Abstract Submitted
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Neutron Radioactivity in ^{26}O and Lifetime Analysis of Neutron-Rich Isotopes[1] CF PERSCH, P.A. DEYOUNG, Hope College, N FRANK, Augustana College, P GUEYE, Hampton University, AN KUCHERA, Davidson, T REDPATH, Michigan State University, MONA COLLABORATION — Currently there is only one known isotope that is likely to exhibit two-neutron radioactivity. This unique occurrence is found when observing neutron-rich ^{26}O. This isotope of oxygen is particularly interesting because early experiments show it living significantly longer than nearby isotopes . In order to gain a better understanding of neutron radioactivity, the MoNA Collaboration is working on determining the lifetime of ^{26}O. To experimentally deduce the lifetime, the change in energy during the emission of neutrons from the ^{26}O nucleus is being measured. A ^{27}F beam was accelerated into a beryllium target, and a variety of interactions occurred. In the case of one-proton removal, ^{26}O was formed. Two neutrons are then emitted from ^{26}O, and the MoNA and LISA detectors are used to measure the velocity of the neutrons. This velocity is compared to the velocity of the fragment ^{24}O. The relative velocity can be used to find the lifetime of ^{26}O. Learning about this lifetime will provide valuable information about neutron-rich isotopes and give more insight into two-neutron radioactivity.

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