Abstract Submitted
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Probing Spin-Isospin Excitations in Proton-Rich Nuclei via the (p,n) Reaction[1] JACLYN SCHMITT, REMCO ZEGERS, DANIEL BAZIN, ALEX CARLS, NSCL/MSU, ALYSSA DAVIS, Swarthmore College, MILES DENUDT, NSCL/MSU, BINGSHUI GAO, Institute of Modern Physics, CHARLES HULTQUIST, SHUMPEI NOJI, JORGE PEREIRA, RACHEL TITUS, NSCL/MSU, JUAN ZAMORA, Universidade de São Paulo — Tracking the evolution of nuclear properties away from stability serves as a valuable test for nuclear models. The proton-rich nuclei ^{12}O and ^{11}N were studied via the (p,n) reaction in inverse kinematics using ^{12}N and ^{11}C beams, respectively, at 100 MeV/A at the National Superconducting Cyclotron Laboratory (NSCL). The differential cross sections can be calculated from the energy and angle of the recoil neutrons, measured by the Low Energy Neutron Detector Array (LENDA). Then the Gamow-Teller transition strength can be extracted from the cross section and compared to predictions of theoretical models. In the case of ^{12}O, the resulting structure information can also be compared to the mirror nucleus ^{12}Be to explore possible mirror symmetry breaking for extreme proton-to-neutron ratios. This experiment will also establish the (p,n) reaction as a probe to extract Gamow-Teller strengths from proton-rich nuclei, which can be used to study isotopes up to the ^{100}Sn region during the FRIB era. Progress of the analysis for this experiment will be presented.

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