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Constraining the cross section of 82Se(n,g)83Se to validate the beta-Oslo method KATHERINE CHILDERS, SEAN LIDDICK, ARTEMIS SPYROU, ALEX DOMBOS, REBECCA LEWIS, FARHEEN NAQVI, CHRISTOPHER PROKOP, ANDREA RICHARD, STEVEN QUINN, Michigan State University, ANN-CECILIE LARSEN, MAGNE GUTTORMSEN, LUCIA CAMPO, SUNNIVA SIEM, THERESE RENSTROM, University of Oslo, DARREN BLEUEL, Lawrence Livermore National Laboratory, BENJAMIN CRIDER, Mississippi State University, AARON COUTURE, SHEA MOSBY, Los Alamos National Laboratory, GEORGE PERDIKAKIS, Central Michigan University — The r-process is believed to be one of the major sources of heavy elements. In order to better understand the r-process, neutron-capture cross sections are needed. Neutron-capture cross sections of many r-process nuclei are poorly known due to short half-lives. This has led to the development of techniques such as the beta-Oslo method, which uses beta decay to populate highly excited states of a nucleus. The resulting de-excitation via the emission of gamma rays is used to extract the NLD and gSF of the daughter nucleus. These nuclear properties are used to experimentally constrain the neutron-capture cross section. A validation will be performed with the ^{82}Se(n,gamma)^{83}Se reaction. The beta decay of ^{83}As to ^{83}Se has been studied at the NSCL. The NLD and gSF of ^{83}Se has been extracted using the beta-Oslo method and fed into TALYS to constrain a neutron-capture cross section. The constrained cross section will be compared to a direct measurement.

Katherine Childers
Michigan State Univ

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