

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Development of a high-rate ion counter for particle identification with GODDESS¹ TRAVIS BAUGHER, JOLIE CIZEWSKI, ANDREW RATKIEWICZ, Rutgers University, STEVEN PAIN, Oak Ridge National Laboratory — Gammasphere-ORRUBA Dual Detectors for Experimental Structure Studies (GODDESS) consists of the Oak Ridge-Rutgers University Barrel Array (ORRUBA) of position-sensitive silicon detectors placed inside the Gammasphere target chamber to measure particle-gamma coincidences. Experiments performed in inverse kinematics result in heavy-ion recoils at very forward angles. Detecting and identifying these recoils with high efficiency and low dead time is crucial for experiments, in particular experiments with contaminated beams. An ionization chamber has been designed, built and tested to be incorporated into the GODDESS setup to count and identify recoiling heavy ions. The design of the gas-filled, gridded ionization chamber utilizes 22 anode grids to measure energy loss of the heavy ion recoils and a plastic scintillator for timing measurements. The anode grids are tilted at 30 degrees to handle high incident-particle rate. The detector was developed, built and tested at Oak Ridge National Laboratory and will be used in GODDESS measurements with stable and rare isotope beams.

¹This work was supported in part by the U.S. Department of Energy and National Science Foundation.

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Date submitted: 30 Jun 2014

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