

Abstract Submitted
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Recoil Mass Separator Hysteresis Measurements and Germanium Detector Development¹ ROBERT HEITZ, Virginia Tech — A recoil mass separator, St. George, was proposed to study energy production and nucleosynthesis in stellar and explosive helium burning. To filter out background radiation and select the correct momentum for a charged beam, dipole magnets will be used to bend the beam. It is not possible to measure the magnetic field within the magnet without interfering with this beam. For this reason a hall probe was used to measure the magnetic field outside of the dipole magnet. Data taken comparing the magnetic field reading on this hall probe to that on a nuclear magnetic resonance probe in the center of the magnet, show the hall probe is sufficient to determine the magnetic field inside the dipole magnet. Complementing the St. George mass separator is the Georgina project. This project will be used to study stellar burning by efficiently detecting gamma rays at low energies. In order for the germanium detectors to operate correctly they need to be cooled down to liquid nitrogen temperatures. This is done by filling the detectors with liquid nitrogen and refilling the detectors every six hours. To allow for continuous use of the Georgina project, labview code was printed on a CompactRIO system to fill the germanium detectors at specified offset times.

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