

Abstract Submitted
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Studying neutron-unbound states produced from a Na-30 beam¹

GRANT BOCK, National Superconducting Cyclotron Laboratory, MSU, THE MONA COLLABORATION — Invariant mass spectroscopy is a well-established technique used to recover information about neutron-unbound states that are not directly measurable, due to very short decay timescales on the order of 10^{-21} s. Measurements of these systems provide crucial benchmarks to help evaluate and improve theoretical models. In 2016, the MoNA Collaboration conducted a measurement of the O-26 half-life during which the Coupled Cyclotron Facility and the A1900 fragment separator at the NSCL supplied F-27, Ne-28, Ne-29, and Na-30 secondary beams produced via projectile fragmentation. These beams were subsequently directed onto a beryllium target. The main focus of the data set was given to the events in which one-proton knockout from F-27 populated neutron-unbound states in O-26. The goal of the current project is to extract the measured decay energy spectra for neutron-unbound states produced from the Na-30 beam and compare them to previous measurements while also searching for new unbound states with decay energies less than 3 MeV.

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