Abstract Submitted
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**High-spin States and Cross-shell Excitations in $^{46}$Ca**[1] JOHN ASH, HIRONORI IWASAKI, NSCL, Michigan State Univ, TEA MIJATOVIC, Ruder Boskovic Institute, ROBERT ELDER, MARA GRINDER, NSCL, Michigan State Univ, YUTAKA UTSUNO, Advanced Science Research Center, Japan Atomic Energy Agency, CHING-YEN WU, JACK HENDERSON, Lawrence Livermore National Laboratory, DIRK WEISSHAAR, ALEXANDRA GADE, MARK-CHRISTOPH SPIEKER, NSCL, BRANDON ELMAN, BRENDEN LONGFELLOW, DANIEL RHODES, NSCL, Michigan State Univ — Investigation into the evolution of shell structure often necessitates probing far from stability, near the neutron dripline. However, in the case of the calcium isotopes, previously inaccessible high-spin states in stable nuclei offer a new direction to examine structure near doubly-magic $^{48}$Ca. These state energies can inform shell model interactions and improve our understanding of cross-shell excitations in the region. To achieve this end, previously unknown states in $^{46}$Ca were populated using the first fusion evaporation reaction at the reaccelerated beam facility (ReA3) of the National Superconducting Cyclotron Laboratory. Using particle and gamma coincidence techniques, several new transitions were observed and compared to large-scale shell model calculations.

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