^{54}Fe(p,t) 1978De18,1977Su01,1971Vi03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yang Dong, Huo Junde	NDS 128, 185 (2015)	10-Jul-2015

1977Su01: E=51.9 MeV, magnetic spectrograph, ≈80 keV FWHM, measured σ(E(t),θ).
1978De18: E=45 MeV, magnetic spectrograph, ≈15 keV FWHM, measured σ(E(t),θ).
1971Vi03: E=40 MeV, ΔE-E silicon counter telescope, ≈100 keV FWHM, measured σ(θ).
Others: 1978Ko27, 1978ShZK, 1979Sh09, 1981Ku11.

^{52}Fe Levels

E(level)[†]	L[&]	$(\sigma/2\pi)(\mu b)$[a]	Comments
0	0	13.4	
850 *5*	2	6.0	
2385 *5*	4	1.5	
2762 *5*	(2)	0.27	
3583 *5*	4	1.3	L: from 1978De18 and 1977Su01. 1971Vi03 assigned L=2.
4142 *10*	0	0.57	
4326 *8*		0.55	
4400 *5*	3	6.7	L: from 1978De18 and 1977Su01. 1971Vi03 assigned L=4.
4456 *8*	2	0.44	
4869 *15*	(5,6)	0.44	L: 1971Vi03 assigned L=(5), 1977Su01 assigned L=(5,6).
4896 *15*		0.11	
5134 *8*	5	2.7	L: from 1978De18. 1971Vi03 assigned L=(3).
5328 *8*	4	0.92	
5363 *5*	0	3.1	
5439 *15*		0.32	
5483 *20*	4	0.11	
5529 *20*	4	0.10	
5563 *8*	(3)	0.25	
5652 *8*	6	1.6	T=1 (1978De18) Identified as IAS (^{52}Mn g.s.), see 1978De18, 1977Su01, 1971Vi03.
5718 *8*	0	0.66	
5792 *10*		0.48	
5829 *5*	2	0.88	
5965 *15*	4	0.26	
6034[@] *5*	2	3.9	T=1 (1978De18)
6044[@] *5*	2	2.6	T=1 (1978De18)
6174 *15*	(6)	0.23	
6231 *15*		0.15	
6416 *5*	4	4.7	T=1 (1978De18,1977Su01,1978Ko27) This level appears to correspond to 6390 keV *20* level of 1977Su01 and 6380 keV *30* level of 1971Vi03. 1977Su01 and 1978De18 assigned L=4. 1971Vi03 assigned L=5.
6454 *15*		0.49	
6483 *5*	2	0.85	
6531 *10*		0.27	
6564 *8*		0.39	
6634 *10*	(0)	0.25	
6714 *8*		0.65	L: L=2 for E=6670 (1971Vi03).
6744 *15*			
6772 *8*	2	0.19	
6882 *5*	1	0.25	
6927 *15*	0	2.0	
7013 *5*	3	0.95	
7124 *10*	(4)	0.31	
7261 *15*	(6)	0.32	
7289 *8*		0.61	

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^{54}Fe(p,t) 1978De18,1977Su01,1971Vi03 (continued)

^{52}Fe Levels (continued)

E(level)[†]	L[&]	$(\sigma/2\pi)(\mu b)$[a]	Comments
7338 *10*		0.13	
7463 *8*	2	0.60	
7510 *15*		0.20	
7611 *10*	6	0.84	T=1 (1978De18)
7636 *15*	4	0.73	T=1 (1978De18)
7787 *10*		0.26	
7817 *15*		0.16	
7935 *10*	2	0.60	
8037 *15*	0	0.17	
8067 *8*		0.23	
8097 *10*		0.32	
8122 *15*		0.13	
8146 *10*	3	0.18	
8184 *10*		0.27	
8207 *8*	(3)	0.54	
8240 *10*		0.72	
8327 *10*	(3)	0.64	
8354 *5*	2	1.6	T=(1) (1978De18)
8401 *8*	2	0.55	
8425 *15*		0.25	
8461 *10*			
8511 *8*	4	0.76	
8535 *5*	4	2.7	
8561[‡] *5*	0	7.3	T=2 (1978De18) Identified as IAS (^{52}Cr g.s., ^{52}Mn 2926 level). See 1978De18, 1971Vi03, 1978Ko27.
8618 *8*		0.55	
8661 *15*	(4)	0.27	
8677 *10*		0.34	
8727 *15*			
8748 *10*	4	1.3	T=(1) (1978De18)
8770 *10*	(3)	0.87	
8832 *10*		0.31	
8872 *10*			
8900 *8*	(2)	0.44	
8936 *10*		0.35	
8962[#] *10*	(6)	2.2	T=(1) (1978De18)
8985 *10*			
9044 *15*		0.29	
9059 *15*		0.46	
9213 *8*		0.56	
9279 *8*	4	1.3	
9311 *8*			
9338 *10*		0.76	
9357 *15*			
9458 *10*		0.36	
9497 *8*		0.57	
10006 *5*	(2)	1.4	T=(2) (1978De18) Identified as IAS (^{52}Cr 1434 keV, ^{52}Mn 4390 keV), see 1978De18 and 1971Vi03.
10049 *10*		0.56	
10332 *5*	0	1.5	

[†] From 1978De18, except as noted. Level energies of 1978De18 are systematically ≈25 keV higher than those of 1977Su01.
[‡] Doublet of 0^+ states separated by ≈4 keV (1978De18).

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^{54}Fe(p,t) 1978De18,1977Su01,1971Vi03 (continued)

^{52}Fe Levels (continued)

Level with probable multiplet structure (1978De18).

@ 1971Vi03 and 1977Su01 reported a single state at 6020 keV, which is probably an unresolved combination of these states. 1971Vi03 assigned L=2 to the 6020 level, in agreement with the values quoted here from 1978De18. 1977Su01 assign L=4. L=2 is favored by the evaluators.

& Assignments based on analysis of angular distribution data of 1977Su01 and 1978De18. Both works also include DWBA fits with assumed shell-model configurations.

a From 1978De18.