^{49}Ti(d,t) 1973Ja18

Type	Author	History Citation	Literature Cutoff Date
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$J^{\pi}(^{49}\text{Ti g.s.})=7/2^{-}$.

1973Ja18: E=18 MeV deuteron beam was produced from the University of Rochester Tandem Van de Graaff accelerator. Target was ≈90 μg/cm^2 titanium oxide (76.14% in ^{49}Ti) on a 20 μg/cm^2 carbon foil. Reaction products were momentum-analyzed with an split-pole magnetic spectrograph (FWHM=9-10 keV) and detected with nuclear emulsions. Measured $\sigma(\theta=7.5^{\circ}$ to $45^{\circ})$. Deduced levels, L-transfers, spectroscopic factors from DWBA analysis. 1973Ja18 also report data from ^{48}Ti(α,α').

^{48}Ti Levels

Spectroscopic factor S in this dataset is defined by $C^2S=\sigma(\text{exp})/\sigma(\text{DWBA})$.

E(level)[†]	L[‡]	S[‡]	Comments
0.0	3	0.28 *11*	
987	3	1.11 *5*	
2295	1+3	0.02+0.63	S: ΔS=0.005 (L=1), 0.03 (L=3).
2421	1+3	0.01+0.18	S: ΔS=0.0025 (L=1), 0.01 (L=3).
2998	3	0.020 *5*	
3224	1+3	0.02+0.07	S: ΔS=0.005 (L=1), 0.02 (L=3).
3240	3(+1)	1.10(+0.01)	S: ΔS=0.04 (L=3).
3333	3	2.18 *5*	
3359	0	0.13 *1*	
3371	3(+1)	0.37(+0.01)	S: ΔS=0.02 (L=3).
3509	3	1.05 *3*	
3617	3(+1)	0.01(+0.002)	S: ΔS=0.025 (L=3).
3739	3	0.020 *5*	
3783	0	0.010 *3*	
3855	0	0.010 *3*	
4041[#]	(3)[#]	(0.08)[#]	
4072[#]	(1,3)[#]	(0.1,0.5)[#]	
4383	1+3	0.06+0.06	
4402	(1+3)	(0.01+0.08)	S: ΔS=0.01 (L=3).
4459	(1+3)	(0.002+0.01)	
4567	(2)	(0.05) *1*	
4582	0	0.22 *2*	
4721	(1+3)	(0.004+0.04)	S: ΔS=0.01 (L=3).
4795	0	0.15 *2*	
4886	(1+3)	(0.004+0.04)	S: ΔS=0.01 (L=3).
4917	2	0.74 *4*	
4930	1+3	0.02+0.08	S: ΔS=0.005 (L=1), 0.01 (L=3).
4940	1+3	0.03+0.14	S: ΔS=0.008 (L=1), 0.01 (L=3).
4993	2	0.34 *2*	
5150	1	0.030 *8*	
5158	1	0.030 *8*	
5170	3(+1)	0.23(+0.01)	S: ΔS=0.01 (L=3).
5199	3(+1)	0.03(+0.003)	S: ΔS=0.008 (L=3).
5314	2	0.62 *4*	
5384	2	0.07 *1*	
5461	1+3	0.01+0.03	S: ΔS=0.005 (L=1), 0.008 (L=3).
5523	0	0.08 *1*	
5544	2	0.12 *1*	
5617	0	0.11 *1*	
5640	0+2	0.02+0.13	S: ΔS=0.005 (L=0), 0.02 (L=2).
5801	0+2	0.01+0.07	S: ΔS=0.0025 (L=0), 0.01 (L=2).

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^{49}Ti(d,t) 1973Ja18 (continued)

^{48}Ti Levels (continued)

E(level)[†]	L[‡]	S[‡]	Comments
5822	0+2	0.03+0.16	S: ΔS=0.01 (L=0), 0.02 (L=2).
5886	2	0.13 *2*	
5988	1+3	0.02+0.11	S: ΔS=0.005 (L=1), 0.02 (L=3).
6039	1+3	0.02+0.04	S: ΔS=0.005 (L=1), 0.01 (L=3).
6067	2	0.34 *3*	
6168	0	0.27 *2*	
6248	3(+1)	0.02(+0.004)	S: ΔS=0.005 (L=3).
6327	(0+2)	(0.01+0.04)	
6407	0	0.05 *1*	
6623	(0+2)	(0.01+0.05)	S: ΔS=0.01 (L=2).
6713	(3)	(0.11) *2*	
6797	(0+2)	(0.01+0.06)	S: ΔS=0.01 (L=2).
7042	(0+2)	(0.01+0.10)	S: ΔS=0.02 (L=2).

[†] From 1973Ja18. ΔE is not specified in 1973Ja18 but from proton spectra, resolution, statements in paper and a comparison with Adopted Levels, ±10 keV appears a safe upper limit (5 keV for strongly populated levels).

[‡] From DWBA analysis of measured $\sigma(\theta)$ (1973Ja18). Uncertainty in S is statistical only and S value given in parentheses is upper limit for the corresponding L component.

[#] State was obscured by elastic deuteron scattering at forward angles and strength was based on assumed unmixed L value given (1973Ja18).