^{165}Ho(t,α) 1993Fr04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen[#]	NDS 147, 1 (2018)	30-Nov-2017

$J^{\pi}(^{165}\text{Ho g.s.})=7/2^{-}$.

1993Fr04 (also 1989Fr06): E=37.3 MeV. Measured $\sigma(\theta)$. FWHM=18 keV. DWBA calculations.

^{164}Dy Levels

Energy	dσ/dΩ (μb/sr) at 14 ° Cross section	Energy	Cross section
0	< 9	2195	29 8
73	108 15	2241	54 15
243	308 42	2268	42 12
501	308 28	2311	48 10
845	49 8	2381	42 9
979	97 15	2413	166 26
1039	126 19	2465	27 9
1122	86 13	2496	40 8
1222	38 7	2551	163 25
1346	< 5	2604	73 13
1505	< 1	2630	66 12
1587	20 4	2693	86 14
1672	38 7	2799	112 18
1688	10 3	2933	221 32
1807	34 6	3080	210 32
1855	89 14	3250	93 17
1998	240 37	3365	28 6
2032	43 10	3437	42 8
2086	42 11	3461	48 9
2118	131 23		

E(level)	J^{π}[#]	L	σ(exp)/σ(theory).[†]
0[@]	0^+		<3.9[‡]
73[@] *2*	2^+	5	1.64 *14*
243[@] *2*	4^+	5	1.07 *9*
501[@] *1*	6^+	5	1.13 *10*
845[@] *2*	8^+	5	2.94 *31*
979[&] *2*	2^-	2	0.48 *4*
1039[&] *1*	3^-	2	0.47 *4*
1122[&] *1*	4^-	2	0.40 *4*
1222[&] *1*	5^-	2	0.54 *5*
1346[&] *3*	(6^-)		<0.2[‡]
1505[&] *4*	(7^-)		<0.3[‡]
1587[a] *2*	(4^-)	(2)	
1672 *3*		(2)	
1688[a] *3*	(5^-)		
1807 *2*		(2)	
1855 *2*			
1998[b] *4*	5^-	2	0.47 *4*
2032 *4*			
2086 *4*			
2118[b] *4*	6^-	2	0.36 *5*
2195 *4*		(2)	
2241 *4*		(2)	
2268 *5*			
2311 *5*		(2)	
2381 *6*			
2413[c] *5*	(6^-)	(4)	0.29 *3*
2465 *5*			
2496 *5*			
2551[c] *5*	(7^-)	(4)	0.34 *3*
2604 *5*			
2630 *6*			
2693[d] *6*	3^+	(5)	0.77 *6*
2799[d] *6*	4^+	5	0.51 *5*
2933[d] *6*	5^+	5	0.66 *6*
3080[d] *7*	6^+	5	0.82 *7*
3250[d] *7*	7^+	(5)	0.68 *14*
3365 *9*			
3437[d] *9*	8^+	(5)	1.09 *12*
3461 *9*			

Continued on next page (footnotes at end of table)

^{165}Ho(t,α) 1993Fr04 (continued)

^{164}Dy Levels (continued)

† The quoted values, as listed in Table 3 of 1993Fr04, are comparable to the usual spectroscopic factors, and are from averages of σ data at 12°, 14° and 18°, unless otherwise stated.
‡ For 14°.
# From L-transfers and comparison of experimental cross sections with theoretical cross sections (finger-print patterns) within a certain band.
@ Band(A): $K^\pi=0^+$ g.s. band. This band is populated by the pickup of the odd 7/2[523] proton from the ^{165}Ho g.s.
& Band(B): $K^\pi=2^-$ octupole band. From spectroscopic factors, the bandhead contains 47% of configuration=π3/2[411]-π7/2[523].
a Band(C): $K^\pi=(4^-)$ band (?). Configuration=π1/2[411]+π7/2[523] may contribute 20%.
b Band(D): $K^\pi=5^-$ band. Configuration=π3/2[411]+π7/2[523] may contribute 42%.
c Band(E): $K^\pi=6^-$ band. Some contribution from configuration=π5/2[413]+π7/2[523].
d Band(F): $K^\pi=1^+$ band. Significant contribution from configuration=π5/2[532]-π7/2[523].

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

8^+	845
6^+	501
4^+	243
2^+	73
0^+	0

Band(B): $K^\pi=2^-$ octupole band

(7^-)	1505
(6^-)	1346
5^-	1222
4^-	1122
3^-	1039
2^-	979

Band(C): $K^\pi=(4^-)$ band (?)

(5^-)	1688
(4^-)	1587

Band(D): $K^\pi=5^-$ band

6^-	2118
5^-	1998

Band(E): $K^\pi=6^-$ band

(7^-)	2551
(6^-)	2413

Band(F): $K^\pi=1^+$ band

8^+	3437
7^+	3250
6^+	3080
5^+	2933
4^+	2799
3^+	2693

$^{164}_{66}Dy_{98}$