

Abstract Submitted  
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**Two-Neutron Decay from the Ground State of  $^{26}\text{O}$** <sup>1</sup> HARSHA ATTANAYAKE, CARL BRUNE, DILUPAMA DIVARATNE, PAUL KING, Ohio University, MONA COLLABORATION<sup>2</sup> — Recent experiments have indicated that  $^{24}\text{O}$  is bound and the tests have failed to find bound states of  $^{25}\text{O}$  and  $^{26}\text{O}$ . So to further understand the behavior and properties of neutron-rich heavy oxygen isotopes the study of  $^{26}\text{O}$  is important. Unstable  $^{26}\text{O}$  decays to stable  $^{24}\text{O}$  by emitting two neutrons rather than decaying via  $^{25}\text{O}$ , which has an unbound ground state energy of 770keV. An investigation of  $^{26}\text{O}$  was conducted at the National Superconducting Cyclotron Laboratory, which possesses the capability to produce rare isotope beams and detect neutrons with an efficiency of about 70% with the MoNA detector. The reaction of interest being  $^{26}\text{O} \rightarrow ^{24}\text{O} + 2n$ , production of  $^{26}\text{O}$  was done by one-proton removal from a  $^{27}\text{F}$  beam with an energy of 82 MeV/u impinging on a 705 mg/cm<sup>2</sup> Be target. Coincidence of two neutrons with  $^{24}\text{O}$  was measured for four-vector momentum event reconstruction. The analysis of this experiment will determine the invariant mass of  $^{26}\text{O}$  and the status of the analysis will be presented.

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