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Observation of a Neutron Unbound State in ^{26}F

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Oral Presentation O7.1

OBSERVATION OF A NEUTRON UNBOUND STATE IN ^{26}F

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A neutron unbound state of ^{26}F was observed for the first time. The ^{26}F isotopes were produced by a proton-neutron exchange reaction from an 84.75 MeV/u ^{26}Ne beam on a ^9Be target at the fast-fragmentation radioactive beam facility of the National Superconducting Cyclotron Laboratory at Michigan State University. The decay of the ^{26}F isotopes resulted in ^{25}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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