Abstract Submitted
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First detection of ^{18}F from the ^{14}N$(\alpha,\gamma)^{18}$F reaction with the St. George recoil mass separator[1] L. MORALES, C. SEYMOUR, M. COUDER, A. DOMBOS, S. MOYLAN, G. GILARDY, University of Notre Dame, J. HINNEFELD, Indiana University South Bend, P. HUESTIS, D. ROBERTSON, E. STECH, M. SKULSKI, G. P. A. BERG, M. WIESCHER, University of Notre Dame — The St. George recoil mass separator at the University of Notre Dame has successfully observed its first recoils from the reaction ^{14}N$(\alpha,\gamma)^{18}$F studied in inverse kinematics. The cross section of this reaction contributes to the abundance of ^{22}Ne which is a neutron source for the s-process in TP-AGB, massive helium burning and carbon burning stars via the ^{22}Ne$(\alpha,n)^{25}$Mg reaction. The kinematics and cross section of ^{14}N$(\alpha,\gamma)^{18}$F at low energies make it an ideal candidate for commissioning experiments of St. George and the characterization of the focal plane detector. The St. George ion optics separates the ^{14}N beam and sends the ^{18}F recoils into a particle identification detection system. The identification uses the time-of-flight versus residual energy approach. The particle identification system was developed for the St. George recoil mass separator, in collaboration with Indiana University South Bend. Preliminary results of the first nuclear reaction measured with St. George will be presented.

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