

$^{164}\text{Dy}(\text{p},\text{n}\gamma),(\text{d},2\text{n}\gamma)$ 1978Sc10,1972WaYR

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

1978Sc10: E(p)=9 MeV, E(d)=13.5 MeV. Measured prompt and delayed γ , $\gamma\gamma$, $\gamma(\text{t})$.

1972WaYR: measured E γ , I γ , $\gamma\gamma$ -coin, only a level-scheme drawing is given.

Additional information 1.

Level scheme is from 1972WaYR. It is considered (by evaluators) as tentative and not included in the Adopted dataset, except for the levels shown in the work of 1978Sc10.

 ^{164}Ho Levels

E(level) [†]	J π [‡]	T _{1/2}	Comments
0.0 ^{&}	1 ⁺		
37.3 ^{#&}	2 ⁺		
94.0 ^{#&}	3 ⁺		
139.9 ^{#a}	6 ⁻	36.6 min 3	%IT=100 T _{1/2} : from Adopted Levels.
164.3 ^{&}	4 ⁺		
188.6 ^{#@}	3 ⁺	≤0.5 ns	T _{1/2} : estimated (1978Sc10) from centroid-shift method.
193.3			
203.8 ^{?#a}	7 ⁻		
236.1 [?]			
261.4 ^{&}	5 ⁺		
281.4 ^{?a}	8 ⁻		
297.4 ^{#@}	4 ⁺		
300.3 [?]			
342.7 ^{#b}	5 ⁺	2.6 ns 2	T _{1/2} : $\gamma(\text{t})$ (1978Sc10).
376.4 ^{?&}	6 ⁺		
377.2 ^{?a}	9 ⁻		
429.9 ^{#@}	5 ⁺		
452.5 ^{#b}	6 ⁺		
495.5 ^{?a}	10 ⁻		
578.7 ^b	7 ⁺		
720.6 ^{?b}	8 ⁺		
0+x	(3)		
90.0+x	(4)		
202.8+x	(5)		
336.6+x	(6)		
487.8+x [?]	(7)		

[†] From least-squares fit to E γ data, assuming $\Delta(\text{E}\gamma)=0.5$ keV for each E γ value.

[‡] From 1972WaYR.

[#] Level shown by 1978Sc10 in a partial level scheme.

@ Band(A): $K^\pi=3^+, \pi 7/2[523]\uparrow-1/2[521]\downarrow$.

& Band(B): $K^\pi=1^+, \pi 7/2[523]\uparrow-\nu 5/2[523]\downarrow$.

^a Band(C): $K^\pi=6^-, \pi 7/2[523]\uparrow+\nu 5/2[642]\uparrow$.

^b Band(D): $K^\pi=5^+, \pi 7/2[523]\uparrow+\nu 3/2[521]\uparrow$.

$^{164}\text{Dy}(\text{p},\text{n}\gamma),(\text{d},2\text{n}\gamma)$ **1978Sc10,1972WaYR (continued)** $\gamma(^{164}\text{Ho})$

E_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	Comments
37.3	37.3	2^+	0.0	1^+		
45.9	139.9	6^-	94.0	3^+	E3	Mult.: from Adopted Gammas.
56.7	94.0	3^+	37.3	2^+		
63.9	203.8?	7^-	139.9	6^-		
70.3	164.3	4^+	94.0	3^+		
77.6	281.4?	8^-	203.8?	7^-		
90.0	90.0+x	(4)	0+x	(3)		
94.6	188.6	3^+	94.0	3^+	[M1]	
95.7	377.2?	9^-	281.4?	8^-	[M3]	Mult.: unlikely multipolarity for this γ ray. Either $J^\pi=9^-$ for 377.2 level is incorrect or 95.7 γ is misplaced.
97.0	261.4	5^+	164.3	4^+		
107.0	300.3?		193.3			
108.7	297.4	4^+	188.6	3^+		
109.8	452.5	6^+	342.7	5^+		
112.8	202.8+x	(5)	90.0+x	(4)		
115.0	376.4?	6^+	261.4	5^+		
118.3 [‡]	495.5?	10^-	377.2?	9^-		
126.2	578.7	7^+	452.5	6^+		
132.4	429.9	5^+	297.4	4^+		
133.8	336.6+x	(6)	202.8+x	(5)		
141.5	281.4?	8^-	139.9	6^-		
141.9 [‡]	720.6?	8^+	578.7	7^+		
151.2	487.8+x?	(7)	336.6+x	(6)		
156.0 [‡]	193.3		37.3	2^+		
167.4	261.4	5^+	94.0	3^+		
173.5	377.2?	9^-	203.8?	7^-		
193.3 [‡]	193.3		0.0	1^+		
198.8 [‡]	236.1?		37.3	2^+		
202.8	342.7	5^+	139.9	6^-	[E1]	
^x 208.0 [†]						
241.4	429.9	5^+	188.6	3^+		

[†] Predominant in prompt γ -spectra, but also show weak delayed components with $T_{1/2} \approx 10$ ns.

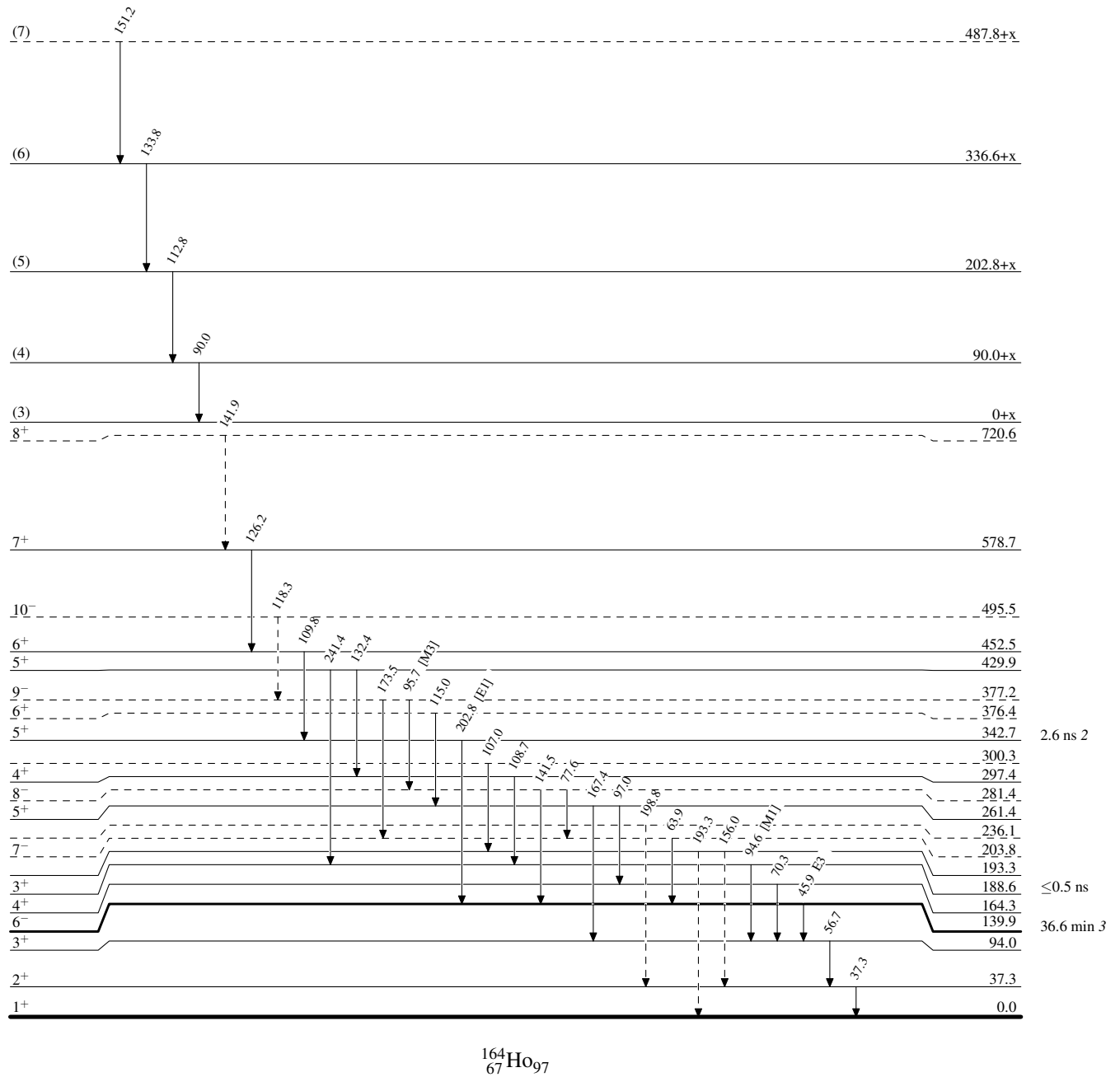
[‡] Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

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Legend

Level Scheme

-----► γ Decay (Uncertain)


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