

Abstract Submitted
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Disappearance of the N=14 Shell M.J. STRONGMAN, T. BAUMANN, D. BAZIN, N. FRANK, S. MOSBY, W.A. PETERS, A. SCHILLER, A. SPYROU, M. THOENNESSEN, NSCL/MSU, C.R. HOFFMAN, S.L. TABOR, Florida State University, J. BROWN, Wabash College, P.A. DEYOUNG, Hope College, J.E. FINCK, Central Michigan University, W.F. ROGERS, Westmont College, MONA COLLABORATION — The decay-energy spectrum of ^{22}N was measured in a neutron-fragment coincidence experiment at the National Superconducting Cyclotron Laboratory at MSU. An excited state of ^{22}N , unbound with respect to neutron emission measured by the Modular Neutron Array (MoNA), was observed in a stripping reaction from a secondary 85 MeV/u ^{26}F beam. The observed decay energy of 650(50) keV places the state, which is interpreted to be the first 3^- level, at an excitation energy of 1.93(22) MeV. Together with the previously measured bound states of ^{22}N , the reduction of the $N = 14$ shell gap at the neutron dripline is observed. The magnitude of the reduction of the shell gap indicates the disappearance of the gap and even a possible reoccurrence of the inversion of the $\nu 1s_{1/2}$ and the $\nu 0d_{5/2}$ levels in the neutron-unbound nucleus ^{21}C .

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