Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Neutron-removal reactions in the 100Sn region GIORDANO CERIZZA, KATE JONES, ROBERT GRZYWACZ, ANDREW AYRES, Univ of Tennessee, Knoxville, TRAVIS BAUGHER, Michigan State Univ, DANIEL BAZIN, ALEXANDRA GADE, DIRK WEISSHAAR, NSCL and Michigan State Univ, KATHRIN WIMMER, NSCL, JEFF TOSTEVIN, University of Surrey, ON BEHALF OF THE 09020 COLLABORATION — Characterizing the nature of single-particle states outside of double shell closures is essential to a fundamental understanding of nuclear structure. This is especially true for those doubly magic nuclei that lie far from stability and where the shell closures influence nucleosynthetic pathways. The region around 100Sn is important due to the proximity of the N=Z=50 magic numbers, the proton drip line, and the end of the rp-process. However, owing to low production rates, there is a lack of spectroscopic information and no firm spin-parity assignment for ground states of odd-A isotopes close to 100Sn. Neutron knockout reaction experiments on a beam of 108Sn have been performed at the NSCL. By measuring gamma rays and momentum distributions of the reaction residues, the spins of the ground and first excited states of 107Sn have been established. The results are compared to eikonal-model reaction calculations. One-neutron knockout reactions from below the N=50 closed shell have been observed and estimated with the measurement of inclusive and exclusive cross sections.

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Date submitted: 24 Jun 2015 Electronic form version 1.4