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Spectroscopy of Neutron Unbound Fluorine GREGORY CHRISTIAN, NSCL/MSU, N. FRANK, S. ASH, M. WARREN, Augustana College, A. GADE, A. SPYROU, M. THOENNESEN, NSCL/MSU, T. BAUMANN, G.F. GRINYER, D. WEISSHAAR, NSCL, P.A. DEYOUNG, Hope College, MONA COLLABORATION — Knockout reactions from a beam of 29Ne at ∼60 MeV/u were used to populate the neutron-unbound ground state of ^{28}F, as well as unbound excited states in ^{27}F. These unbound excited states decay through the emission of one or more neutrons, which were detected near zero degrees in the MoNA plastic scintillator array. The remaining charged fragments were deflected by the Sweeper dipole magnet, and their kinematic properties were measured in detectors behind the magnet. The decay energy was then calculated from the measured energies and angles of the neutrons and the fragments. In addition, coincident gamma-rays were measured at the target location using the recently commissioned CAESAR CsI array. The gamma-ray tagging was used to determine whether the neutron decayed to the ground state or an excited state of the daughter nucleus. In this talk, an overview of the experimental technique and results of the analysis will be presented.

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