^{151}Ho ε decay (47.2 s) 1997AlZY

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 110, 1 (2009)	20-Nov-2008

Parent: ^{151}Ho: E=41.0 *2*; J^π=(1/2$^+$); $T_{1/2}$=47.2 s *13*; Q(ε)=5127 *12*; %ε+%$β^+$ decay=23 *18*

^{151}Ho-%ε+%$β^+$ decay: %ε+%$β^+$=20 *+20−15* from %α=80 *+15−20* (see ^{151}Ho 'Adopted Levels').

1997AlZY: ^{151}Ho source produced by ^{97}Mo(^{58}Ni,N3P) reaction at 5 MeV/nucleon followed by on-line mass separation at GSI facility. Measured Eγ, Iγ, γγ, γX coin using Ge detectors and ce using miniorange spectrometer. Full details of this study are not available. the authors state that results are preliminary.

Theory: 2008Al09, calculated log *ft* values.

^{151}Dy Levels

E(level)†	Jπ#	E(level)†	Jπ#	E(level)†	Jπ#	E(level)†	Jπ#
0.0	7/2$^{(-)}$	1143.9 *5*	(3/2)	1780.8 *4*	(3/2$^+$)	2788.1 *6*	(1/2,3/2$^+$)
209.6‡ *2*	(5/2$^-$)	1168.9 *6*	(3/2)	1922.0 *4*	(3/2$^+$)	2789.9 *4*	(1/2,3/2$^+$)
366.0‡ *2*	(3/2$^-$)	1181.8 *4*	(1/2,3/2)	2027.2 *4*	(3/2$^+$)	2811.6 *6*	(3/2$^+$)
880.1 *3*	(3/2,5/2,7/2)	1185.7 *4*	(3/2)	2365.6 *5*	(1/2,3/2$^+$)	2827.9 *4*	(1/2,3/2$^+$)
952.3 *4*	(3/2,5/2,7/2)	1261.5 *3*	(3/2,5/2,7/2)	2376.7 *4*	(3/2$^+$)	2915.5 *6*	(1/2,3/2$^+$)
1046.1 *3*	(5/2,7/2)	1311.0 *6*	(1/2,3/2$^+$)	2377.9 *6*	(1/2,3/2$^+$)	2918.6 *3*	(3/2$^+$)
1081.4 *4*	(3/2)	1450.9? *4*		2572.8 *4*	(3/2$^+$)	2942.1 *6*	(1/2,3/2$^+$)
1130.0 *4*	(3/2)	1551.2 *6*	(1/2,3/2$^+$)	2575.2 *4*	(3/2$^+$)	3031.9 *6*	(1/2,3/2$^+$)

† From least-squares fit to Eγ's, assuming Δ(Eγ)=0.5 keV for each Γ.

‡ Possible member of $f^3_{7/2}$ multiplet.

From 1997AlZY based on their assigned multipolarities for selected transitions and probable ε feedings from (1/2$^+$).

γ(^{151}Dy)

E_i(level)	J^π_i	E_γ	I_γ	E_f	J^π_f	Mult.†	α#	Comments
209.6	(5/2$^-$)	209.6		0.0	7/2$^{(-)}$	(M1+E2)	0.25 *5*	α(K)=0.19 *6*; α(L)=0.043 *7*; α(M)=0.0098 *18*; α(N+..)=0.0026 *5* α(N)=0.0022 *4*; α(O)=0.00030 *3*; α(P)=1.1×10^{-5} *5*
366.0	(3/2$^-$)	156.4	10	209.6	(5/2$^-$)			
		366.0	100	0.0	7/2$^{(-)}$	(E2)	0.0357	α(K)=0.0277 *4*; α(L)=0.00623 *9*; α(M)=0.001422 *20*; α(N+..)=0.000369 *6* α(N)=0.000324 *5*; α(O)=4.35×10^{-5} *6*; α(P)=1.491×10^{-6} *21*
880.1	(3/2,5/2,7/2)	514.2	45	366.0	(3/2$^-$)			
		670.6	100	209.6	(5/2$^-$)			
		880.2	60	0.0	7/2$^{(-)}$			
952.3	(3/2,5/2,7/2)	742.8	47	209.6	(5/2$^-$)			
		952.5	100	0.0	7/2$^{(-)}$			
1046.1	(5/2,7/2)	836.3	12	209.6	(5/2$^-$)			
		1045.9	100	0.0	7/2$^{(-)}$			
1081.4	(3/2)	872.0	100	209.6	(5/2$^-$)			
		1081.3	60	0.0	7/2$^{(-)}$			
1130.0	(3/2)	764.0	75	366.0	(3/2$^-$)			
		920.4	100	209.6	(5/2$^-$)			
		1130.0	38	0.0	7/2$^{(-)}$			
1143.9	(3/2)	263.7		880.1	(3/2,5/2,7/2)			
1168.9	(3/2)	802.9		366.0	(3/2$^-$)			

Continued on next page (footnotes at end of table)

^{151}Ho ε decay (47.2 s) 1997AlZY (continued)

γ(^{151}Dy) (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
1181.8	(1/2,3/2)	972.3	100	209.6	(5/2$^-$)
		1181.8	25	0.0	7/2$^{(-)}$
1185.7	(3/2)	976.0	25	209.6	(5/2$^-$)
		1185.8	100	0.0	7/2$^{(-)}$
1261.5	(3/2,5/2,7/2)	895.3	50	366.0	(3/2$^-$)
		1051.6	60	209.6	(5/2$^-$)
		1261.9	100	0.0	7/2$^{(-)}$
1311.0	(1/2,3/2$^+$)	945.0		366.0	(3/2$^-$)
1450.9?		1450.9[@]		0.0	7/2$^{(-)}$
1551.2	(1/2,3/2$^+$)	1341.6		209.6	(5/2$^-$)
1780.8	(3/2$^+$)	1571.2	100	209.6	(5/2$^-$)
		1780.9	67	0.0	7/2$^{(-)}$
1922.0	(3/2$^+$)	969.4	100	952.3	(3/2,5/2,7/2)
		1712.6	25	209.6	(5/2$^-$)
2027.2	(3/2$^+$)	1817.7	25	209.6	(5/2$^-$)
		2027.2	100	0.0	7/2$^{(-)}$
2365.6	(1/2,3/2$^+$)	1485.9	30	880.1	(3/2,5/2,7/2)
		1999.2[‡]	100	366.0	(3/2$^-$)
2376.7	(3/2$^+$)	1115.2	100	1261.5	(3/2,5/2,7/2)
		2376.7	75	0.0	7/2$^{(-)}$
2377.9	(1/2,3/2$^+$)	2168.3		209.6	(5/2$^-$)
2572.8	(3/2$^+$)	1526.6	50	1046.1	(5/2,7/2)
		2572.9	100	0.0	7/2$^{(-)}$
2575.2	(3/2$^+$)	1528.9	50	1046.1	(5/2,7/2)
		2365.6	100	209.6	(5/2$^-$)
		2575.4	33	0.0	7/2$^{(-)}$
2788.1	(1/2,3/2$^+$)	2578.5		209.6	(5/2$^-$)
2789.9	(1/2,3/2$^+$)	2580.9	100	209.6	(5/2$^-$)
		2789.3	14	0.0	7/2$^{(-)}$
2811.6	(3/2$^+$)	2602.0		209.6	(5/2$^-$)
2827.9	(1/2,3/2$^+$)	1876.0	100	952.3	(3/2,5/2,7/2)
		2617.9	100	209.6	(5/2$^-$)
2915.5	(1/2,3/2$^+$)	2549.4		366.0	(3/2$^-$)
2918.6	(3/2$^+$)	1774.5	44	1143.9	(3/2)
		2552.8	100	366.0	(3/2$^-$)
		2709.1	33	209.6	(5/2$^-$)
		2918.2	22	0.0	7/2$^{(-)}$
2942.1	(1/2,3/2$^+$)	2576.0		366.0	(3/2$^-$)
3031.9	(1/2,3/2$^+$)	2665.8		366.0	(3/2$^-$)

[†] From ce data of 1997AlZY, but no details are available.
[‡] 1990.2 listed in figure 2 of 1997AlZY does not fit between the levels shown. The evaluator considers this value as misprint and adopts 1999.2, instead, which agrees well with the energy difference.
[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[@] Placement of transition in the level scheme is uncertain.

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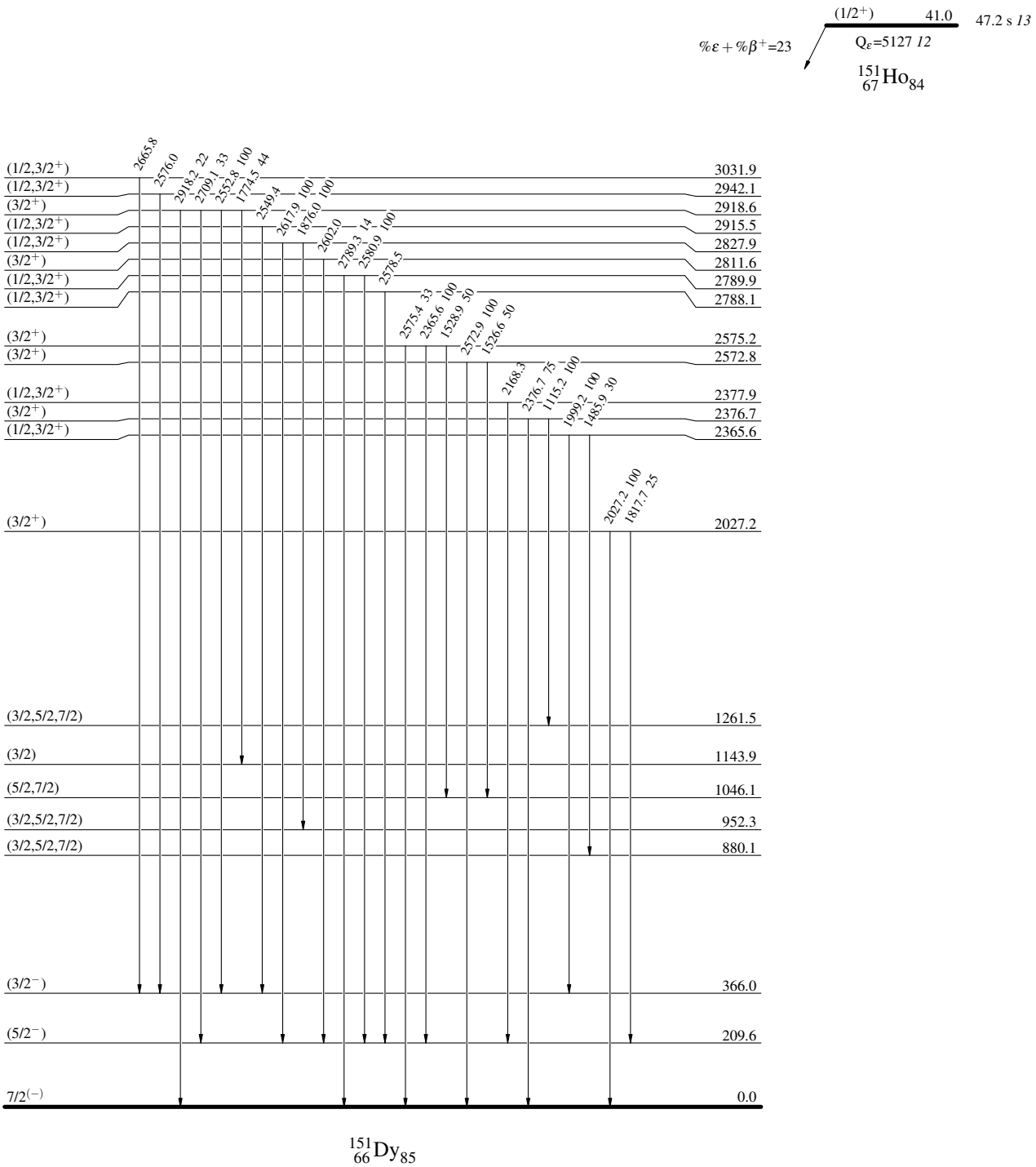
Decay Scheme

Intensities: Relative photon branching from each level



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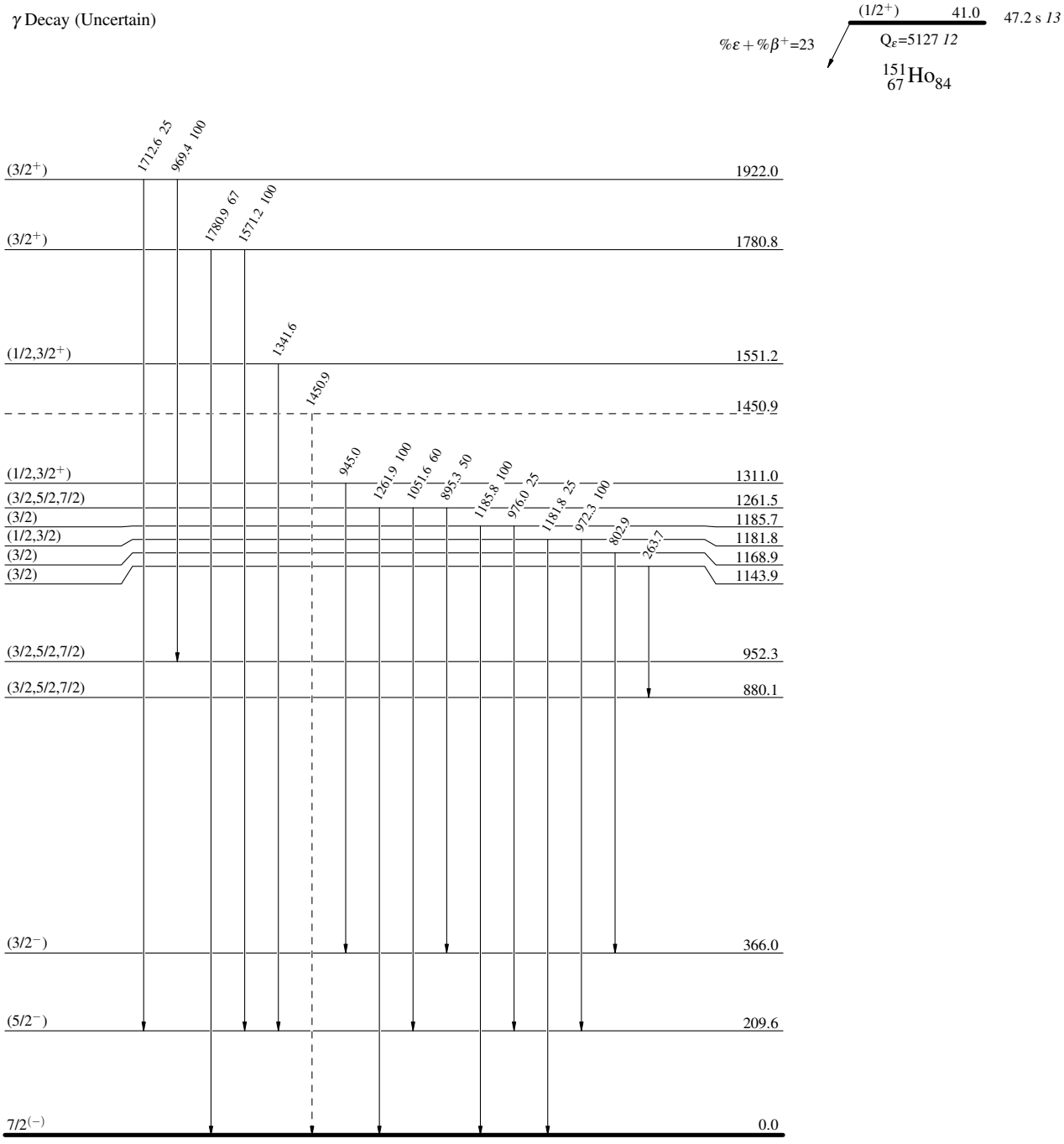
Decay Scheme (continued)

Legend

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

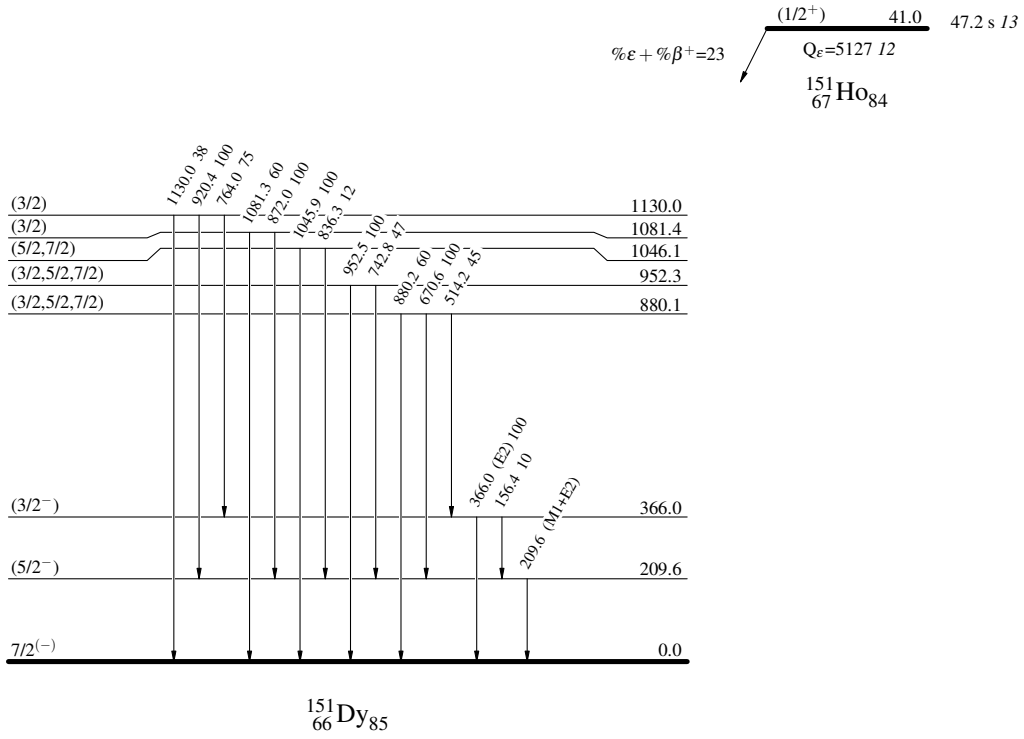


$^{151}_{66}Dy_{85}$

^{151}Ho ε decay (47.2 s) 1997AlZY

Decay Scheme (continued)

Intensities: Relative photon branching from each level



$^{151}_{66}Dy_{85}$