Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Study of Neutron Deficient 13O JOSEPH BELARGE, G.V. ROGACHEV, Florida State University, J. BLACKMON, Louisiana State University, I. WIEDENHOVER, L. BABY, E.D. JOHNSON, A.N. KUCHERA, E. KOSHCHIY, Florida State University, J. LAI, L. LINHARDT, K. MACON, M. MATOS, Louisiana State University, D. SANTIAGO-GONZALEZ, Florida State University
— Development of theoretical framework that allows the combination of nuclear structure calculations with the continuum is an important objective of modern nuclear theory [A. Volya, PRC 79, 044308 (2009), S. Quaglioni and P. Navratil, PRL 101092501 (2008)]. Due to the low binding energy of exotic isotopes even the lowest excited states are unbound and therefore it is essential to take the continuum into account. We studied the structure of the lightest bound oxygen isotope, ^{13}O, through ^{12}N+p resonance scattering using the new active target detector ANASEN [M. Matos, et al, Proc. Intern. Symp. on Nuclei in the Cosmos, July 19-23, Heidelberg, Germany, p.226 (2010)]. The experiment was performed at the John D. Fox Superconducting Accelerator Laboratory at Florida State University. A rare isotope beam of ^{12}N ions was produced using the radioactive nuclear beam facility RESOLUT. Methane gas was used as a target and also as an active medium for the gas proportional counters of the ANASEN detector. The analysis of the p+^{12}N excitation functions was performed using the R-Matrix approach. The preliminary results of the experiment will be presented.

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Date submitted: 25 Jun 2013 Electronic form version 1.4