL, W. KROLAS, J. WRZESINSKI, Krakow, N. LARSON, S.N. LIDDICK, C. PROKOP, S. SUCHYTA, MSU, H.M. DAVID, D.T. DOHERTY, Edinburgh — New data will be presented for the levels of  $^{66,70}\text{Ni}$  and  $^{69,71}\text{Cu}$  that extend some of the previously indicated features of deformation and shape coexistence in this region. [R. Broda et al., Phys. Rev. C 86, 064312 (2012)] Excited states in these nuclei were populated through multinucleon-transfer reactions using  $^{70}\text{Zn}$  beams provided by the ATLAS facility at ANL. In particular, possible structure associated with the  $0_3^+$  level in  $^{66}\text{Ni}$  will be discussed. New levels will be presented in  $^{69,71}\text{Cu}$  that extend the 2-particle-1-hole structures to higher energy and spin. [C. J. Chiara et al., Phys. Rev. C 85, 024309 (2012)] Data will be presented that support the placement of a new level in  $^{70}\text{Ni}$  at 2912 keV with a spin and parity of (5-).

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