

Abstract Submitted
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Mirror nucleon removal reactions in p-shell nuclei¹ ANTHONY KUCHERA, TAN PHAN, Davidson College, DANIEL BAZIN, Michigan State University, MONA COLLABORATION COLLABORATION — Nucleon removal reactions have been shown to be an effective tool for studying the single particle structure of nuclei. However, the theoretical errors associated with the extraction of spectroscopic factors from the measured partial cross sections is still a matter of debate. This work continues efforts to experimentally probe and possibly benchmark the reaction model used to calculate the single particle cross sections. Three different single nucleon knockout reactions were performed from p-shell nuclei with masses $A=7, 9$, and 10 at the National Superconducting Cyclotron Laboratory. The residual fragments from the reactions were detected in coincidence with gamma-rays to allow partial cross sections to individual states to be determined. Variational Monte Carlo radial overlaps and densities were used as inputs into the eikonal reaction model to calculate single particle cross sections in a manner consistent with the nuclear structure model used to calculate the spectroscopic factors. Comparisons between measured and calculated cross sections, as well as between mirror reactions, are performed in an effort to shed light on the limitations of the reaction model in particular the core survival approximation.

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