Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Mass Measurements of r-process Nuclei Using the TOF-Bρ Technique at the NSCL[1] K. WANG, CMU, M. FAMIANO, WMU, A. ESTRADE, T. CHAPMAN, N. NEPAL, G. ZIMBA, CMU, K. BHATT, B. FAMIANO, J. JENKINS, L. KLAN, WMU, H. SCHATZ, T. BAUMANN, D. BAZIN, T. GINTER, S. JIN, S. LIDDICK, J. PEREIRA, N. RIJAL, O. TARASOV, NSCL, J. DOPFER, M. GILES, A. ROGERS, UML, S. GEORGE, MPIK, Z. MEISEL, OU — The r-process plays a key role in the nucleosynthesis of more than half of the nuclei heavier than iron. Mass is one of the most fundamental nuclear data for r-process models because it is essential to calculate other nuclear properties such as Q-values for β-decays, neutron capture rates and equilibrium abundance distributions. The trends of masses along the isotopic chains towards N=82 can help us to test the models calculating the masses in the r-process path which is out of reach for current facilities. At the NSCL, we have conducted a mass-measurement experiment using time-of-flight–magnetic-rigidity (TOF-Bρ) technique for neutron-rich isotopes from Zr to Ru around N=70 produced by the projectile fragmentation of ^{124}Sn. I will present the preliminary results of this experiment.

[1]We acknowledge supports from NSF grants (PHY-1712832, PHY-1430152) and FRIB-CSC program.

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Date submitted: 29 Jun 2019 Electronic form version 1.4