

Abstract Submitted  
for the DNP07 Meeting of  
The American Physical Society

**TOF Mass Measurements of Very Exotic Nuclides: an Input for Astrophysical Calculations** M. MATOŠ, A. ESTRADA, M. AMTHOR, D. BAZIN, A. BECERRIL, T. ELLIOT, D. GALAVIZ, A. GADE, G. LORUSSO, F. MONTES, J. PEREIRA, M. PORTILLO, A.M. ROGERS, H. SCHATZ, A. STOLZ, MSU, A. APRAHAMIAN, Notre Dame, D. SHAPIRA, ORNL, E. SMITH, OSU, S. GUPTA, M. WALLACE, LANL — Atomic masses play a crucial role in many nuclear astrophysics calculations. Very exotic nuclei can be accessed by time-of-flight techniques at radioactive beam facilities. The NSCL facility provides a well-suited infrastructure for TOF mass measurements of very exotic nuclei. At this facility, we have recently implemented a TOF- $B\rho$  technique and performed mass measurements of neutron-rich nuclides in the Fe region, important for calculations of the r-process and processes occurring in the crust of accreting neutron stars. Description of the TOF technique, results and future plans related to nuclear astrophysics will be presented.

M. Matoš  
MSU

Date submitted: 15 Aug 2007

Electronic form version 1.4