

$^{39}\text{K}(\text{p,d})$  1974Wi17

Type	Author	History Citation	Literature Cutoff Date
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$J^\pi(^{39}\text{K g.s.})=3/2^+$ .

1974Wi17 (also thesis by 1974RiZQ): E=35 MeV proton beam was produced from the Michigan State University cyclotron. Targets were  $\approx 70 \mu\text{g}/\text{cm}^2$  natural potassium (93% in  $^{39}\text{K}$ ) evaporated onto  $30 \mu\text{g}/\text{cm}^2$  carbon backings. Reaction products were momentum-analyzed with an Engel split-pole magnetic spectrograph (FWHM=10 keV) and detected with a single-wire proportional counter and nuclear emulsions. Measured  $\sigma(\text{E}(\text{d}),\theta)$ . Deduced levels, J,  $\pi$ , L-transfers, spectroscopic factors from DWBA analysis. Comparisons with shell-model calculations.

 $^{38}\text{K}$  Levels

Spectroscopic factor  $\text{C}^2\text{S}$  is defined in the following formula:  $d\sigma/d\Omega(\text{exp})=N\times\text{C}^2\text{S}\times d\sigma/d\Omega(\text{DWBA})/(2j+1)$ , where  $j=1/2$  is for the transferred particle and normalization factor  $N=2.29$ .

E(level)	$L^\dagger$	$\text{C}^2\text{S}^\ddagger$	E(level)	$L^\dagger$	$\text{C}^2\text{S}^\ddagger$	E(level)	$L^\dagger$	$\text{C}^2\text{S}^\ddagger$
0	2	1.75	3859 4	0+2	0.005,0.03	5249 5	0+2	0.16,0.17
130 1	2	0.31	3938 3	1+3	0.01,0.02	5341 5		
459 1	0+2	0.13,0.32	3980 3	0+2	0.14,0.42	5449 4	0+2	0.004,0.15
1699 2	0+2	0.02,0.57	4176 3	0+2	0.02,0.03	5549 6	0+2	0.003,0.03
2404 2	0+2	0.03,1.26	4217 3	(1+3)	0.02,0.01	5626 4	0+2	0.06,0.05
2614 2	3	0.05	4321 4			5680 5	(1+3)	0.003,0.04
2648 2	3	0.08	4338 4			5737 4	0+2	0.009,0.26
2830 2	1+3	0.02,0.01	4405 4			5778 6		
2871 2	1+3	0.01,0.05	4459 4			5809 6	0+2	0.17,0.16
3317 2			4598 3	1+3	0.005,0.04	5856 5	0+2	0.11,0.12
3341 2	0+2	0.01,0.02	4646 4			5891 5	0+2	0.06,0.04
3432 2	0+2	0.43,0.43	4673 3	0+2	0.19,0.25	5944 5	3	0.08
3617 2	3	0.04	4713 4	(0+2)	0.005,0.05	5976 5	0+2	0.001,0.10
3703 4	(0+2)	0.003,0.02	4853 4			5991 5	0+2	0.006,0.01
3819 3	1+3	0.01,0.02	4998 4	0+2	0.005,0.02			
3842 4			5058 4	3	0.03			

$^\dagger$  From comparison of measured  $\sigma(\theta)$  with DWBA analysis with finite range non-local version (FRNL).

$^\ddagger$  Values normalized to 1.75 for ground state; L-1/2 transfer for L=2, L+1/2 for L=1 and L+1/2 for L=3 are assumed. Quoted values are from the DWBA analysis using DFRNL calculations (FRNL with the addition of the density-dependent damping of the free p-n interaction, 1974Wi17). Values from DWBA analyses using FRNL and ADIABATIC calculations are also available in 1974Wi17.