Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Beta-Delayed Neutron Spectroscopy Using VANDLE at CARIBU[1] S. TAYLOR, K. KOLOS, R. GRZYWACZ[2], University of Tennessee-Knoxville, S.V. PAULAUSKAS, National Superconducting Cyclotron Laboratory, Michigan State University, M. MADURGA, ISOLDE, CERN, Switzerland, G. SAVARD, Physics Division, Argonne National Laboratory, N.T. BREWER, Physics Division, Oak Ridge National Laboratory, VANDLE COLLABORATION
— Measurement of spectroscopic information on beta-delayed neutrons of neutron rich fission fragments is of interest to the areas of astrophysics, reactor design, nuclear structure and stockpile stewardship. Using the Time of Flight (TOF) method, the Versatile Array of Neutron Detectors at Low Energy(VANDLE)[1,2,3] measured fission fragments of ^{252}Cf provided by CARIBU at Argonne National Lab. ^{135,136}Sb and ^{85}As isotopes were measured to explore the nuclear structure around doubly magic nuclei ^{132}Sn and ^{78}Ni. A new TOF start detector was developed for this experiment using new Silicon Photo-Multipliers from SensL to allow for a lower beta particle energy detection threshold and better timing resolution compared to previous VANDLE experiments.

[1]This work is funded by the U.S. Department of Energy NNSA under the Stewardship Science Academic Alliance program through DOE Cooperative Agreement No. DE-FG52-08NA28552.
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Date submitted: 30 Jun 2015 Electronic form version 1.4