^{169}Tm(pol t,α), (t,α)　　**1985Bu18**

	Type	Author	History Citation	Literature Cutoff Date
	Full Evaluation	Coral M. Baglin	NDS 111, 1807 (2010)	15-Jun-2010

$J^{\pi}(^{169}$Tm$)=1/2^{+}$.

1985Bu18: E(pol t)=17 MeV (polarization between 0.60 and 0.70); θ=12°, 15°, 20°, 25°, 30°, 35°, 40°, 45°; metallic Tm target; measured Eα (Q3D mag spect, FWHM≈15), differential cross sections, angular distributions, analyzing powers; used Nilsson calculations incorporating effects of pairing and Coriolis mixing to determine specific two-quasiproton structures for several bands; combined results with those from ^{167}Er(d,p), (t,d) to analyze configuration mixing.

1985Bu18 report additional preliminary measurements with unpolarized tritons; E=15, 17 MeV; measured $\sigma(\theta)$ (θ(lab)=10° −25°; 5° steps). see also 1983Da21.

^{168}Er Levels

E(level)[†]	J$^{\pi}$[#]	dσ/dΩ(μb/sr)[‡]	Comments
0.0[&]	0$^+$	5	
80[&] 2	2$^+$	92	
265[&] 2	4$^+$	9	
548.7[@&]	6$^+$	3	
822[a] 5	2$^+$	20	E(level): 822 2 from (t,α) At 15 MeV.
895.8[@a]	3$^+$	44	E(level): 894 2 from (t,α) At 15 MeV.
994[a] 5	4$^+$	9	
1092[b] 5	4$^-$	4	
1191[b] 5	5$^-$	12	
1309[b] 5	6$^-$	31	
≈1490		≈3	
1708		≈2.5	E(level): rounded value from Adopted Levels.
≈1825[c]	0$^+$	7	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet. E≈1819 from 15 MeV data.
≈1895[c]	2$^+$	42	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
≈1895[d]	4$^-$	42	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
1984 5		14	
2001[d] 5	5$^-$	37	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
2030[c] 5		≈4	
2091 5		17	
2120[d] 5		41	
2147 5		8	
2198[e] 5	2$^+$	120	E(level),dσ/dΩ(μb/sr): for unresolved doublet.
2198[g] 5	5$^-$	120	E(level),dσ/dΩ(μb/sr): for unresolved doublet.
≈2256[e]	3$^+$	47	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
2286 5		8.5	
≈2330[g]	6$^-$	120	E(level),dσ/dΩ(μb/sr): for unresolved doublet.
≈2330[e]	4$^+$	120	E(level),dσ/dΩ(μb/sr): for unresolved doublet.
≈2356[f]		≈5	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
≈2394[f]		62	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
≈2428		11	
2456 5		37	
≈2482[f]		30	E(level),dσ/dΩ(μb/sr): probably for an unresolved multiplet.
2540 5		20	
2602 5		8	
2657 5		24	

Continued on next page (footnotes at end of table)

^{169}Tm(pol t,α), (t,α)   1985Bu18 (continued)

^{168}Er Levels (continued)

E(level)†	dσ/dΩ(μb/sr)‡
2790 *5*	16
2875 *5*	25

† from (pol t,α) At E=17 MeV, except where noted; the strongly populated 895.8 level was used for calibration. data from 15 MeV spectrum have uncertainties of 2-5 keV and are consistent with these values. approximately 10 additional peaks with E>2400 are evident In the spectrum In fig. 1 of 1985Bu18, but authors do not give their energies; probably many of these are multiplets.

‡ dσ/dΩ In μb/sr for θ(lab)=30° and E(t)=17 MeV; from fits to $\sigma(\theta)$.

Recommended value from 1985Bu18.

@ Adopted value (rounded); used by authors for calibration.

& Band(A): K$^\pi$=0$^+$ g.s. band.

^{a} Band(B): K$^\pi$=2$^+$ K+2 γ-vibration band. Populated In (t,α) through band′s (π 3/2[411])+(π 1/2[411]) admixture.

^{b} Band(C): K$^\pi$=4$^-$ (ν 7/2[633])+(ν 1/2[521]) band. Populated In (t,α) through (π 7/2[523])+(π 1/2[411]) admixture.

^{c} Band(D): K$^\pi$=0$^+$ (π 1/2[411])-(π 1/2[411]) band.

^{d} Band(E): K$^\pi$=4$^-$ (π 7/2[523])+(π 1/2[411]) band.

^{e} Band(F): K$^\pi$=(2)$^+$ (π [411])+(π 1/2[411]) band.

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

^{g} Band(H): K$^\pi$=3$^-$ (π 7/2[523])-(π 1/2[411]) band.

^{169}**Tm(pol t,α), (t,α)   1985Bu18**

Band(F): $K^{\pi}=(2)^+$ (π [411])+(π 1/2[411]) band

4^+ ≈2330

Band(E): $K^{\pi}=4^-$ (π 7/2[523])+(π 1/2[411]) band

3^+ ≈2256

2^+ 2198

Band(D): $K^{\pi}=0^+$ (π 1/2[411])-(π 1/2[411]) band

2120

2030

5^- 2001

2^+ ≈1895 4^- ≈1895

0^+ ≈1825

Band(C): $K^{\pi}=4^-$ (ν 7/2[633])+(ν 1/2[521]) band

6^- 1309

5^- 1191

Band(B): $K^{\pi}=2^+$ K+2 γ-vibration band

4^- 1092

4^+ 994

3^+ 895.8

2^+ 822

Band(A): $K^{\pi}=0^+$ g.s. band

6^+ 548.7

4^+ 265

2^+ 80

0^+ 0.0

$^{168}_{68}Er_{100}$

^{169}Tm(pol t,α), (t,α)   1985Bu18 (continued)

Band(G): K$^\pi$=(1$^+$) (π 3/2[411])-(π 1/2[411]) band

$\approx$**2482**

$\approx$**2394**

$\approx$**2356**

Band(H): K$^\pi$=3$^-$ (π 7/2[523])-(π 1/2[411]) band

6$^-$ $\approx$**2330**

5$^-$ **2198**

$^{168}_{68}$Er$_{100}$