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Neutron Spectroscopy of Low-Lying Resonances in ^{26}Si via (^{3}He,n)[1] JESUS PERELLO, SERGIO ALMARAZ-CALDERON, BENJAMIN ASHER, NATHAN GERKEN, EILENS LOPEZ, ASHTON MORELOCK, LAGY BABY, Florida State University — Spectroscopic information of low-lying resonant states in the proton-rich isotope ^{26}Si is needed in order to understand various astrophysical scenarios. Final abundances of ^{26}Al in novae are strongly dependent on the ^{25}Al(p,γ)^{26}Si reaction-rate. The ^{25}Al(p,γ)^{26}Si reaction also has implications in the rp-process occurring in novae and X-ray bursts. Additional information is needed to provide spin-parity assignments and to reduce the uncertainties in the partial widths of several low-lying states above the proton threshold in ^{26}Si. A spectroscopy study of the low-lying resonance states in ^{26}Si will be done at John D. Fox lab using neutron/gamma coincidence with the recently developed CATRiNA neutron detector and the FSU Clover gamma detector array at the sensitivity levels needed to constrain the astrophysical reaction rates. States in ^{26}Si are populated via the ^{24}Mg(^{3}He,n)^{26}Si reaction at beam energies of 10 MeV. The CATRiNA array consists of 16 deuterated-benzene liquid scintillator detectors and uses the time-of-flight technique alongside pulse-height information is to extract neutron energies. In this work, we povide neutron information obtained with the CATRiNA detector.

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