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39Ca and its relevance in nuclear astrophysics

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Elemental abundances are excellent probes of classical novae (CN). Sensitivity studies show that $^{38}\text{K}(p,\gamma)^{39}\text{Ca}$ reaction rate uncertainties modify the abundance of Ca by a factor of 60 in CN ejecta. Direct measurements of the $^{38}\text{K}(p,\gamma)^{39}\text{Ca}$ reaction have reduced the uncertainties but discrepancies in resonance energies between different experiments persist. To resolve these, ^{39}Ca was studied using the $^{40}\text{Ca}(p,d)^{39}\text{Ca}$ reaction at a beam energy of 66 MeV using the K600 magnetic spectrometer. This will verify the properties of levels in the region where discrepancies between experiments persist. Preliminary results from the measurements will be presented.

Apply to be considered for a student ; award (Yes / No)?

yes

Level for award;(Hons, MSc, PhD, N/A)?

PhD

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