^{169}Tm(d,p) 1996Ho12,1966Sh03,1966Ry01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. M. Baglin[1], E. A. Mccutchan[2], S. Basunia[1]	NDS 153, 1 (2018)	1-Oct-2018

Target $J^\pi=1/2^+$.

1996Ho12: E=12, 20, 26 MeV; θ(lab)=20°, 25°, 30°, 40°, 45°; magnetic spectrograph; measured E(p), dσ/d$\Omega(\theta)$. Supersedes 1995HoZZ.

1966Sh03: E=12 MeV; measured σ(E(p),θ) in 5° steps from 10° to 45° and 10° steps from 45° to 135°, magnetic spectrograph with nuclear emulsions, FWHM≈12 keV; DWBA analysis.

1966Ry01: E=11, 12 MeV; narrow range magnetic spectrograph, FWHM≈18 keV; measured σ(E(p)), θ=90° for 11 MeV, θ=90, 60° for 12 MeV.

Other: 2017Sa25.

^{170}Tm Levels

E(level)[†]	L[‡]	dσ/dΩ(30°)[#]	Comments
−0.03[&] *18*	1	112 *3*	Ground state. Other E: 2.5 *15* (1966Sh03).
38.8[&] *3*	1	17.1 *15*	Other E: 39.5 *6* (1966Sh03); 38 *3* (1966Ry01).
114.30[&] *19*	3	29.9 *17*	Other E: 115.0 *6* (1966Sh03); 115 *3* (1966Ry01).
149.80[@] *9*	1	71 *3*	Other E: 149.6 *3* (1966Sh03); 153 *3* (1966Ry01).
183.21[&] *15*	3	27.0 *16*	Other E: 183.3 *6* (1966Sh03); 185 *3* (1966Ry01).
204.73[a] *21*		14.0 *12*	Other E: 208.2 *9* (1966Sh03; 45° spectrum only).
219.68[@] *12*		29.6 *20*	Other E: 218.2 *12* (1966Sh03); 226 *6* (1966Ry01).
237.21[@] *16*	1	84 *4*	Other E: 236.6 *3* (1966Sh03); 240 *3* (1966Ry01).
247.0[f] *5*		9.4 *20*	
270.49[a] *12*		219 *13*	Other E: 269.6 *3* (1966Sh03); 274 *4* (1966Ry01).
318.6[&] *5*		3.9 *8*	
327.1[f] *7*			Other E: 329 *5* (1966Ry01).
349.68[@] *20*		55.3 *20*	
358.38[a] *23*		45.0 *23*	Other E: 353 (1966Sh03); 357 *4* (1966Ry01).
381.47[@] *18*		43.6 *21*	Other E: 380 (1966Sh03); 384 *4* (1966Ry01).
409.4[&] *8*		4.0 *10*	
419.2 *5*		8.0 *13*	
426.5[f] *3*		17.0 *15*	Other E: 427 (1966Sh03);
439.8[g] *4*		19.6 *17*	
446.93[b] *17*		29.5 *19*	Other E: 446 (1966Sh03); 443 *5* (1966Ry01).
456.8 *8*		7.8 *11*	
467.1[a] *3*		12.3 *13*	
476.9 *5*		2.6 *7*	
539.83[b] *23*		270 *6*	Other E: 542 (1966Sh03).
545.05 *17*			
550.0[@] *8*		13.9 *13*	
598.8[a] *8*			Other E: 588 (1966Sh03).
616.6[&] *4*		10.8 *14*	Other E: 610 (1966Sh03).
626.8 *8*		8.8 *13*	
649.7[d] *3*		27 *4*	Other E: 650 (1966Sh03).
656.2[b] *6*			
677.6 *6*		7.4 *3*	
693.3[d] *3*		9.6 *14*	Other E: 690 (1966Sh03).
718?			E(level): from 1966Sh03 only, so evaluator does not adopt this level.
749.8[d] *3*		19.2 *14*	Other E: 754 (1966Sh03).

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^{169}Tm(d,p) 1996Ho12,1966Sh03,1966Ry01 (continued)

^{170}Tm Levels (continued)

E(level)[†]	dσ/dΩ(30°)[#]	Comments
790.1[b] *8*	7.3 *10*	Other E: 787 (1966Sh03).
806.5 *20*	2.7 *7*	
835.4[d] *9*	2.1 *8*	Other E: 841 (1966Sh03).
855.1[e] *9*	8.2 *13*	
862.6[c] *4*	23.4 *17*	Other E: 865 (1966Sh03).
908.5[c] *3*	44.7 *21*	Other E: 916 (1966Sh03).
925.2[e] *7*	10.5 *11*	
955.8[b] *13*	2.8 *7*	
977.4[c] *4*	29.6 *17*	Other E: 986 (1966Sh03).
1014.0[e] *10*	2.1 *7*	
1025.0 *10*	2.9 *8*	
1046.5 *9*	6.1 *10*	
1066.8 *4*	13.5 *13*	
1071.5 *10*		Other E: 1069 (1966Sh03).
1111.1 *4*	18.4 *17*	
1131.1[e] *8*	13.5 *18*	
1139.8 *4*	124 *4*	
1149.2 *4*	61 *3*	Other E: 1153 (1966Sh03).
1160.5 *4*	60 *3*	
1176.0 *8*	11.0 *13*	
1192.7 *6*	6.2 *12*	
1213.1 *8*	13.4 *22*	
1219.8 *4*	32.8 *26*	
1245.1 *4*	47.8 *25*	
1258.2 *4*	23.4 *19*	
1269.2 *4*	47.8 *26*	
1277.0 *8*	11.6 *17*	
1295.3 *4*	24.9 *19*	
1326.0 *4*		
1354.3 *4*		
1363.5 *5*		
1394.1 *4*		
1443.7 *11*		
1453.6 *6*		
1460.5 *5*		
1466.3 *5*		
1483.6 *5*		
1491.4 *8*		
1500.7 *10*		

[†] From 1996Ho12. Other data are given in comment on relevant level. (For data from 1966Sh03, ΔE for E≤270 is statistical uncertainty only, and reasonable ΔE for E>350 is 1 to 4 keV. E from 1966Ry01 is quoted relative to E=0 for g.s.).

[‡] From DWBA analysis of $\sigma(\theta)$ (1966Sh03).

[#] dσ/dΩ(30°) in μb/sr for E(d)=20 MeV (1996Ho12). See 1996Ho12 for additional cross section data for E(d)=12 MeV (45°), E(d)=20 MeV (20°, 40°) and E(d)=26 MeV (25°).

[@] Band(A): $K^\pi=0^-$ band. Configuration=(π 1/2[411])-(ν 1/2[521]).

[&] Band(B): $K^\pi=1^-$ g.s. band. Configuration=(π 1/2[411])+(ν 1/2[521]).

[a] Band(C): $K^\pi=2^-$ band. Configuration=(π 1/2[411])-(ν 5/2[512]).

[b] Band(D): $K^\pi=3^-$ band. Configuration=(π 1/2[411])+(ν 5/2[512]).

[c] Band(E): $K^\pi=1^-$ band. Configuration=(π 3/2[411])-(ν 5/2[512]) plus (π 1/2[411])+(ν 1/2[510]) plus ((π 1/2[411])-(ν 5/2[512]))-γ vibration.

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^{169}Tm(d,p) 1996Ho12,1966Sh03,1966Ry01 (continued)

^{170}Tm Levels (continued)

[d] Band(F): $K^{\pi}=1^{-}$ band. Configuration=(π 1/2[411])-(ν 3/2[521]) plus (π 7/2[404])-(ν 5/2[512]) plus (π 3/2[411])-(ν 1/2[521]).

[e] Band(G): $K^{\pi}=2^{-}$ band. Configuration=(π 1/2[411])+(ν 3/2[521]) plus (π 3/2[411])+(ν 1/2[521]) plus ((π 1/2[411])+(ν 1/2[521]))-γ vibration.

[f] Band(H): $K^{\pi}=3^{+}$ band. Configuration=(π 1/2[411])-(ν 7/2[633]).

[g] Band(b): $K^{\pi}=4^{+}$ band. Configuration=(π 1/2[411])+(ν 7/2[633]).

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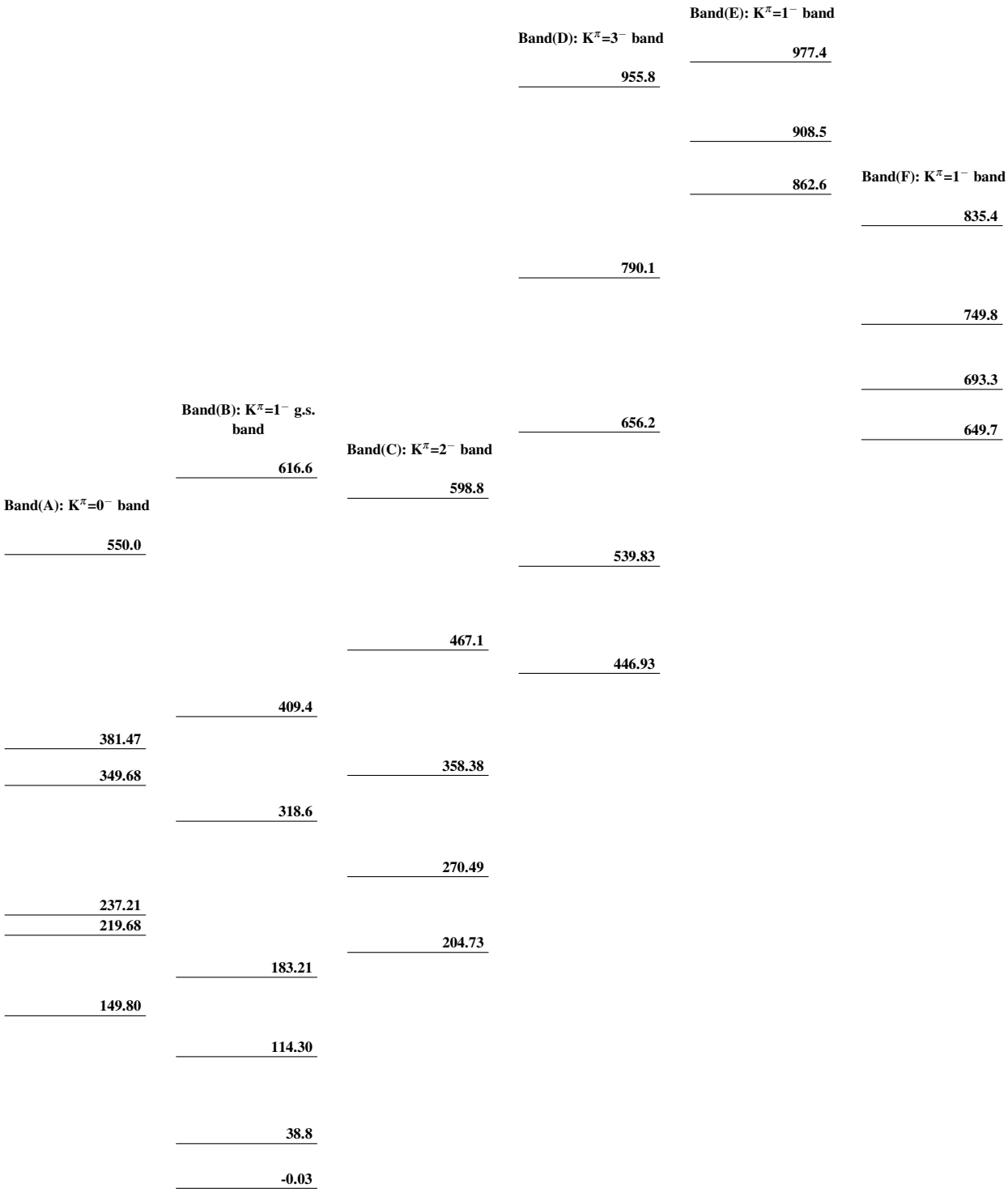

$^{170}_{69}Tm_{101}$

^{169}Tm(d,p) 1996Ho12,1966Sh03,1966Ry01 (continued)

Band(G): $K^{\pi}=2^{-}$ band

1131.1

1014.0

925.2

855.1

Band(H): $K^{\pi}=3^{+}$ band

426.5

327.1

247.0

Band(b): $K^{\pi}=4^{+}$ band

439.8

$^{170}_{69}Tm_{101}$