Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Offline commissioning and simulations of the Notre Dame MR-TOF BIYING LIU, Xi'an Jiaotong University, JAMES KELLY, MAXIME BRODEUR, University of Notre Dame — Multi-Reflection Time-OF-Flight mass spectrometers (MR-TOF) are more and more commonly used in nuclear physics as either a high-resolution mass separator or even to perform high-precision mass measurements. One such MR-TOF has been constructed at the University of Notre Dame (ND) to be used as isobar separator for the future N = 126 beam factor at Argonne National Laboratory. The first series of off-line commissioning of the ND MR-TOF will be presented. A careful optimization of the potential on the various mirror electrodes and the injection optics have resulted in resolving powers reaching 60,000 after 200 round trips. However, it was also observed that as the time-of-flight increases, the efficiency drops rapidly. Detailed ion optical simulations were then performed revealing the need for a set of steering electrode up stream from the MR-TOF.

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Date submitted: 31 Jul 2017 Electronic form version 1.4