

Abstract Submitted  
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**Determining Electron-capture Rates of pf-shell Nuclei in Explosive Stellar Environments**<sup>1</sup> A.L. COLE, A.C. DOMBOS, Physics Department, Kalamazoo College, R.G.T. ZEGERS, SAM M. AUSTIN, B.A. BROWN, L. VALDEZ, NSCL, JINA, Department of Physics and Astronomy, Michigan State University, S. GUPTA, Indian Institute of Technology Ropar, G.W. HITT, Khalifa University of Science, Technology & Research — The electron-capture rates on pf-shell nuclei are required to model the evolution of core-collapse and thermonuclear supernovae. The majority of these rates are determined from calculated Gamow-Teller strength (B(GT)) distributions, as it's not feasible to measure the B(GT) distributions for all pf-shell nuclei. We present preliminary results of a systematic comparison between the electron-capture rates of 13 pf-shell nuclei determined from experimental B(GT) distribution measurements and the electron-capture rates of nuclei determined only from calculated B(GT) distributions, as measurements do not exist. The B(GT) distribution calculations were performed with the shell model using two different interaction Hamiltonians.

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