

Abstract Submitted
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Developing the $(d,p\gamma)$ reaction as a surrogate for (n,γ) in inverse kinematics¹ ALEXANDRE LEPAILLEUR, TRAVIS BAUGHER, JOLIE CIZEWSKI, ANDREW RATKIEWICZ, DAVID WALTER, Rutgers University, STEVEN PAIN, Oak Ridge National Laboratory, KARL SMITH, University of Tennessee, HEATHER GARLAND, Gettysburg, GODDESS COLLABORATION — The r-process that proceeds via (n,γ) reactions on neutron-rich nuclei is responsible for the synthesis of about half of the elements heavier than iron. Because (n,γ) measurements on short-lived isotopes are not possible, the $(d,p\gamma)$ reaction is being investigated as a surrogate for (n,γ) . Of particular importance is validating a surrogate in inverse kinematics. Therefore, the $^{95}\text{Mo}(d,p\gamma)$ reaction was measured in inverse kinematics with stable beams from ATLAS and CD_2 targets. Reaction protons were measured in coincidence with gamma rays with GODDESS – Gamma-sphere ORRUBA: Dual Detectors for Experimental Structure Studies. The Oak Ridge Rutgers University Barrel Array (ORRUBA) of position-sensitive silicon strip detectors was augmented with annular arrays of segmented strip detectors at backward and forward angles, resulting in a high-angular coverage for light ejectiles. Preliminary results from the $^{95}\text{Mo}(d,p\gamma)$ study will be presented.

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