Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Intruder Structure in N=21, ^{38}Cl Isotope[1] REBEKA SULTANA LUBNA, ELIZABETH RUBINO, SAMUEL TABOR, VANDANA TRIPATHI, MARIA ANASTASIOU, BENJAMIN ASHER, LAGY BABY, JONATHAN BARON, DAVID CAUSSYN, DAVID CLARKE, JESUS PERELLO, KONSTANTINOS KRAVVARIS, NABIN RIJAL, KALISA VILLAFANA, ALEXANDER VOLYA, Florida State Univ, JAMES ALLMOND, Oak Ridge National Laboratory
— Excited states of the ^{38}Cl isotope were populated by the ^{26}Mg(^{18}O,$\alpha pn\gamma$)^{38}Cl fusion evaporation reaction at E_{lab} = 50 MeV. The ^{18}O beam accelerated by a Tandem accelerator at John. D. Fox laboratory, Florida State University, was incident on an enriched ^{26}Mg target. Four clover detectors and one single crystal HPGe detector were used in order to detect the de-exciting γ rays, where a $E - \Delta E$ detector was used to select the charged particles emitted from the compound nucleus ^{44}Ca. The $\gamma - \gamma$ coincidence method, along with the coincidence with charged particles was employed in order to assign new γ rays in ^{38}Cl and to verify the existing ones. The experimental observations will be compared to the shell model calculations with a new interaction currently being developed by the Florida State University Nuclear Physics group.

[1]This material is based upon work supported by the U.S. National Science Foundation under grant No. 1401574(FSU) and 1712953(FSU) and also by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics under contract No. DE-AC05-00OR22725(O

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Date submitted: 05 Jan 2018 Electronic form version 1.4