Contribution ID: **63** Type: **poster**

St George Angular Acceptance Measurements

Wednesday, 23 May 2018 16:30 (1h 30m)

A probe of the angular and energy acceptance capabilities of the St George recoil separator is being carried out at the Nuclear Science Laboratory of Notre Dame. St George will be used to measure (α, γ) reaction cross sections in inverse kinematics at low energies and over a large energy range. S-factor extrapolations, which are used to calculate the reaction rate at stellar energies, can be improved by performing measurements over a broad range of energies. Before measurements can take place, St George must be commissioned. The purpose of commissioning is to establish the angular and energy acceptance characteristics of the separator while simultaneously optimizing the ion optics of the system. A summary of recent results along with a description of the various methods leveraged to determine acceptance will be presented.

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Session Classification: Poster Session