

Abstract Submitted  
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**COSY Simulations to Guide Commissioning of the St. George Recoil Mass Separator**<sup>1</sup> JACLYN SCHMITT, Department of Physics and Astronomy, Clemson University, MICHAEL MORAN, CHRISTOPHER SEYMOUR, GWENAELLE GILARDY, ZACH MEISEL, MANOEL COUDER, Department of Physics, University of Notre Dame — The goal of St. George (STRong Gradient Electromagnetic Online Recoil separator for capture Gamma ray Experiments) is to measure  $(\alpha, \gamma)$  cross sections relevant to stellar helium burning. Recoil separators such as St. George are able to more closely approach the low astrophysical energies of interest because they collect reaction recoils rather than  $\gamma$ -rays, and thus are not limited by room background. In order to obtain an accurate cross section measurement, a recoil separator must be able to collect all recoils over their full range of expected energy and angular spread. The energy acceptance of St. George is currently being measured, and the angular acceptance will be measured soon. Here we present the results of COSY ion optics simulations and magnetic field analyses which were performed to help guide the commissioning measurements and diagnostic upgrades required to complete those measurements.

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Jaclyn Schmitt  
Department of Physics and Astronomy, Clemson University

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