

$^{39}\text{K(d,d')}$ 1972EI06

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 149, 1 (2018)	1-Jan-2018

$J^\pi(^{39}\text{K g.s.})=3/2^+$.

[1972EI06](#): E=12.8 MeV deuteron beam was produced from the tandem accelerator of the Niels Bohr Institute. Target was 0.37 mg/cm² natural metallic potassium on a 40 $\mu\text{g/cm}^2$ carbon backing. Scattered deuterons were momentum-analyzed with a broad-range magnetic spectrograph (FWHM=30 keV) and detected with photographic emulsions. Measured $\sigma(\theta)$, $\theta=20^\circ$ to 145° . Deduced levels, L-transfers, deformation parameters from DWBA analysis.

[1968Le10](#): E=15,17 MeV deuteron beams were produced from the University of Pittsburgh tandem Van de Graaff. Target was a natural potassium metal film. Scattered deuterons were detected with a counter telescope (FWHM=25 keV). Measured $\sigma(\theta)$, $\theta=25^\circ$ to 80° . Deduced levels.

[1962Ha32](#): E=15 MeV beam from University of Pittsburgh cyclotron. Scattered deuterons were momentum-analyzed with a magnetic spectrometer (FWHM=100 keV). Measured $\sigma(\theta)$, $\theta=25^\circ$ to 90° . Deduced levels.

[1973Bu09](#): analyzed data of [1972EI06](#).

All data are from [1972EI06](#), unless otherwise noted.

 $^{39}\text{K Levels}$

E(level)	L	β_L^p [†]	Comments
0			
2526	2	0.105 7	β_2 : for real coupling; complex coupling gives 0.067 7, but poor fit (1972EI06).
2817	3	0.085 5	
3021	3	0.108 5	
3603	3	0.170 6	
3879	3	0.125 7	
3935	5	0.086 6	
4085	(3)	0.057 5	E(level): doublet of 4078+4092 in 1972EI06 , partially resolved in 1968Le10 .
4122	3	0.129 6	
4470 [‡]			
4511	3	0.080 6	
4680 [‡]			
4740 [‡]			
5168	3	0.075 6	
5280 [‡]			

[†] Partial deformation parameter defined as, $\beta_L^p = [(2J_f+1)/(2L+1)(2J_i+1)]^{1/2} \beta_L$, computed for complex coupling, except for 2530 level where real part of coupling is used. Only the magnitude of deformation parameter given.

[‡] Weak group from figure 1 of [1972EI06](#).