Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. Morse	NDS 189,111 (2023)	23-Sep-2022

Q(β^-)=−3008 *24*; S(n)=6185 *16*; S(p)=4555 *syst*; Q(α)=7424.5 *10* 2021Wa16
ΔS(p)=101 (2021Wa16).
S(2n)=13703 *16*, S(2p)=8342 *14* (2021Wa16).
Unless otherwise noted, all data are from ^{255}No α decay. Spins, parities, and configurations of levels are those assigned in 2011As03, primarily based on α-decay hindrance factors and γ-ray decay patterns.
Mass measurement: 2018It04.

^{251}Fm Levels

Cross Reference (XREF) Flags

A ^{255}No α decay

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0[†]	(9/2$^-$)	5.30 h *8*	A	%α=1.80 *13* configuration=ν9/2$^-$[734] (2011As03) %α: From 1978Ah02, with the remaining decay mode being electron capture. Note that 1973Ah02 gives %α=1.9 *2*. The evaluator has assumed that the more recent value supersedes the former value from the same authors. T$_{1/2}$: From 1973Ah02. Others: ≈7 h (1957Am47,1967Ch17). J$^\pi$: Favored α decay to (9/2$^-$) state in ^{247}Cf (1973Ah02).
63.9[†] *8*	(11/2$^-$)		A	J$^\pi$: M1 to (9/2$^-$) ground state; band assignment.
200.07[‡] *10*	(5/2$^+$)	22.9 μs *9*	A	configuration=ν5/2$^+$[622] (2011As03) J$^\pi$: M2 γ to ground state allows either 5/2$^+$ or 13/2$^+$, but the latter is excluded due to non-existence of fast E1 decay to 11/2$^-$ level.
243[‡] *3*	(7/2$^+$)		A	
301[‡] *3*	(9/2$^+$)		A	
353.8 *3*	(7/2$^+$)		A	configuration=7/2$^+$[624] (2011As03)
391.97[#] *16*	(1/2$^+$)	22 ns *3*	A	configuration=ν1/2$^+$[631] (2011As03) J$^\pi$: Inferred by presence of E2 γ to (5/2$^+$) state but lack of transitions to (7/2$^+$) and (9/2$^+$) states.
395.27[#] *22*	(3/2$^+$)	<16 ns	A	J$^\pi$: Band member.
461[#] *3*	(5/2$^+$)		A	J$^\pi$: Band member.
558.57[@] *17*	(1/2$^+$)	<8 ns	A	configuration=ν1/2$^+$[620] (2011As03) J$^\pi$: M1 decays to (1/2$^+$) and (3/2$^+$) levels, combined with favored α decay to this level from the 1/2$^+$[620] configuration in ^{255}No.
579[@] *5*	(3/2$^+$)		A	J$^\pi$: Band member.
604[@] *4*	(5/2$^+$)		A	J$^\pi$: Band member.

[†] Band(A): ν9/2$^-$[734].
[‡] Band(B): ν5/2$^+$[622].
[#] Band(C): ν1/2$^+$[631].
[@] Band(D): ν1/2$^+$[620].

Adopted Levels, Gammas (continued)

γ(^{251}Fm)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.[†]	δ[†]	α[‡]	Comments
63.9	(11/2$^-$)	63.9 *8*	100	0	(9/2$^-$)	M1		38.7 *16*	α(L)=28.9 *12*; α(M)=7.2 *3*; α(N)=2.00 *8*; α(O)=0.528 *22*; α(P)=0.103 *5*; α(Q)=0.00579 *24*
200.07	(5/2$^+$)	200.07 *10*	100	0	(9/2$^-$)	M2+E3	0.76 *+20−19*	20.9 *10*	α(K)=9.3 *18*; α(L)=8.3 *6*; α(M)=2.41 *19*; α(N)=0.69 *6*; α(O)=0.179 *14*; α(P)=0.0315 *19* α(Q)=0.00095 *13* B(E3)(W.u.)=19 *7*; B(M2)(W.u.)=0.0031 *7*
353.8	(7/2$^+$)	353.8 *3*	100	0	(9/2$^-$)	(E1)		0.0342	α(K)=0.0266 *4*; α(L)=0.00567 *8*; α(M)=0.001391 *20*; α(N)=0.000386 *6*; α(O)=0.0001003 *15* α(P)=1.84×10^{-5} *3*; α(Q)=8.24×10^{-7} *12*
391.97	(1/2$^+$)	191.95 *14*	100	200.07	(5/2$^+$)	E2		1.567	α(K)=0.1385 *20*; α(L)=1.027 *15*; α(M)=0.293 *5*; α(N)=0.0833 *12*; α(O)=0.0211 *3* α(P)=0.00346 *5*; α(Q)=2.49×10^{-5} *4* B(E2)(W.u.)=0.41 *6*
395.27	(3/2$^+$)	(3.4)		391.97	(1/2$^+$)	[M1]		1.599×10^4	α(N)=1.211×10^4 *17*; α(O)=3.22×10^3 *5*; α(P)=625 *9*; α(Q)=35.5 *5*
		195.2 *3*	100	200.07	(5/2$^+$)	M1		6.83	α(K)=5.29 *8*; α(L)=1.152 *17*; α(M)=0.284 *5*; α(N)=0.0794 *12*; α(O)=0.0210 *3* α(P)=0.00407 *6*; α(Q)=0.000228 *4* B(M1)(W.u.)>2.4×10^{-5}
558.57	(1/2$^+$)	163.3 *2*	35 *9*	395.27	(3/2$^+$)	M1		11.30	α(K)=8.74 *13*; α(L)=1.91 *3*; α(M)=0.473 *7*; α(N)=0.1320 *19*; α(O)=0.0349 *5* α(P)=0.00677 *10*; α(Q)=0.000379 *6* B(M1)(W.u.)>3.0×10^{-5}
		166.7 *2*	16 *6*	391.97	(1/2$^+$)	M1		10.66	α(K)=8.25 *12*; α(L)=1.80 *3*; α(M)=0.446 *7*; α(N)=0.1245 *18*; α(O)=0.0329 *5* α(P)=0.00638 *10*; α(Q)=0.000357 *6* B(M1)(W.u.)>1.3×10^{-5}
		358.4 *2*	100	200.07	(5/2$^+$)	E2		0.181	α(K)=0.0651 *10*; α(L)=0.0843 *12*; α(M)=0.0235 *4*; α(N)=0.00664 *10*; α(O)=0.001698 *24*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{251}Fm)$ (continued)

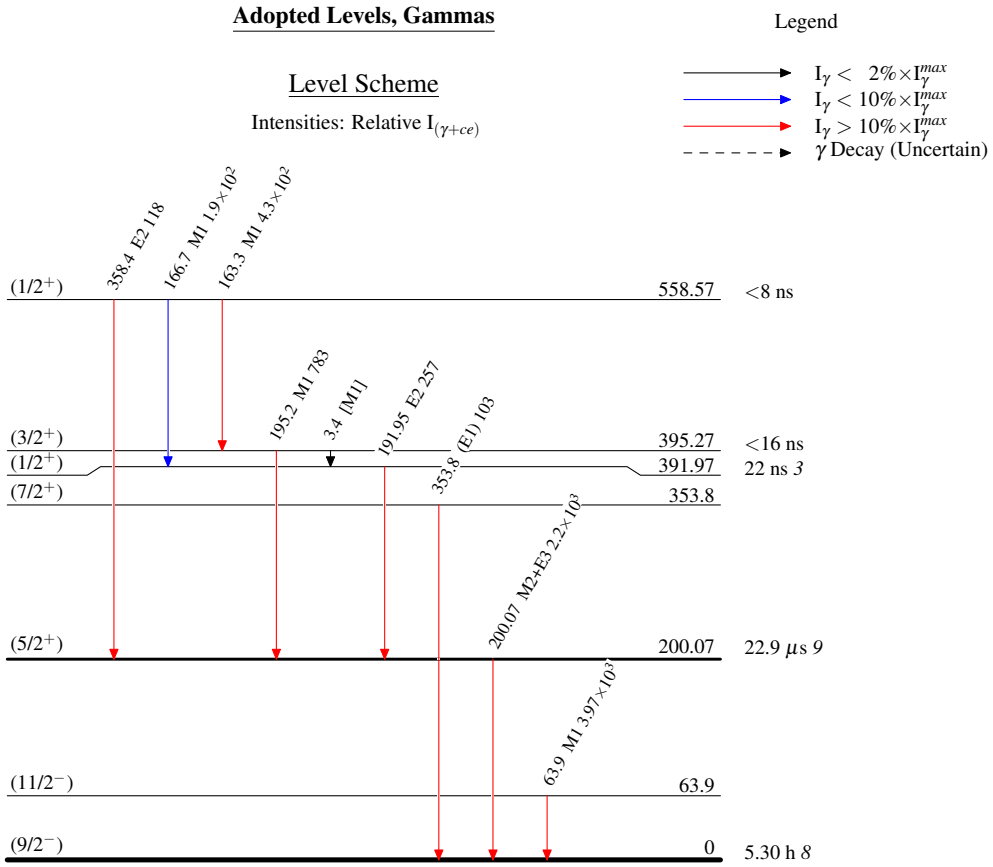
E_i(level)	E_γ	Comments
		α(P)=0.000290 *4*; α(Q)=4.57×10^{-6} *7* B(E2)(W.u.)>0.017

† From ^{255}No α decay.
‡ Additional information 1.

Adopted Levels, Gammas

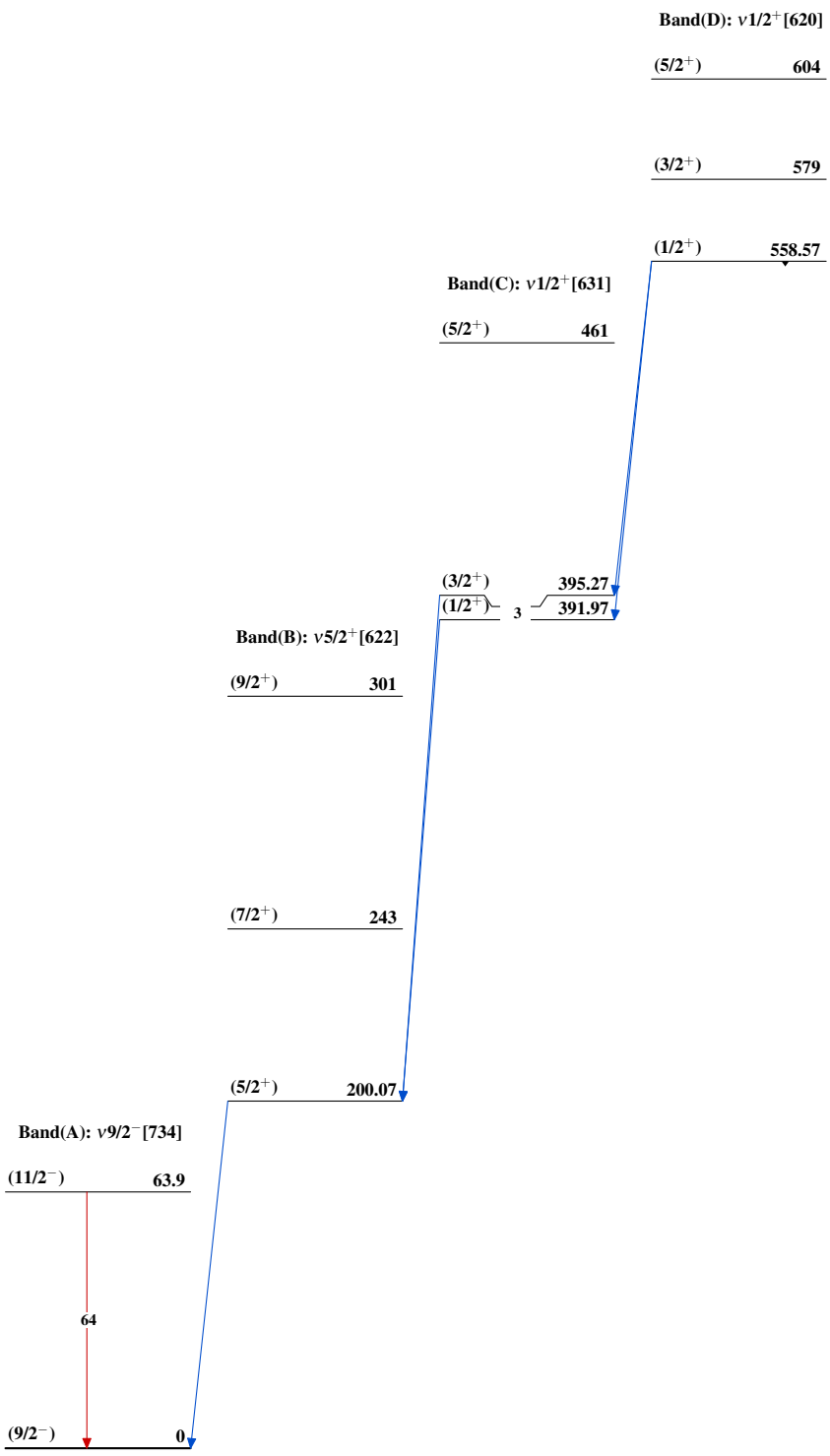
Level Scheme

Intensities: Relative $I_{(\gamma+ce)}$



$^{251}_{100}Fm_{151}$

Adopted Levels, Gammas



$^{251}_{100}Fm_{151}$