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# Observation of a Neutron Unbound State in $^{26}\text{F}$

Mark Kasperczyk, '10

*Illinois Wesleyan University*

Nathan Frank, Faculty Advisor

*Illinois Wesleyan University*

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Oral Presentation O7.1

**OBSERVATION OF A NEUTRON UNBOUND STATE IN  $^{26}\text{F}$**

Mark Kasperczyk and Nathan Frank\*  
Physics Department, Illinois Wesleyan University

A neutron unbound state of  $^{26}\text{F}$  was observed for the first time. The  $^{26}\text{F}$  isotopes were produced by a proton-neutron exchange reaction from an 84.75 MeV/u  $^{26}\text{Ne}$  beam on a  $^9\text{Be}$  target at the fast-fragmentation radioactive beam facility of the National Superconducting Cyclotron Laboratory at Michigan State University. The decay of the  $^{26}\text{F}$  isotopes resulted in  $^{25}\text{F}$  isotopes and neutrons which were detected in coincidence using a suite of charged particle detectors and the Modular Neutron Array (MoNA), respectively. Using a simulation, different combinations of Breit Wigner and Maxwellian distributions were compared to see which arrangement fit the data best. For the simulation, a two-body reaction model was used, as was a Q-value of -19.0. Preliminary results indicate a resonant state at approximately 200 keV.

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