Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Measurement of the absolute B(E2;$0_1^+ \rightarrow 2_1^+$) strength in the $^{106-110}$Sn isotopes via intermediate-energy Coulomb excitation. C. VAMAN, D. BAZIN, A. BECERRIL, A. CHESTER, J. COOK, A. GADE, D. GALAVIZ, T. GLASMACHER, V. MOELLER, W. MUELLER, T. RUSS, A. SCHILLER, K. STAROSTA, NSCL, Michigan State University, C. ANDREOIU, University of Guelph, Canada — Sn isotopes at Z=50 provide the longest shell-to-shell chain of semi-magic nuclei investigated to date in nuclear spectroscopy. The nearly constant energy of the first excited 2_1^+ states for isotopes between N=50 and N=82 is attributed to the fact that the valence nucleons of one kind outside the doubly magic core do not affect the near-spherical nuclear shape. Except for the stable Sn isotopes, the B(E2, $0_1^+ \rightarrow 2_1^+$) values are sparsely known. An intermediate energy Coulomb excitation experiment was performed at the NSCL to study the first excited 2_1^+ states in the $^{106-110}$Sn isotopes. The Sn isotopes beams obtained following the fragmentation of ^{124}Xe and selection with the A1900 fragment analyzer, impinged on a 212 mg/cm2 thick Au target at an energy of 140 MeV/nucleon. Gamma rays were observed using the highly segmented high purity SeGA Ge array. The particle identification and the determination of the scattering angles were performed with the detector system of the high-resolution S800 spectrograph. This talk presents the results of the B(E2, $0_1^+ \rightarrow 2_1^+$) excitation strength measurements and a comparison with the shell model predictions for $^{106-110}$Sn isotopes.

Constantin Vaman
NSCL, MSU

Date submitted: 06 Jul 2005 Electronic form version 1.4