

Abstract Submitted
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Study of nuclear structure of ^{32}Mg to probe the island of inversion¹ YONGCHI XIAO, BEN CRIDER, Mississippi State University, SEAN LIDDICK, KAITE CHILDERS, Michigan State University, PARTHA CHOWDHURY, EDWARD LAMERE, UMass Lowell, REBECCA LEWIS, BRENDEN LONGFELLOW, Michigan State University, STEPHANIE LYONS, NSCL, SHREE NEUPANE, DAVID PEREZ-LOUREIRO, UTK, TIMILEHIN OGUNBEKU, Mississippi State University, CHRIS PROKOP, LANL, ANDREA RICHARD, NSCL, UMESH SILWAL, DURGA SIWAKOT, DYLAN SMITH, Mississippi State University, MALLORY SMITH, NSCL — At the limits of the nuclear landscape, nuclei may exhibit different ground state properties as the result of shell evolution. At the center of the $N=20$ island of inversion in Mg, a recently identified shape coexistent excited $0+$ state was found with potentially large mixing with the ground state. Exploring the nature of these $0+$ states, and the states that are built on top of them, is important for understanding shape coexistence and configuration mixing in this region. An experiment was performed at NSCL to study Mg via the decay of Na and Na (βn) which utilized a CeBrimplantation-decay detector along with ancillary detection arrays for energy and timing characterization. Preliminary results and a tentative level scheme produced from this work will be presented.

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