^{145}Dy ε decay (14.1 s) 1982Al07,1982No08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 110, 507 (2009)	1-Oct-2008

Parent: ^{145}Dy: E=118.2 *2*; J^π=(11/2$^-$); $T_{1/2}$=14.1 s *7*; Q(ε)=7.59×10^3 *7*; %ε+%$β^+$ decay=100.0

Measured: γ, K x ray (1982Al07), γ (1982No08).

Decay scheme was proposed by 1993Pe07 on the assumption of similarity with decay schemes of other N=79 nuclei with J^π=11/2: ^{139}Nd, ^{141}Sm, ^{143}Gd. 1993To04 observed 38 transitions in ^{145}Dy decay, of which only 108.1γ decayed with pure 6 s *2* half-life and most of the rest.

decayed wholly or partially with 14 s half-life. 1993To04 stated that their intensities agree with the values given here.

^{145}Tb Levels

E(level)	J^π †	$T_{1/2}$	Comments
(0+x)	(3/2$^+$)		
0+y	(11/2$^-$)	30.9 s *6*	%ε+%$β^+$=100 $T_{1/2}$: From Adopted Levels, Gammas.
578.2+y?	(9/2$^-$)		
639.6+y?	(13/2$^-$)		
804.3+y?	(9/2$^-$,11/2$^-$)		

† From similarity with decay schemes of other J^π=11/2$^-$ N=79 nuclei: ^{139}Nd, ^{141}Sm, ^{143}Gd.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ$^+$ †	Iε†	Log *ft*	I(ε+$β^+$)†	Comments
(3×10^3‡# *4*)	804.3+y?	9 *4*	1.2 *5*	5.7 *2*	10 *4*	av Eβ=2572 *96*; εK=0.100 *10*; εL=0.0146 *15*; εM+=0.0043 *5*
(4×10^3‡# *4*)	639.6+y?	11 *4*	1.3 *5*	5.7 *2*	12 *4*	av Eβ=2650 *96*; εK=0.092 *9*; εL=0.0136 *13*; εM+=0.0040 *4*
(4×10^3‡# *4*)	578.2+y?	12 *4*	1.4 *5*	5.6 *2*	13 *4*	av Eβ=2680 *96*; εK=0.090 *9*; εL=0.0132 *13*; εM+=0.0038 *4*
(4×10^3# *4*)	0+y	59 *7*	5.4 *8*	5.1 *1*	64 *7*	av Eβ=2956 *96*; εK=0.070 *7*; εL=0.0103 *9*; εM+=0.0030 *3*

† Absolute intensity per 100 decays.
‡ Existence of this branch is questionable.
# Estimated for a range of levels.

γ(^{145}Tb)

Iγ normalization: I(639.6γ)=12% 4 (1982No08).

E_γ †	I_γ †‡	E_i(level)	J_i^π	E_f	J_f^π
x39.7					
578.2#	100	578.2+y?	(9/2$^-$)	0+y	(11/2$^-$)
639.6#	93	639.6+y?	(13/2$^-$)	0+y	(11/2$^-$)
804.3#	77	804.3+y?	(9/2$^-$,11/2$^-$)	0+y	(11/2$^-$)

† From 1982Al07.
‡ For absolute intensity per 100 decays, multiply by 0.13 *5*.
# Placement of transition in the level scheme is uncertain.
x γ ray not placed in level scheme.

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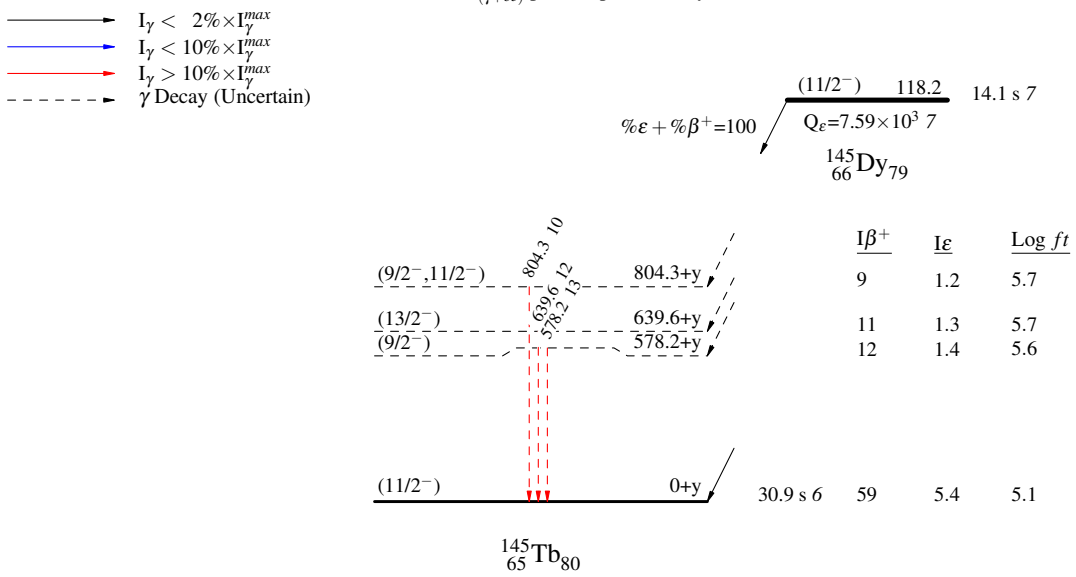
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



	Iβ+	Iε	Log *ft*
(9/2−,11/2−)	9	1.2	5.7
(13/2−)	11	1.3	5.7
(9/2−)	12	1.4	5.6
(11/2−)	59	5.4	5.1