

Abstract Submitted
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Lifetime Measurement of ^{26}O ¹ THOMAS REDPATH, NSCL/MSU, MONA COLLABORATION — An interesting property of some neutron-unbound systems is true two-neutron emission where the neutrons are emitted simultaneously as opposed to a sequential decay through an intermediate state. Since neutrons are only affected by the angular momentum barrier, the timescale for this process is much shorter than for two proton emission which is dominated by the Coulomb barrier. One such case is ^{26}O where a very low decay energy was measured and the two valence neutrons are expected to occupy *d*-wave orbitals. Also, the ground state of ^{25}O is located 700 keV higher. In a first experiment, the MoNA collaboration extracted a lifetime of $4.5_{-1.5}^{+1.1}(\text{stat}) \pm 3(\text{syst})$ ps with a confidence level of 82%. Recently, an experiment dedicated to measuring the ^{26}O lifetime in order to improve the confidence level of the measurement was performed at NSCL. The experiment utilized a newly developed segmented target which increased the statistics without degrading the resolution. Preliminary results will be presented.

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Thomas Redpath
NSCL/MSU

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