

$^1\text{H}(^{38}\text{K},\gamma)\text{E=res}$ 2016Lo03

Type	Author	History Citation	Literature Cutoff Date
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2016Lo03: radioactive beams of ^{38}K were produced from the ISAC-I radioactive beam facility at TRIUMF by bombarding a TiC target with 500 MeV protons. Beam ions were separated and accelerated to energies of 410, 541, and 715 keV/nucleon using the DRAGON recoil separator and impinged upon a windowless gas target filled with H_2 with a total integrated beam fluxes of 2.9×10^{12} , 8.8×10^{11} , and 2.5×10^{12} , respectively. De-excitation γ rays were detected with a highly efficient array of 30 BGO detectors surrounding the target; recoils were detected with an ionization chamber and two microchannel plates (MCPs) and identified based on time-of-flight (TOF). Measured E_γ , I_γ . Deduced yields, resonance energies and strengths. Implications on astrophysical $^{38}\text{K}(p,\gamma)$ reaction rate.

 ^{39}Ca Levels

E(level) [†]	J π [#]	Comments
(6157 [‡] 13)	(5/2 ⁺)	E(level): E(p) _{cm} = 386 keV 13. $\omega\gamma < 1.16$ meV with a single-sided 68% C.L. or < 3.5 meV with a 95% C.L. (2016Lo03).
(6286 [‡] 13)	(5/2 ⁺)	E(level): E(p) _{cm} = 515 keV 13. $\omega\gamma < 8.6$ meV with a single-sided 68% C.L. or < 26 meV with a 95% C.L. (2016Lo03).
6450 2	(5/2 ⁺)	E(level): E(p) _{cm} = 679 keV 2. $\omega\gamma = 120$ meV $+50-30(\text{stat})+20-60(\text{sys})$ at the 68% C.L. Possible misprint in text at pg 3 in 2016Lo03 with $\omega\gamma = 120$ meV $+20-30(\text{stat})+20-60(\text{sys})$.

[†] E=S(p)(^{39}Ca)+E(p)_{cm} with S(p)=5770.9 6 (2017Wa10) and E(p)_{cm} given in comments.

[‡] Resonance energy given by the authors (2016Lo03) but was not observed due to beam intensities and measurement times.

[#] Proposed by 2016Lo03 from expected $l=0$ resonances.