

Adopted Levels, Gammas

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, A. A. Sonzogni		NDS 114, 435 (2013)	1-Apr-2013

Q(β⁻)=-11340 (syst) 196; S(n)=1.216×10⁴ 3; S(p)=3474 21; Q(α)=2299 18 2017Wa10
 Q(ε)=4115 14; S(2n)=22495 3; S(2p)=4550 21; Q(εp)=2576 19 2017Wa10

Additional information 1.

Two isomers are observed in the reaction ¹⁴⁴Sm(¹²C,6nγ) at E=120 MeV which are assigned to ¹⁵⁰Ho and/or ¹⁵⁰Er (1982Mo19).

¹⁵⁰Er Levels

Cross Reference (XREF) Flags

A	¹⁵⁰ Tm ε decay	D	(HI,xnγ)
B	¹⁵¹ Yb εp decay	E	(HI,xnγ): 13-93 ns delayed
C	¹⁵⁴ Yb α decay	F	(HI,xnγ): 2.55 μs delayed

E(level)	J ^π	T _{1/2}	XREF	Comments
0 [†]	0 ⁺	18.5 s 7	ABCDEF	%ε+%β ⁺ =100 T _{1/2} : from 1981NoZY. Other: 20 s 2 (1982No08).
1578.33 [†] 23	2 ⁺		AB F	J ^π : (E2) γ to 0 ⁺ , systematics of first excited state in N=82.
1785.89 [†] 23	3 ⁻		AB F	J ^π : (E3) γ to 0 ⁺ and (E1) γ to 2 ⁺ , systematics of first 3 ⁻ state in N=82.
2260.4 [†] 3	5 ⁻		AB F	J ^π : E2 γ to 3 ⁻ .
2293.9 [†] 3	4 ⁺		AB	J ^π : E2 γ to 2 ⁺ and γ to 3 ⁻ .
2620.8 [†] 3	6 ⁺		AB F	J ^π : E1 γ to 5 ⁻ .
2632.8 [†] 3	7 ⁻		A F	J ^π : (E2) γ to 5 ⁻ , E1 γ from 8 ⁺ .
2733.3 [†] 4	8 ⁺	≈20 ns	A F	T _{1/2} : from (HI,xnγ): 2.55 μs delayed. J ^π : E2 γ from 10 ⁺ .
2796.5 [†] 5	10 ⁺	2.55 μs 10	DEF	J ^π : from systematics and model calculations for (π,h11/2,n)10 ⁺ isomers in neighboring proton-rich nuclei (1981La26). J ^π ,T _{1/2} : from (HI,xnγ): 2.55-μs delayed. J ^π : M1 γ to 5 ⁻ .
2854.6 4	(6 ⁻)		A	
2995.1 4	(5 ⁻)		A	
3187.0 5	(4 ⁻)		A	
3774.2 5	(5 ⁻)		A	
4000.3 5	(11 ⁻)		DE	J ^π : by analogy with ¹⁴⁸ Dy, assumed to be the 11 ⁻ member of a 10 ⁺ coupled to 3 ⁻ multiplet.
4242.9 5	(12 ⁺)		DE	
4437.8 5	(5 ⁻)		A	
4490.3 5	(13 ⁻)		DE	
4884.2 5	(15 ⁻)		DE	
4927.0 5	(14 ⁺)		DE	
5221.8 5	(16 ⁺)		DE	
6358.9 5			DE	
6927.9 6			DE	
7152.9 6			DE	
7332.5 6			DE	
7371.9 6		15 ns 4	DE	T _{1/2} : from (HI,xnγ).
7936.6 6			DE	
8482.9 6			DE	
9148.5 6			DE	
9508.6 7		43 ns 3	DE	T _{1/2} : from (HI,xnγ).

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Adopted Levels, Gammas (continued)

¹⁵⁰Er Levels (continued)

† Band(A): Ground state positive parity cascade.

‡ Band(B): Negative parity cascade.

E _i (level)	J _i ^π	γ(¹⁵⁰ Er)						α [†]	Comments
		E _γ	I _γ	E _f	J _f ^π	Mult.			
1578.33	2 ⁺	1578.3 3	100	0	0 ⁺	(E2)		E _γ : from Tm ε decay.	
1785.89	3 ⁻	207.6 2	100 7	1578.33	2 ⁺	(E1)	0.0472	α(K)=0.0397 6; α(L)=0.00587 9; α(M)=0.001296 19; α(N)=0.000299 5; α(O)=4.15×10 ⁻⁵ 6 α(P)=1.97×10 ⁻⁶ 3; α(N+..)=0.000342 5 E _γ ,I _γ : from (HI,xny): 2.55 μs delayed.	
2260.4	5 ⁻	1785.9 3 474.5 2	5.9 20 100	0	0 ⁺	(E3) E2	0.0188	E _γ ,I _γ : from (HI,xny): 2.55 μs delayed. α(K)=0.01491 21; α(L)=0.00305 5; α(M)=0.000698 10; α(N)=0.0001609 23 α(O)=2.17×10 ⁻⁵ 3; α(P)=8.21×10 ⁻⁷ 12; α(N+..)=0.000183 3 E _γ : weighted average of 474.4 3 (¹⁵⁰ Tm ε decay), 474.5 2 ((HI,xny): 2.55 μs delayed).	
2293.9	4 ⁺	508.3 5 715.4 3	1.0×10 ² 5 72 10	1785.89	3 ⁻	E2	0.00692	E _γ ,I _γ : from ¹⁵⁰ Tm ε decay. α(K)=0.00569 8; α(L)=0.000961 14; α(M)=0.000216 3; α(N)=5.01×10 ⁻⁵ 7; α(O)=6.97×10 ⁻⁶ 10 α(P)=3.22×10 ⁻⁷ 5; α(N+..)=5.73×10 ⁻⁵ 8 E _γ : observed only in ¹⁵¹ Yb εp decay.	
2620.8	6 ⁺	360.40 14	100	2260.4	5 ⁻	E1	0.01187	α(K)exp=0.010 7 α(K)=0.01004 15; α(L)=0.001432 21; α(M)=0.000315 5; α(N)=7.30×10 ⁻⁵ 11 α(O)=1.032×10 ⁻⁵ 15; α(P)=5.26×10 ⁻⁷ 8; α(N+..)=8.39×10 ⁻⁵ 12 E _γ : weighted average of 360.4 2 (¹⁵⁰ Tm ε decay), 360.4 2 ((HI,xny): 2.55 μs delayed).	
2632.8	7 ⁻	372.4 2	100	2260.4	5 ⁻	E2	0.0366	α(K)=0.0279 4; α(L)=0.00667 10; α(M)=0.001544 22; α(N)=0.000355 5; α(O)=4.66×10 ⁻⁵ 7 α(P)=1.492×10 ⁻⁶ 21; α(N+..)=0.000403 6 E _γ : weighted average of 372.4 2 (¹⁵⁰ Tm ε decay), 372.4 2 ((HI,xny): 2.55 μs delayed).	
2733.3	8 ⁺	100.52 9	49 9	2632.8	7 ⁻	E1	0.321 6	α(K)=0.267 5; α(L)=0.0425 7; α(M)=0.00943 16; α(N)=0.00216 4; α(O)=0.000289 5 α(P)=1.202×10 ⁻⁵ 19; α(N+..)=0.00246 4 E _γ : weighted average of 100.7 3 (¹⁵⁰ Tm ε decay), 100.5 1 ((HI,xny): 2.55 μs delayed).	
		112.6 3	100 11	2620.8	6 ⁺	[E2]	1.89 4	α(K)=0.804 13; α(L)=0.831 16; α(M)=0.201 4; α(N)=0.0456 9; α(O)=0.00539 10 α(P)=3.36×10 ⁻⁵ 6; α(N+..)=0.0511 10 E _γ : observed only in (HI,xny): 2.55 μs delayed.	
2796.5	10 ⁺	63.2 3	100	2733.3	8 ⁺	E2	18.3 5	α(K)=2.05 3; α(L)=12.5 4; α(M)=3.04 9; α(N)=0.685 19; α(O)=0.0792 22 α(P)=0.0001209 21; α(N+..)=0.765 21 B(E2)(W.u.)=0.24 3	
2854.6	(6 ⁻)	594.2 2	100	2260.4	5 ⁻	M1	0.0225	α(K)=0.0190 3; α(L)=0.00273 4; α(M)=0.000602 9; α(N)=0.0001405 20;	

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Adopted Levels, Gammas (continued)

$\gamma(^{150}\text{Er})$ (continued)								
$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α^\dagger	Comments
2995.1	(5 ⁻)	734.7 2	100	2260.4	5 ⁻	M1	0.01318	$\alpha(\text{O})=2.04\times 10^{-5}$ 3 $\alpha(\text{P})=1.143\times 10^{-6}$ 16; $\alpha(\text{N+..})=0.0001620$ 23 $\alpha(\text{K})=0.01114$ 16; $\alpha(\text{L})=0.001590$ 23; $\alpha(\text{M})=0.000351$ 5; $\alpha(\text{N})=8.18\times 10^{-5}$ 12 $\alpha(\text{O})=1.188\times 10^{-5}$ 17; $\alpha(\text{P})=6.69\times 10^{-7}$ 10; $\alpha(\text{N+..})=9.44\times 10^{-5}$ 14
3187.0	(4 ⁻)	1401.1 5	100	1785.89	3 ⁻			
3774.2	(5 ⁻)	1513.8 4	100	2260.4	5 ⁻			
4000.3	(11 ⁻)	1203.7 1	100	2796.5	10 ⁺			
4242.9	(12 ⁺)	1446.4 2	100	2796.5	10 ⁺			
4437.8	(5 ⁻)	2177.4 4	100	2260.4	5 ⁻			
4490.3	(13 ⁻)	247.4 2	33.0 23	4242.9	(12 ⁺)			
		490.0 1	100 6	4000.3	(11 ⁻)			
4884.2	(15 ⁻)	393.9 1	100	4490.3	(13 ⁻)			
4927.0	(14 ⁺)	684.1 2	100	4242.9	(12 ⁺)			
5221.8	(16 ⁺)	294.8 2	21.0 25	4927.0	(14 ⁺)			
		337.6 2	100 5	4884.2	(15 ⁻)			
6358.9		1137.1 2	100 8	5221.8	(16 ⁺)			
		1474.6 4	33 6	4884.2	(15 ⁻)			
6927.9		569.0 2	100	6358.9				
7152.9		1931.2 4	100	5221.8	(16 ⁺)			
7332.5		404.5 2	100 12	6927.9				
		973.7 4	24 12	6358.9				
7371.9		39.4 4	40 8	7332.5		E1	0.742 24	$\alpha(\text{L})=0.579$ 19; $\alpha(\text{M})=0.130$ 5; $\alpha(\text{N})=0.0291$ 10; $\alpha(\text{O})=0.00356$ 11; $\alpha(\text{P})=0.000113$ 4 $\alpha(\text{N+..})=0.0328$ 11 $\text{B}(\text{E1})(\text{W.u.})=5.7\times 10^{-5}$
		219.0 2	13.3 17	7152.9				
		1013.1 3	100 7	6358.9				
7936.6		564.7 2	100	7371.9				
8482.9		546.3 2	100	7936.6				
9148.5		665.6 2	100 8	8482.9				
		1211.8 4	4 4	7936.6				
9508.6		360.1 2	100	9148.5				

[†] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ -ray energies, assigned multiplicities, and mixing ratios, unless otherwise specified.

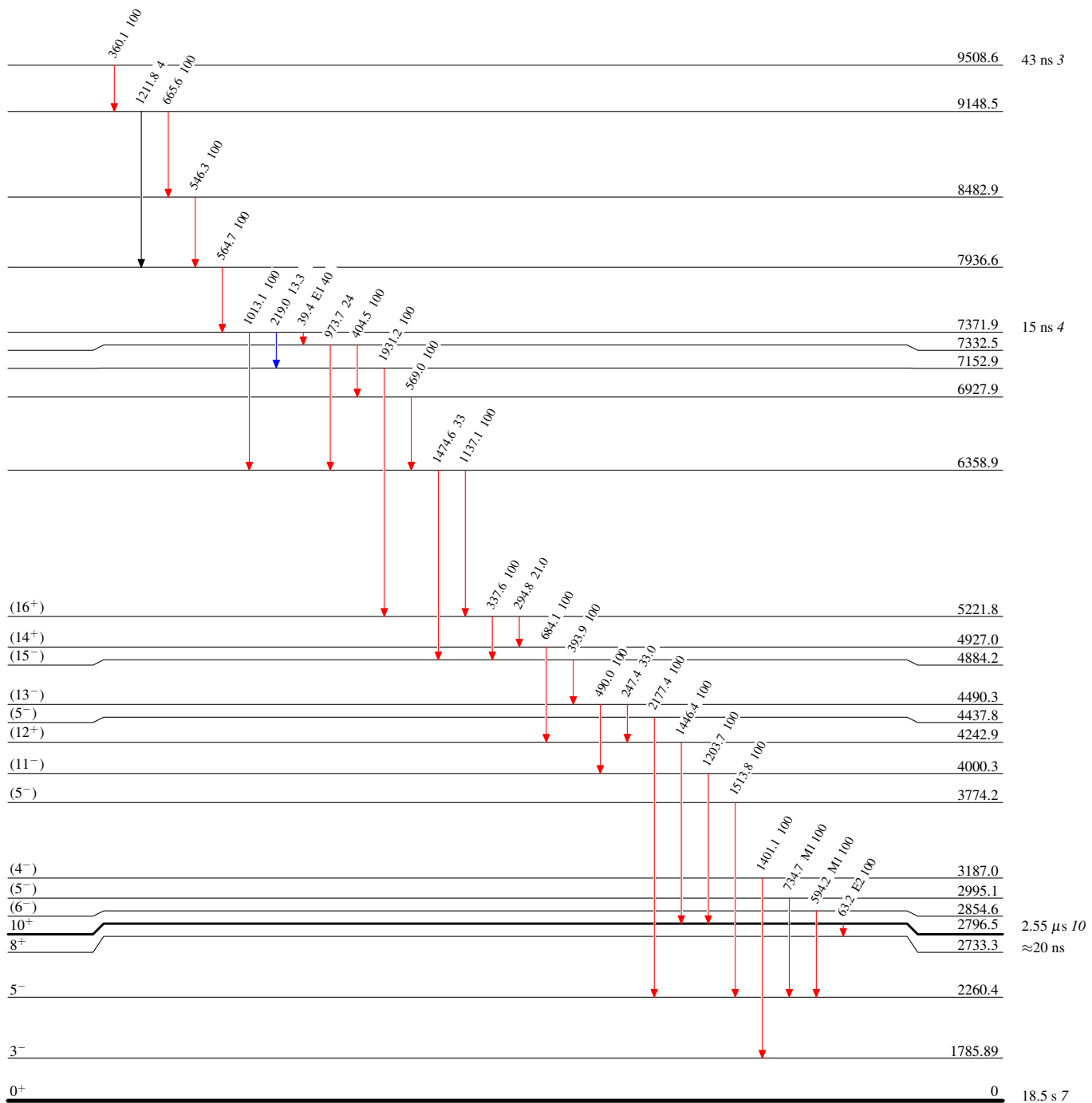
Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$






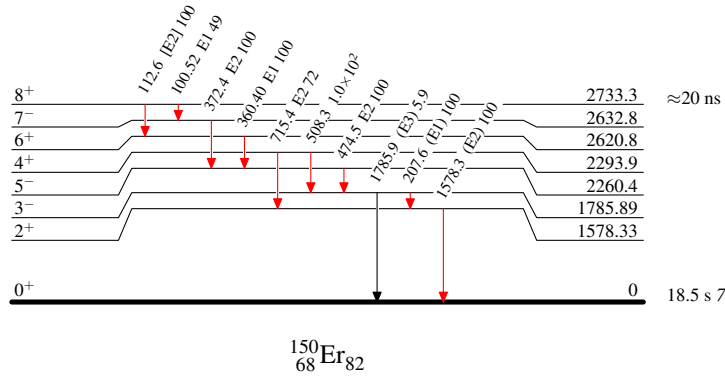
$^{150}_{68}\text{Er}_{82}$

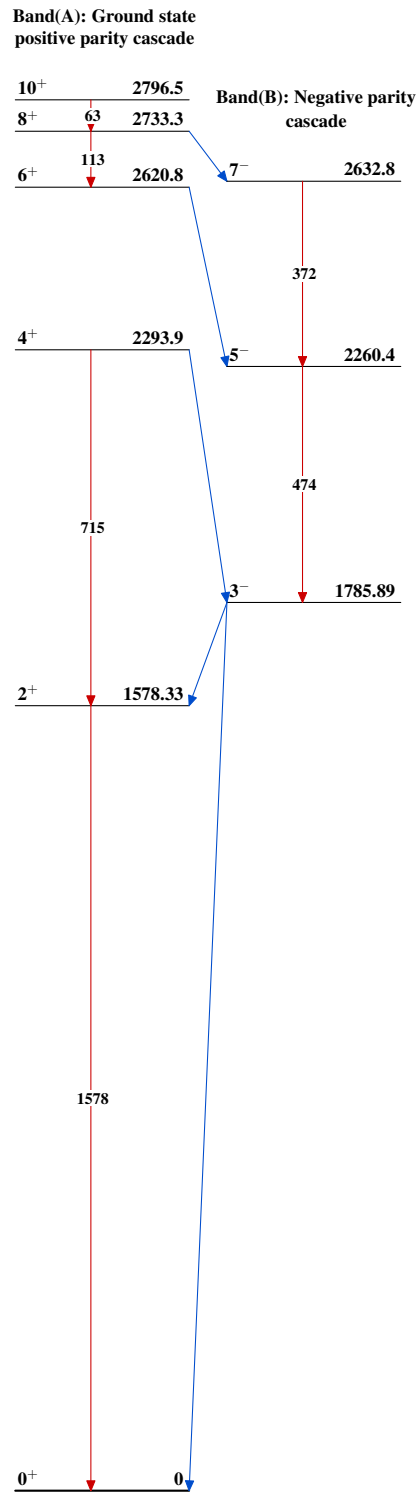
Adopted Levels, Gammas**Level Scheme (continued)**

Intensities: Type not specified

Legend

-  $I_\gamma < 2\% \times I_\gamma^{\max}$
-  $I_\gamma < 10\% \times I_\gamma^{\max}$
-  $I_\gamma > 10\% \times I_\gamma^{\max}$



Adopted Levels, Gammas $^{150}_{68}\text{Er}_{82}$