

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Studies of ^{18}Ne using ANASEN¹ L.E. LINHARDT, J.C. BLACKMON, H.E. GARDINER, M. MATOS, B.C. RASCO, K.T. MACON, Louisiana State University, D. SANTIAGO-GONZALEZ, L. BABY, E. KOSHCHIY, E.D. JOHNSON, I. WIEDENHOEVER, G. ROGACHEV, Florida State University, D.W. BARDAYAN, Oak Ridge National Laboratory, LOUISIANA STATE UNIVERSITY TEAM, FLORIDA STATE UNIVERSITY TEAM, OAK RIDGE NATIONAL LABORATORY TEAM — Efficient and selective techniques are required to study reactions important in stellar explosions with radioactive ion beams. The Array for Nuclear Astrophysics Studies with Exotic Nuclei (ANASEN) is designed to study charged-particle reactions important in the αp - and rp - processes with essentially complete solid angle coverage using an array of 40 silicon-strip detectors backed with CsI scintillators, covering an area of roughly 1300 cm^2 . ANASEN also includes an active gas target/detector using a position-sensitive annular gas proportional counter that allows direct measurement of (α,p) reactions in inverse kinematics. Results from some of the first measurements using a partial implementation of ANASEN at the RESOLUT radioactive ion beam facility will be presented, focusing on measurements of $^{17}\text{F}(\text{p},\text{p})^{17}\text{F}$ and $^{17}\text{F}(\text{p},\alpha)^{14}\text{O}$ reactions that are important to understanding the structure of ^{18}Ne and the $^{14}\text{O}(\alpha,\text{p})^{17}\text{F}$ reaction rate.

¹This work is supported by the USDOE and NSF.

Laura Linhardt
Louisiana State University

Date submitted: 02 Jul 2012

Electronic form version 1.4