Abstract Submitted
for the DNP15 Meeting of
The American Physical Society

Unbound Resonance of 26F[1] MATTHEW TUTTLE-TIMM, ALI RABEH, NATHAN FRANK, Augustana College, JACLYN BRETT, PAUL DEYOUNG, Hope College, MICHAEL JONES, MICHAEL THOENNESSEN, NSCL/MSU, MONA COLLABORATION — The nuclear structure of a state in a given isotope is determined by which nucleons occupy the bound and unbound energy levels. This state determines the energy of decay, which can be calculated from the energy and momentum of the fragment and neutron. From the calculated decay energy, information about an isotope's nuclear structure can be found. At a National Superconducting Cyclotron Laboratory experiment, a 101.3 MeV/u 27Ne ion beam hit a liquid deuterium target, causing reactions which produced several isotopes. Many of these isotopes decayed, resulting in a charged fragment and one or more neutrons. A superconducting dipole magnet bent the path of the fragments into a series of charged-particle detectors. Neutrons from these decays were measured as they interacted with arrays of scintillating plastic bars. One of the isotopes produced was 26F, formed by 1-proton stripping from the 27Ne beam. This 26F decayed into 25F + n. By calculating the decay energy for this interaction, the first resonant neutron-unbound state in 26F, which has not been significantly observed, will be characterized. In addition, resonances of other unbound nuclear systems may also be included to compare/contrast with these results.

[1]This material is based upon work supported by the National Science Foundation under grants PHY-1306074 and PHY-1404236.

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Date submitted: 30 Jul 2015 Electronic form version 1.4