Abstract Submitted
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Neutron spectroscopy measurements of the d(^{7}Be,n)^{8}B reaction with a deuterated scintillator array (UM-DSA)[1] MICHAEL FEBBRARO, University of Michigan, Ann Arbor, CORY THORNSBERRY, KATE JONES, KARL SMITH, GIORDANO CERIZZA, University of Tennessee, Knoxville, PATRICK O'MALLEY, DAN BARDAYAN, University of Notre Dame, STEVE PAIN, Oak Ridge National Laboratory, FRED BECCHETTI, University of Michigan, Ann Arbor, JAMES KOLATA, SABRINA STRAUSS, MATT HALL, University of Notre Dame — We present the first results of neutron spectroscopy studies for the d(^{7}Be,n)^{8}B reaction at E(^{7}Be) = 31 MeV with the University of Michigan deuterated scintillator array (UM-DSA). The experiment was performed at the *TwinSol* radioactive ion beam (RIB) facility at the University of Notre Dame. The UM-DSA was developed for neutron spectroscopy studies with radioactive ion beams. It has demonstrated the capability to extract neutron spectra without the use of neutron time-of-flight (n-ToF) [1-2] by utilizing spectrum unfolding techniques. This permits the measurement of cross sections of bound and unbound states with high efficiency and angular coverage. In the case of RIB measurements where low beam intensities limit long path n-ToF, short path n-ToF can be used to discriminate neutrons of interest from room return and background neutrons. High resolution n-ToF is not required since neutron spectra can be extracted using spectrum unfolding. This hybrid method appears to be a useful spectroscopic technique to study neutron reactions with RIBs. [1] M. Febbraro, et al., IEEE TNS (2013) [2] M. Febbraro, et al., EJP (2014)

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