## Abstract Submitted for the APR14 Meeting of The American Physical Society

Time-of-flight Mass Measurement of Neturon-rich Nuclei<sup>1</sup> ZACHARY MEISEL, Michigan State University, National Superconducting Cyclotron Laboratory, Joint Institute for Nuclear Astrophysics, S. GEORGE, MPIK, J. BROWNE, MSU, NSCL, JINA, D. BAZIN, B.A. BROWN, MSU, NSCL, F. CARPINO, Western Michigan University, H. CHUNG, WMU, A. ESTRADE, The University of Edinburgh, M. FAMIANO, WMU, JINA, A. GADE, MSU, NSCL, M. MATOS, Oak Ridge National Laboratory, W. MITTIG, MSU, NSCL, F. MONTES, JINA, NSCL, D. MORISSEY, MSU, NSCL, J. PERIERA, JINA, NSCL, H. SCHATZ, MSU, NSCL, JINA, J. SCHATZ, None, M. SCOTT, MSU, NSCL, D. SHAPIRA, ORNL, K. SMITH, University of Notre Dame, JINA, J. STEVENS, MSU, NSCL, W. TAN, UND, K. WIMMER, WMU, NSCL, J. WINKELBAUER, MSU, NSCL, JINA, J. YURKON, NSCL — Nuclear masses can be used to identify changes in nuclear structure and are necessary for accurate modeling of extreme astrophysical environments. Beyond the limit of known masses, theoretical predictions are relied upon, however these predictions often disagree. The TOF-B $\rho$  method provides a way to measure the masses of nuclei far from the valley of beta-stability with sufficient precision to map general features in nuclear structure and substantially reduce nuclear physics uncertainty in astrophysics simulations. We recently performed a TOF-B $\rho$  mass measurement at the NSCL where significant progress has been made on the neutron-rich side of stability in the Sulfur to Zinc region. Preliminary data and details of the analysis procedure will be discussed.

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