

Abstract Submitted
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High spin intruder states of ^{47}Sc and ^{48}Sc using fusion evaporation reactions¹ PETER DEROSA, ANDREW MACGREGOR, DANIEL FOULDSHOLT, Student Researcher, PETER BENDER, Professor — Identifying collective states with clear n-particle-n-hole structure near closed shells can reveal deformation driving orbital characteristics. Such states, often high-spin in nature, can be populated using the fusion-evaporation reaction mechanism, extracted using gamma-ray spectroscopy techniques and compared to state-of-the-art theoretical shell model calculations. Recently, an experiment to look for intruder states in $^{47,48}\text{Sc}$ was done using the $^{36}\text{S}(^{14}\text{C}, p)$ and $^{36}\text{S}(^{14}\text{C}, pn)$ reactions at 34-MeV performed at Florida State University's John D. Fox superconducting Laboratory. The experimental setup included an array of HPGe detectors surrounding the enriched ^{36}S as well as a Si particle detector telescope located at zero-degrees with respect to the beam axis. The telescope has allowed specific reaction residue to be correlated with observed γ -rays. We present preliminary results from the experiment.

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