Abstract Submitted
for the SES21 Meeting of
The American Physical Society

**Recent results of spectrum unfolding of the CATRiNA detectors**[1]

ASHTON MORELOCK, SERGIO ALMARAZ-CALDERON, JESUS PERELLO, BEN ASHER, EILENS LOPEZ SAAVEDRA, Florida State University, ZACH MEISEL, THOMAS MASSEY, JUSTIN WARREN, JOSEPH DERKIN, GULA HAMAD, ALEXANDER VOINOV, DOUG SOLTESZ, SHIV SUBEDI, KRISTYN BRANDENBURG, NISHA SINGH, YENUEL JONES-ALBERTY, Ohio University

— The CATRiNA deuterated neutron detector array at FSU has been expanded to include 16 additional EJ315 detectors, making it a powerful and sensitive neutron detector array. Neutron energies can be extracted using their pulse-height spectrum through a method known as spectrum unfolding. Characterization of the array was performed at the Edwards Accelerator Laboratory at Ohio University via reactions $^{9}$Be(d,n) and $^{27}$Al(d,n). Extraction of spectroscopic information from the $^{12}$C(d,n) reaction was also performed. In this work, results of these experiments and upgrades to the spectrum unfolding algorithm will be presented.

[1]This work was supported by the National Science Foundation under Grants No. PHY-1712953 and No.PHY-2012522, and the U.S. Department of Energy under Grants No. DE-FG02-88ER40387, No. DE-NA0003883, No. DE-NA0003909, and No. DE-SC0019042.

Ashton Morelock
Florida State University

Date submitted: 28 Sep 2021 Electronic form version 1.4