Abstract Submitted
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**Study of 38Ca resonances in the 34Ar($\alpha$,p)37K reaction via proton scattering in 37K**[1] A. LAUER, C. DEIBEL, J. BLACKMON, A. HOOD, E. GOOD, K. MACON, D. SANTIAGO, LSU, S. PAIN, K. A. CHIPPS, ornl, T. AHN, F. MONTES, H. SCHATZ, W. ONG, J. BROWNE, K. SCHMIDT, MSU, G. ROGACHEV, S. UPADHYAYULA, S. BEDOOR, J. HOOKER, Y. KOSHCHIY, H. JAYATISSA, TAMU, I. WIEDENHOEVER, L. BABY, M. ANASTASIOU, N. RIJAL, FSU — The 34Ar($\alpha$,p)37K reaction is important in Type I X-ray bursts (XRBs), where nucleosynthesis proceeds through the $\alpha$,p and rp processes up to A<100. Waiting-point nuclei in XRBs (e.g. 34Ar) are in (p,$\gamma$)-($\gamma$,p) equilibrium and may stall the burst, but the ($\alpha$,p) reaction may provide a detour. We performed 37K+p elastic scattering to study the compound nucleus 38Ca at the ReA3 facility at the National Superconducting Cyclotron Laboratory using a 37K beam incident on a $CH_2$ target. Scattered protons were detected in telescopes of Si strip detectors, while coincident heavy recoils were detected in a gas ionization chamber. Experimental results will be presented and implications for XRB nucleosynthesis and observables discussed.

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