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## Cross Section Measurements of $^{84}\text{Kr}(p,\gamma)^{85}\text{Rb}$

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Understanding how the p-nuclei are created is an important step in learning more about the creation of the heavy isotopes; specifically, the isotopes on the proton-rich side of stability. Besides identifying the astrophysical sites for these events, nuclear data for all of the isotopes and their subsequent reaction rates are crucial information for simulation. Sensitivity studies have mentioned the  $^{84}\text{Kr}(p,\gamma)^{85}\text{Rb}$  reaction as an important nuclear reaction rate due to competition between reaction rates at this branching point in the reaction flow. Measuring this reaction will allow us to identify how the reaction flow moves in this mass region and subsequently may alter the final abundances of the light p-nuclei.

The  $^{84}\text{Kr}(p,\gamma)^{85}\text{Rb}$  cross section measurement was recently performed in inverse kinematics with the ReAccelerating (ReA) facility at the National Superconducting Cyclotron Laboratory (NSCL) at Michigan State University. This was the first measurement on this reaction at astrophysically relevant energies and provided us with a stable beam to test this technique. In the future, we plan on using this technique with unstable beams where p-process cross sections have yet to be measured. Using the SuN detector and the SuNSCREEN cosmic-ray veto detector, we were able to measure the cross section at energies ranging from 2.8-3.5 MeV; preliminary results will be discussed.

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