Abstract Submitted
for the APR05 Meeting of
The American Physical Society

Survey of ground state neutron spectroscopic factors from Li to Cr isotopes[1] HUI-CHING LEE, Physics Dept, Chinese University of Hong Kong & NSCL, Michigan State University, BETTY TSANG, WILLIAM LYNCH, NSCL, Michigan State University — The success of the Shell Model has prompted many measurements to extract the spectroscopic factors which describe the configuration of single particle orbitals. We have extracted the ground state to ground state neutron spectroscopic factors for 79 nuclei ranging in Z from 3 to 24 by analyzing the past measurements of the angular distributions of (d,p) and (p,d) reactions in a systematic and consistent manner [1]. For the Ca isotopes from ^{40}Ca to ^{48}Ca, the spectroscopic factors follow the predictions of the single particle model predictions as well as predictions from shell model suggesting Ca isotopes have good spherical cores with well defined valence nucleons. For the 59 nuclei where modern shell model calculations [Oxbash] are available, with the exception of the deformed F and Ne isotopes, the experimental spectroscopic factors for most nuclei agree with predictions from modern day shell model to within 20%. This work is supported by the NSF Grant No. NSF-PHY-01-10253 and SURE. Reference: [1] X.D.Liu, M.A.Famiano,W.G.Lynch,M.B.Tsang,and J.A.Tostevin, Phys. Rev. C69 (2004) 1.

[1]Survey of ground state neutron spectroscopic factors from Li to Cr

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Date submitted: 14 Jan 2005 Electronic form version 1.4