^{152}Pm β^- decay (4.12 min) 1992Ma42

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. J. Martin	NDS 114, 1497 (2013)	31-Aug-2013

Parent: ^{152}Pm: E=0.0; J$^\pi$=1$^+$; T$_{1/2}$=4.12 min *8*; Q(β^-)=3508 *26*; %β^- decay=100.0

^{152}Sm Levels

1992Ma42: measured Eγ, Iγ, $\gamma\gamma$, $\beta\gamma\gamma$(t) (also reported in 1993MaZK).
1991He03: measured $\beta\gamma\gamma$(t).
1977Ya07: measured Eγ, Iγ, Eβ^-, $\gamma\gamma$.
1975Wi08: measured Eγ, Iγ, Eβ^-, Iβ^-, $\gamma\gamma$, $\beta\gamma$.
1972Wa04: measured Eγ, Iγ, Eβ^-, Iβ^-, $\beta\beta$.
1971Da19: measured Eγ, Iγ, Eβ.
Other: 1969Wa25.
The adopted decay scheme is the revised scheme proposed by 1992Ma42.

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	Comments
0.0[&]	0$^+$		
121.85[&] *9*	2$^+$	1.47 ns *4*	T$_{1/2}$: From 1991He03. The adopted value is 1.403 ns *11*.
366.58[&] *13*	4$^+$		
684.83[a] *21*	0$^+$		
810.30[a] *15*	2$^+$		
963.25 *13*	1$^-$		
1040.91 *17*	3$^-$	<16 ps	T$_{1/2}$: The adopted value is 27 fs *5*.
1082.77[b] *15*	0$^+$	15 ps *6*	
1086.5 *4*	2$^+$		
1234.1 *4*	3$^+$		
1292.55[b] *19*	2$^+$	<16 ps	
1511.06 *24*	1$^-$		
1530.0 *4*	2$^-$		
1650.6 *7*	2$^-$		
1658.7[c] *3*	0$^+$	8 ps *5*	
1680.5 *4*	1$^-$		
1768.6[c] *4*	2$^+$		
1776.08 *25*	(2$^+$)	<15 ps	
1892.4 *5*	0$^+$,1,2		
1944.1 *5*			E(level): See comment on the γ's from this level.
1944.2 *3*	1$^-$,2		E(level): See comment on the γ's from this level.
1965.1 *10*	1,2$^+$		
2042.8 *3*	0$^+$,1,2		
2090.8[@] *4*	1$^-$,2		
2092.7[@] *9*			
2127.6 *3*	0$^+$,1,2		
2167.1 *6*	0$^+$,1,2		
2172.8 *4*	1,2$^+$		
2175.8 *10*	0$^+$ to 3$^-$		
2201.2 *4*	0$^+$,1,2		
2224.8 *5*	1,2$^+$		
2237.4 *5*	1,2		
2239.8 *3*	2$^+$		
2284.85 *24*	0,1,2		
2287.5 *10*	0$^+$ to 3$^-$		

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^{152}Pm β^- decay (4.12 min) 1992Ma42 (continued)

^{152}Sm Levels (continued)

E(level)†	Jπ‡	E(level)†	Jπ‡	E(level)†	Jπ‡
2295.2 *4*	1^-,2	2367.1 *3*	1^-,2	2509.8 *10*	$1^{(-)}$
2308.9 *5*	1,2^+	2376.9 *15*		2687.9 *10*	0^+,1,2
				2925.6 *10*	0^+,1,2

† From a least-squares fit to the Eγ data.
‡ Adopted values.
# From 1992Ma42, except for the 122 level as noted.
@ The authors propose a single level at 2091 deexcited by transitions 1050.1, 1127.4, and 1970.8. Based on work in (n,n′γ), there is a doublet at 2091 with the 1970.8γ placed from a separate level. The authors′ energy gives E(level)=2092.6 *10*. The evaluator has added this second level to this dataset.
& Band(A): g.s. band.
a Band(B): First β band.
b Band(C): Second β band.
c Band(D): Third β band.

β^- radiations

Iβ(to g.s.)+Iβ(to 122 level)=82.4 *38* 4πβγ (1996GrZZ).

E(decay)	E(level)	$I\beta^-$‡#	Log *ft*	Comments
(5.8×10^2 *3*)	2925.6	0.079 *17*	6.35 *12*	av Eβ=181 *10*
(8.2×10^2 *3*)	2687.9	0.063 *17*	6.97 *13*	av Eβ=270 *10*
(1.00×10^3 *3*)	2509.8	0.063 *17*	7.27 *13*	av Eβ=340 *11*
(1.13×10^3 *3*)	2376.9	<0.032	>7.8	av Eβ=394 *11*
(1.14×10^3 *3*)	2367.1	0.126 *25*	7.18 *10*	av Eβ=398 *11*
(1.20×10^3 *3*)	2308.9	0.14 *3*	7.22 *10*	av Eβ=422 *11*
(1.21×10^3 *3*)	2295.2	0.17 *3*	7.15 *9*	av Eβ=427 *11*
(1.22×10^3 *3*)	2287.5	0.031 *16*	7.90 *23*	av Eβ=430 *11*
(1.22×10^3 *3*)	2284.85	1.07 *11*	6.37 *6*	av Eβ=431 *11*
(1.27×10^3 *3*)	2239.8	0.28 *4*	7.01 *8*	av Eβ=450 *11*
(1.27×10^3 *3*)	2237.4	0.11 *3*	7.42 *13*	av Eβ=451 *11*
(1.28×10^3 *3*)	2224.8	0.36 *4*	6.92 *6*	av Eβ=457 *11*
(1.31×10^3 *3*)	2201.2	0.46 *5*	6.84 *6*	av Eβ=466 *11*
(1.33×10^3 *3*)	2175.8	0.031 *16*	8.04 *23*	av Eβ=477 *11*
(1.34×10^3 *3*)	2172.8	0.42 *5*	6.92 *7*	av Eβ=478 *11*
(1.34×10^3 *3*)	2167.1	0.126 *19*	7.45 *8*	av Eβ=480 *11*
(1.38×10^3 *3*)	2127.6	0.39 *5*	7.00 *7*	av Eβ=497 *11*
(1.42×10^3 *3*)	2092.7	0.047 *17*	7.96 *15*	av Eβ=512 *11*
(1.42×10^3 *3*)	2090.8	0.30 *4*	7.16 *7*	av Eβ=513 *11*
(1.47×10^3 *3*)	2042.8	0.60 *6*	6.91 *6*	av Eβ=533 *12*
(1.54×10^3 *3*)	1965.1	<0.032	>8.3	av Eβ=567 *12*
(1.56×10^3 *3*)	1944.2	0.33 *4*	7.28 *6*	av Eβ=576 *12*
(1.56×10^3 *3*)	1944.1	0.094 *18*	7.83 *9*	
(1.62×10^3 *3*)	1892.4	0.204 *23*	7.54 *6*	av Eβ=598 *12*
(1.73×10^3 *3*)	1776.08	0.99 *10*	6.98 *6*	av Eβ=649 *12*
(1.74×10^3 *3*)	1768.6	0.11 *3*	7.94 *13*	av Eβ=652 *12*
(1.83×10^3 *3*)	1680.5	0.22 *4*	7.72 *9*	av Eβ=691 *12*
(1.85×10^3 *3*)	1658.7	2.7 *3*	6.65 *6*	av Eβ=700 *12*

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^{152}Pm β^- decay (4.12 min) 1992Ma42 (continued)

β^- radiations (continued)

E(decay)	E(level)	Iβ^-[‡#]	Log *ft*	Comments
(1.86×10^3 *3*)	1650.6	0.08 *4*	8.19 *22*	av Eβ=704 *12*
(1.98×10^3 *3*)	1530.0	0.031 *23*	8.7 *4*	av Eβ=757 *12*
(2.00×10^3 *3*)	1511.06	0.11 *3*	8.17 *12*	av Eβ=765 *12*
(2.22×10^3 *3*)	1292.55	1.10 *10*	7.35 *5*	av Eβ=863 *12*
(2.27×10^3[@] *3*)	1234.1	0.11 *3*	8.40 *12*	av Eβ=889 *12* E(decay): This is a second forbidden transition and from an expected log *ft*>12.8 the β^- branch should be negligibly small.
(2.42×10^3 *3*)	1086.5	0.53 *7*	7.83 *7*	av Eβ=955 *12*
(2.43×10^3 *3*)	1082.77	4.5 *5*	6.90 *6*	av Eβ=957 *12*
(2.47×10^3 *3*)	1040.91	0.12 *7*	9.7^{1u} *3*	av Eβ=963 *12*
(2.54×10^3 *3*)	963.25	1.0 *4*	7.64 *18*	av Eβ=1011 *12*
(2.70×10^3 *3*)	810.30	0.29 *6*	8.28 *10*	av Eβ=1080 *12*
(2.82×10^3 *3*)	684.83	0.31 *4*	8.33 *6*	av Eβ=1138 *12*
(3.39×10^3 *3*)	121.85	20.6[†] *18*	6.84 *5*	av Eβ=1395 *12* E(decay): from (121.8γ)β^- F-K plot: 3450 *150* (1972Wa04).
(3.51×10^3 *3*)	0.0	62[†] *4*	6.42 *4*	av Eβ=1451 *12* E(decay): Eβ^- from F-K plot: 3500 *100* (1977Ya07), 3400 *200* (1975Wi08), 3600 *200* (1971Da19).

[†] Iβ(g.s.)+Iβ(122 level)=82.4% 38 from 4$\pi\beta\gamma$ (1996Gr20), in excellent agreement with 82.3% 38, a sum of the individual values based on intensity balances.
[‡] From the intensity imbalance at each level. For values deduced from the TAGS method, see 1997Gr09.
[#] Absolute intensity per 100 decays.
[@] Existence of this branch is questionable.

γ(^{152}Sm)

Iγ normalization: From Iγ(121γ) per 100 decays=15.7 *13*, a weighted average of 15.7 *19* (1972Wa04) and 15.7 *16* (1975Wi08).

The data of 1992Ma42 are in general agreement with earlier studies. Some low intensity γ's observed by 1977Ya07, however, are not confirmed by 1992Ma42, and have not been listed. Also, the energy measurements of 1992Ma42 and 1977Ya07 for the high energy γ's are not in very good agreement.

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	α[a]	Comments
119.5 *2*	2.8 *1*	1082.77	0^+	963.25	1^-	[E1]	0.170	α(K)=0.1436 *22*; α(L)=0.0207 *3*; α(M)=0.00442 *7*; α(N+..)=0.001136 *17* α(N)=0.000988 *15*; α(O)=0.0001408 *21*; α(P)=7.13×10^{-6} *11*
121.8 *1*	100	121.85	2^+	0.0	0^+	E2	1.155	α(K)=0.678 *10*; α(L)=0.370 *6*; α(M)=0.0853 *13*; α(N+..)=0.0212 *3* α(N)=0.0187 *3*; α(O)=0.00239 *4*; α(P)=3.00×10^{-5} *5*
209.5 *6*	0.13 *3*	1292.55	2^+	1082.77	0^+	[E2]	0.1774	α(K)=0.1301 *22*; α(L)=0.0379 *7*; α(M)=0.00857 *16*; α(N+..)=0.00216 *4* α(N)=0.00190 *4*; α(O)=0.000253 *5*; α(P)=6.51×10^{-6} *11*
244.7 *1*	6.2 *3*	366.58	4^+	121.85	2^+	E2	0.1073	α(K)=0.0808 *12*; α(L)=0.0207 *3*; α(M)=0.00465 *7*; α(N+..)=0.001176 *17* α(N)=0.001032 *15*; α(O)=0.0001394 *20*; α(P)=4.18×10^{-6} *6*
251.4 *4*	0.9 *1*	1292.55	2^+	1040.91	3^-	E1	0.0231	α(K)=0.0197 *3*; α(L)=0.00270 *4*; α(M)=0.000577 *9*; α(N+..)=0.0001496 *22* α(N)=0.0001296 *19*; α(O)=1.90×10^{-5} *3*; α(P)=1.068×10^{-6} *16*
272.5 *2*	2.1 *1*	1082.77	0^+	810.30	2^+	(E2)	0.0761	α(K)=0.0583 *9*; α(L)=0.01381 *20*; α(M)=0.00309 *5*; α(N+..)=0.000783 *12* α(N)=0.000687 *10*; α(O)=9.37×10^{-5} *14*; α(P)=3.08×10^{-6} *5*
329.2 *3*	1.5 *1*	1292.55	2^+	963.25	1^-	[E1]	0.01163	α(K)=0.00995 *15*; α(L)=0.001345 *19*; α(M)=0.000287 *4*; α(N+..)=7.47×10^{-5} *11* α(N)=6.46×10^{-5} *10*; α(O)=9.51×10^{-6} *14*; α(P)=5.51×10^{-7} *8*
365.9[b] *5*	0.39 *4*	1658.7	0^+	1292.55	2^+			E_γ: Tentative assignment to ^{152}Sm. Not confirmed in other work.
443.6 *3*	1.3 *1*	810.30	2^+	366.58	4^+	E2	0.0177 *2*	α(K)=0.01444 *21*; α(L)=0.00260 *4*; α(M)=0.000571 *8*; α(N+..)=0.0001467 *21* α(N)=0.0001278 *18*; α(O)=1.81×10^{-5} *3*; α(P)=8.21×10^{-7} *12*
534.1[b] *7*	0.2 *1*	1768.6	2^+	1234.1	3^+			I_γ: Iγ/Iγ(958γ)=0.086 *9* in 13-y ^{152}Eu ε decay compared with 0.7 *+5−4* here suggests that this γ does not belong with the 1768 level.
563.0 *2*	2.8 *1*	684.83	0^+	121.85	2^+	E2	0.00941 *14*	α=0.00941 *14*; α(K)=0.00779 *11*; α(L)=0.001274 *18*; α(M)=0.000277 *4*; α(N+..)=7.18×10^{-5} *10* α(N)=6.23×10^{-5} *9*; α(O)=8.99×10^{-6} *13*; α(P)=4.52×10^{-7} *7*
564.1 *5*	<1.0	1650.6	2^-	1086.5	2^+	E1	0.00330 *5*	α=0.00330 *5*; α(K)=0.00282 *4*; α(L)=0.000372 *6*; α(M)=7.92×10^{-5} *12*; α(N+..)=2.07×10^{-5} *3* α(N)=1.79×10^{-5} *3*; α(O)=2.66×10^{-6} *4*; α(P)=1.611×10^{-7} *23*
[x]571.9	<1.1							
616.0 *3*	0.1 *1*	2127.6	0^+,1,2	1511.06	1^-			
642.8 *3*	1.0 *1*	2172.8	1,2^+	1530.0	2^-			
661.7 *4*	1.5 *1*	2172.8	1,2^+	1511.06	1^-			
674.2 *4*	2.1 *1*	1040.91	3^-	366.58	4^+	E1	0.00225 *4*	α=0.00225 *4*; α(K)=0.00193 *3*; α(L)=0.000252 *4*; α(M)=5.37×10^{-5} *8*; α(N+..)=1.405×10^{-5} *20* α(N)=1.213×10^{-5} *17*; α(O)=1.81×10^{-6} *3*; α(P)=1.108×10^{-7} *16*
688.3 *4*	3.7 *2*	810.30	2^+	121.85	2^+	E2+M1+E0	0.0434 *13*	α: from adopted γ's.

$^{152}_{62}$Sm$_{90}$-4

γ(^{152}Sm) (continued)

E_γ [†]	I_γ [†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [‡]	δ [‡]	α [a]	Comments
695.9 *3*	16.6 *8*	1658.7	0+	963.25	1−	[E1]		0.00211 *3*	α=0.00211 *3*; α(K)=0.00181 *3*; α(L)=0.000236 *4*; α(M)=5.02×10^{-5} *7*; α(N+..)=1.314×10^{-5} *19* α(N)=1.134×10^{-5} *16*; α(O)=1.691×10^{-6} *24*; α(P)=1.039×10^{-7} *15*
727.1 *7*	0.2 *1*	2237.4	1,2	1511.06	1−				
735.1 *3*	3.3 *2*	1776.08	(2+)	1040.91	3−	D,E2			
810.2 *3*	1.6 *1*	810.30	2+	0.0	0+	E2		0.00393 *6*	α=0.00393 *6*; α(K)=0.00331 *5*; α(L)=0.000488 *7*; α(M)=0.0001051 *15*; α(N+..)=2.74×10^{-5} *4* α(N)=2.37×10^{-5} *4*; α(O)=3.49×10^{-6} *5*; α(P)=1.96×10^{-7} *3*
812.9 *3*	3.0 *2*	1776.08	(2+)	963.25	1−	D,E2			
841.4 *2*	25.8 *13*	963.25	1−	121.85	2+	E1		0.001437 *21*	α=0.001437 *21*; α(K)=0.001234 *18*; α(L)=0.0001598 *23*; α(M)=3.40×10^{-5} *5*; α(N+..)=8.90×10^{-6} α(N)=7.68×10^{-6} *11*; α(O)=1.147×10^{-6} *16*; α(P)=7.12×10^{-8} *10*
847.5 *5*	0.4 *1*	1658.7	0+	810.30	2+				
861.7[@] *8*		1944.1		1082.77	0+				
867.2 *5*	0.4 *1*	1234.1	3+	366.58	4+	M1+E2	−6.5 *3*	0.00343 *5*	α=0.00343 *5*; α(K)=0.00290 *4*; α(L)=0.000419 *6*; α(M)=9.01×10^{-5} *13*; α(N+..)=2.35×10^{-5} *4* α(N)=2.03×10^{-5} *3*; α(O)=3.00×10^{-6} *5*; α(P)=1.720×10^{-7} *25*
870.2 *4*	0.7 *1*	1680.5	1−	810.30	2+				
903.3[@] *5*	0.7 *1*	1944.2	1−,2	1040.91	3−				
919.0 *2*	5.3 *3*	1040.91	3−	121.85	2+	E1		0.001211 *17*	α=0.001211 *17*; α(K)=0.001041 *15*; α(L)=0.0001342 *19*; α(M)=2.85×10^{-5} *4*; α(N+..)=7.47×10^{-6} α(N)=6.45×10^{-6} *9*; α(O)=9.65×10^{-7} *14*; α(P)=6.02×10^{-8} *9*
926.0 *3*	3.1 *2*	1292.55	2+	366.58	4+				
929.1 *4*	1.3 *1*	1892.4	0+,1,2	963.25	1−				
958.2 *4*	0.3 *1*	1768.6	2+	810.30	2+				
960.9 *2*	23.4 *12*	1082.77	0+	121.85	2+	[E2]		0.00271 *4*	α=0.00271 *4*; α(K)=0.00229 *4*; α(L)=0.000326 *5*; α(M)=6.99×10^{-5} *10*; α(N+..)=1.83×10^{-5} *3* α(N)=1.580×10^{-5} *23*; α(O)=2.34×10^{-6} *4*; α(P)=1.361×10^{-7} *19*
963.3[#] *2*	20.4[#] *11*	963.25	1−	0.0	0+	[E1]		0.001107 *16*	α=0.001107 *16*; α(K)=0.000952 *14*; α(L)=0.0001225 *18*; α(M)=2.60×10^{-5} *4*; α(N+..)=6.82×10^{-6} α(N)=5.89×10^{-6} *9*; α(O)=8.81×10^{-7} *13*; α(P)=5.51×10^{-8} *8*
964.7[#]	2.3[#] *2*	1086.5	2+	121.85	2+				
981.0[@] *3*	1.4 *1*	1944.2	1−,2	963.25	1−				
995.7 *5*	0.6 *1*	1680.5	1−	684.83	0+				
1050.0 *4*	1.0 *1*	2090.8	1−,2	1040.91	3−				
1079.5 *3*	3.7 *2*	2042.8	0+,1,2	963.25	1−				
1086.5 *4*	1.6 *1*	1086.5	2+	0.0	0+	E2		0.00209 *3*	α=0.00209 *3*; α(K)=0.001777 *25*; α(L)=0.000247 *4*; α(M)=5.30×10^{-5} *8*; α(N+..)=1.385×10^{-5} *20* α(N)=1.197×10^{-5} *17*; α(O)=1.778×10^{-6} *25*; α(P)=1.057×10^{-7} *15*
1112.4 *5*	0.5 *1*	1234.1	3+	121.85	2+	M1+E2	−8.7 *6*	0.00201 *3*	α=0.00201 *3*; α(K)=0.001706 *24*; α(L)=0.000236 *4*; α(M)=5.06×10^{-5} *8*; α(N+..)=1.375×10^{-5} *20*

γ(^{152}Sm) (continued)

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]	δ[‡]	α[a]	Comments
									α(N)=1.144×10^{-5} *16*; α(O)=1.700×10^{-6} *24*; α(P)=1.016×10^{-7} *15*; α(IPF)=5.09×10^{-7} *12*
1127.4 *5*	0.9 *1*	2090.8	1^-,2	963.25	1^-				
1253.2 *6*	0.4 *1*	2295.2	1^-,2	1040.91	3^-				
1274.4 *7*	0.3 *1*	2237.4	1,2	963.25	1^-				
1293.0 *4*	1.3 *1*	1292.55	2^+	0.0	0^+				
1317.4 *5*	1.3 *1*	2127.6	0^+,1,2	810.30	2^+				
1321.6 *2*	6.8 *4*	2284.85	0,1,2	963.25	1^-				
1326.4 *3*	0.3 *1*	2367.1	1^-,2	1040.91	3^-				
1332.0 *4*	0.3 *1*	2295.2	1^-,2	963.25	1^-				
1388.8 *3*	2.5 *1*	1511.06	1^-	121.85	2^+	E1+M2	−0.025 *12*	0.000703 *11*	α=0.000703 *11*; α(K)=0.000494 *8*; α(L)=6.28×10^{-5} *10*; α(M)=1.332×10^{-5} *20*; α(N+..)=0.0001328 α(N)=3.02×10^{-6} *5*; α(O)=4.53×10^{-7} *7*; α(P)=2.87×10^{-8} *5*; α(IPF)=0.0001293 *19*
1403.0 *6*	0.5 *1*	2367.1	1^-,2	963.25	1^-				
1408.2 *5*	1.2 *1*	1530.0	2^-	121.85	2^+	E1+M2	+0.043 *3*	0.000707 *10*	α=0.000707 *10*; α(K)=0.000486 *7*; α(L)=6.18×10^{-5} *9*; α(M)=1.311×10^{-5} *19* α(N)=2.97×10^{-6} *5*; α(O)=4.46×10^{-7} *7*; α(P)=2.83×10^{-8} *4*; α(IPF)=0.0001423 *20*
1488.1 *6*	0.2 *1*	2172.8	1,2^+	684.83	0^+				
1535.3 *10*	0.2 *1*	1658.7	0^+	121.85	2^+				
1558.5 *11*	0.1 *1*	1680.5	1^-	121.85	2^+				
1770.4 *10*	0.2 *1*	1768.6	2^+	0.0	0^+	E2		0.000989 *14*	α=0.000989 *14*; α(K)=0.000690 *10*; α(L)=9.07×10^{-5} *13*; α(M)=1.93×10^{-5} *3*; α(N+..)=0.000188 *3* α(N)=4.38×10^{-6} *7*; α(O)=6.56×10^{-7} *10*; α(P)=4.11×10^{-8} *6*; α(IPF)=0.000183 *3*
1822.1[@] *6*	0.6 *1*	1944.1		121.85	2^+				
1843.2 *10*	0.1 *1*	1965.1	1,2^+	121.85	2^+				
1873.1 *10*	0.1 *1*	2239.8	2^+	366.58	4^+				
1921.6 *10*	0.1 *1*	2042.8	0^+,1,2	121.85	2^+				
1970.8 *9*	0.3 *1*	2092.7		121.85	2^+				
2007.0 *5*	1.1 *1*	2127.6	0^+,1,2	121.85	2^+				
2045.2 *6*	0.8 *1*	2167.1	0^+,1,2	121.85	2^+				
2053.9 *10*	0.2 *1*	2175.8	0^+ to 3^-	121.85	2^+				
2079.3 *4*	2.9 *2*	2201.2	0^+,1,2	121.85	2^+				
2114.2 *8*	0.2 *1*	2237.4	1,2	121.85	2^+				
2118.0 *3*	1.3 *1*	2239.8	2^+	121.85	2^+				
2165.6 *10*	0.2 *1*	2287.5	0^+ to 3^-	121.85	2^+				
2175.0 *8*	0.4 *1*	2295.2	1^-,2	121.85	2^+				
2187.0 *6*	0.5 *1*	2308.9	1,2^+	121.85	2^+				
2224.8 *5*	2.3 *1*	2224.8	1,2^+	0.0	0^+				
2239.7 *8*	0.4 *1*	2239.8	2^+	0.0	0^+				

γ(^{152}Sm) (continued)

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f
2255.0 *15*	0.1 *1*	2376.9		121.85	2^+
2309.1 *9*	0.4 *1*	2308.9	1,2^+	0.0	0^+
2387.9 *10*	0.4 *1*	2509.8	$1^{(-)}$	121.85	2^+
2566.0 *10*	0.4 *1*	2687.9	0^+,1,2	121.85	2^+
2803.7 *10*	0.5 *1*	2925.6	0^+,1,2	121.85	2^+

[†] From 1992Ma42.

[‡] From adopted gammas.

[#] 1992Ma42 report Eγ=963.3 *2* with Iγ=22.7 *11* placed from the 963 level. A transition with this energy is also known to deexcite the 1086 level. From Iγ/Iγ(1086γ)=1.43 *4* for the 1086 level in Adopted Gammas, one gets Iγ=2.3 *2* for placement from the 1086 level, leaving Iγ=20.4 *11* for placement from the 963 level. Eγ for placement from the 1086 level is from the level energy difference.

[@] The 861.7 and 1822.1 γ's are placed by the authors from α 1944 level along with the 903.3 and 981.0 γ's; however, in (n,n$'\gamma$), the 1944 level is a doublet. The evaluator has introduced that doublet here, with the transitions divided as given in (n,n$'\gamma$).

[&] For absolute intensity per 100 decays, multiply by 0.157 *13*.

[a] 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.

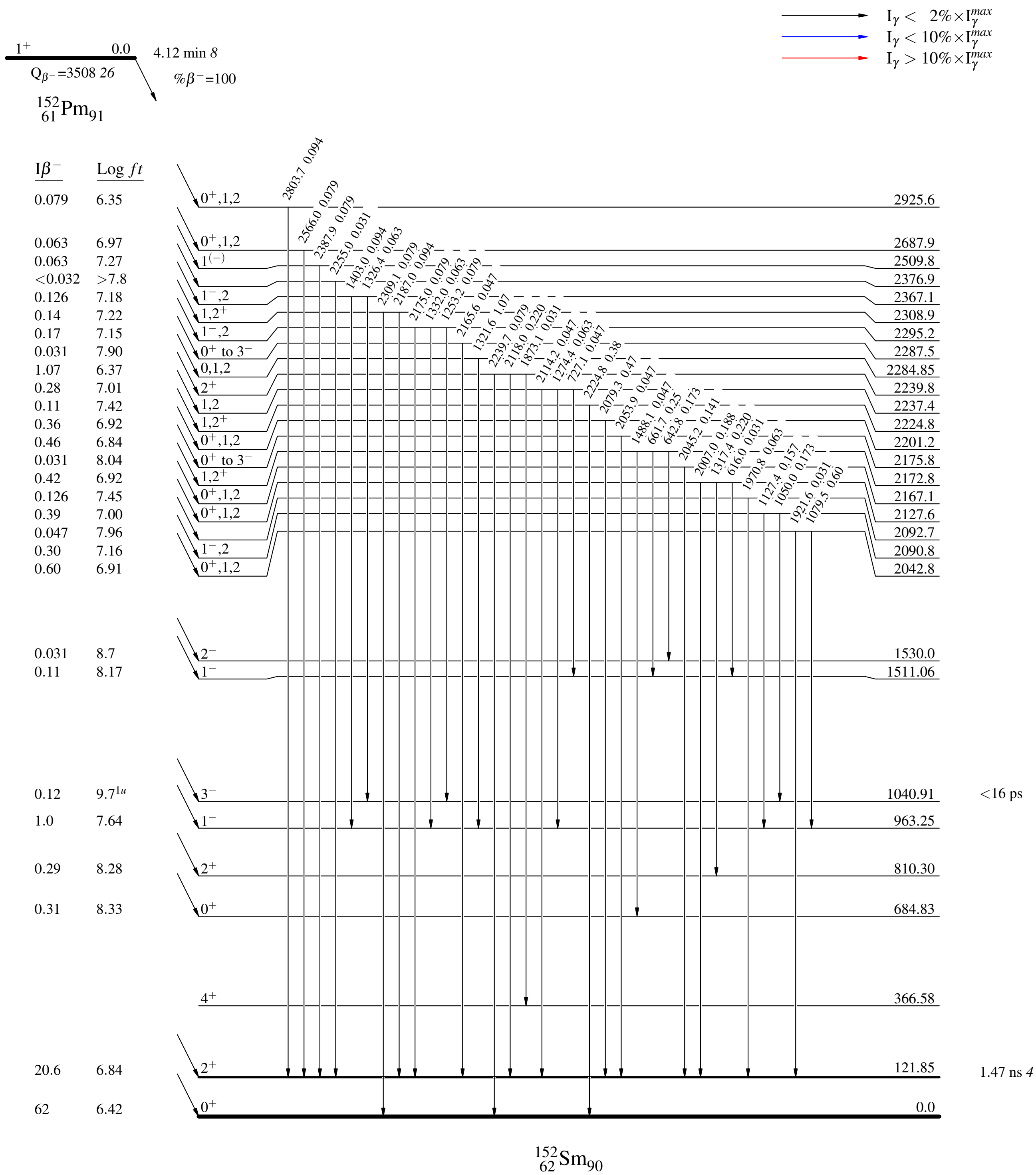
[b] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

^{152}Pm β^- decay (4.12 min) 1992Ma42

Decay Scheme

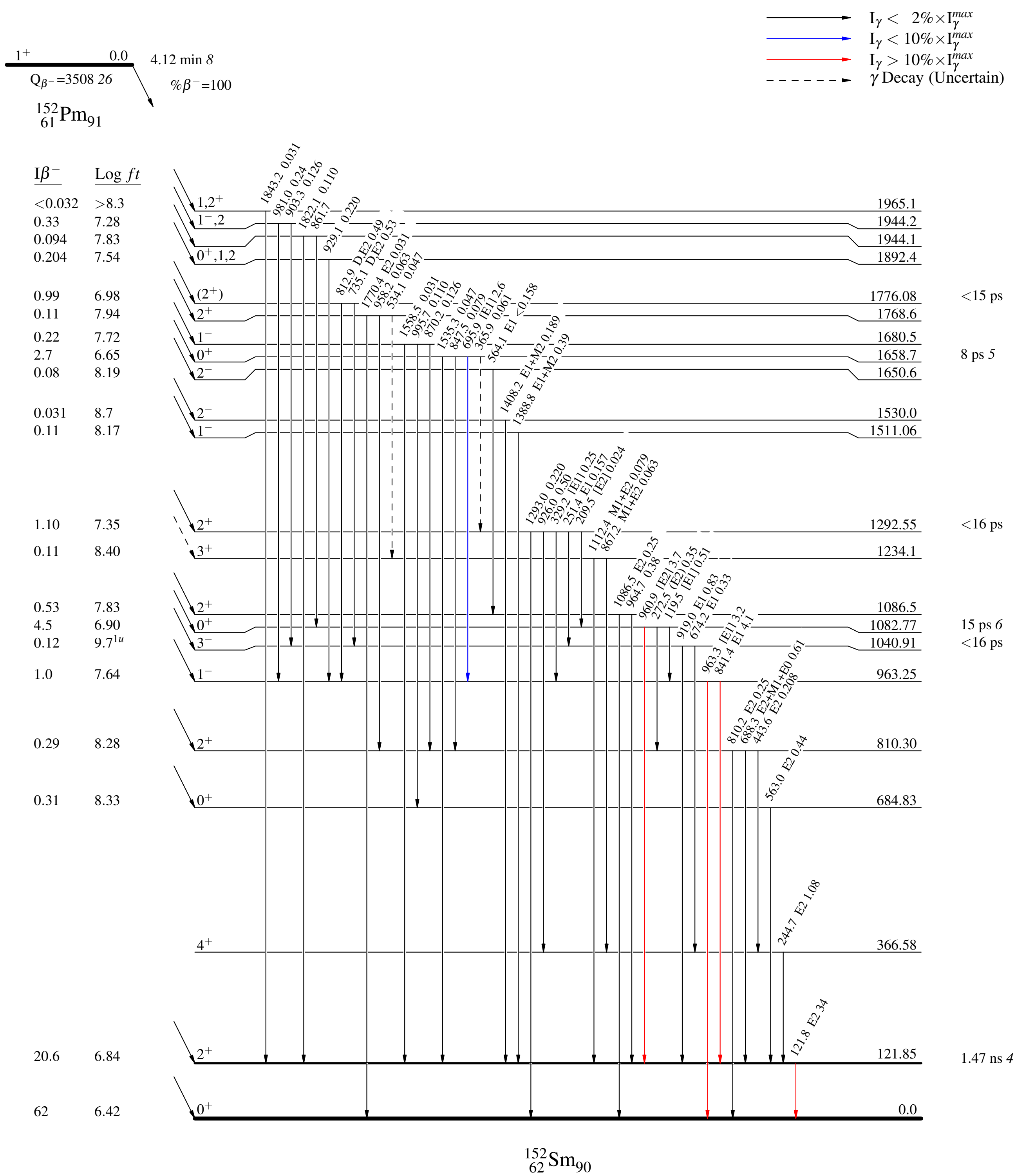
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays



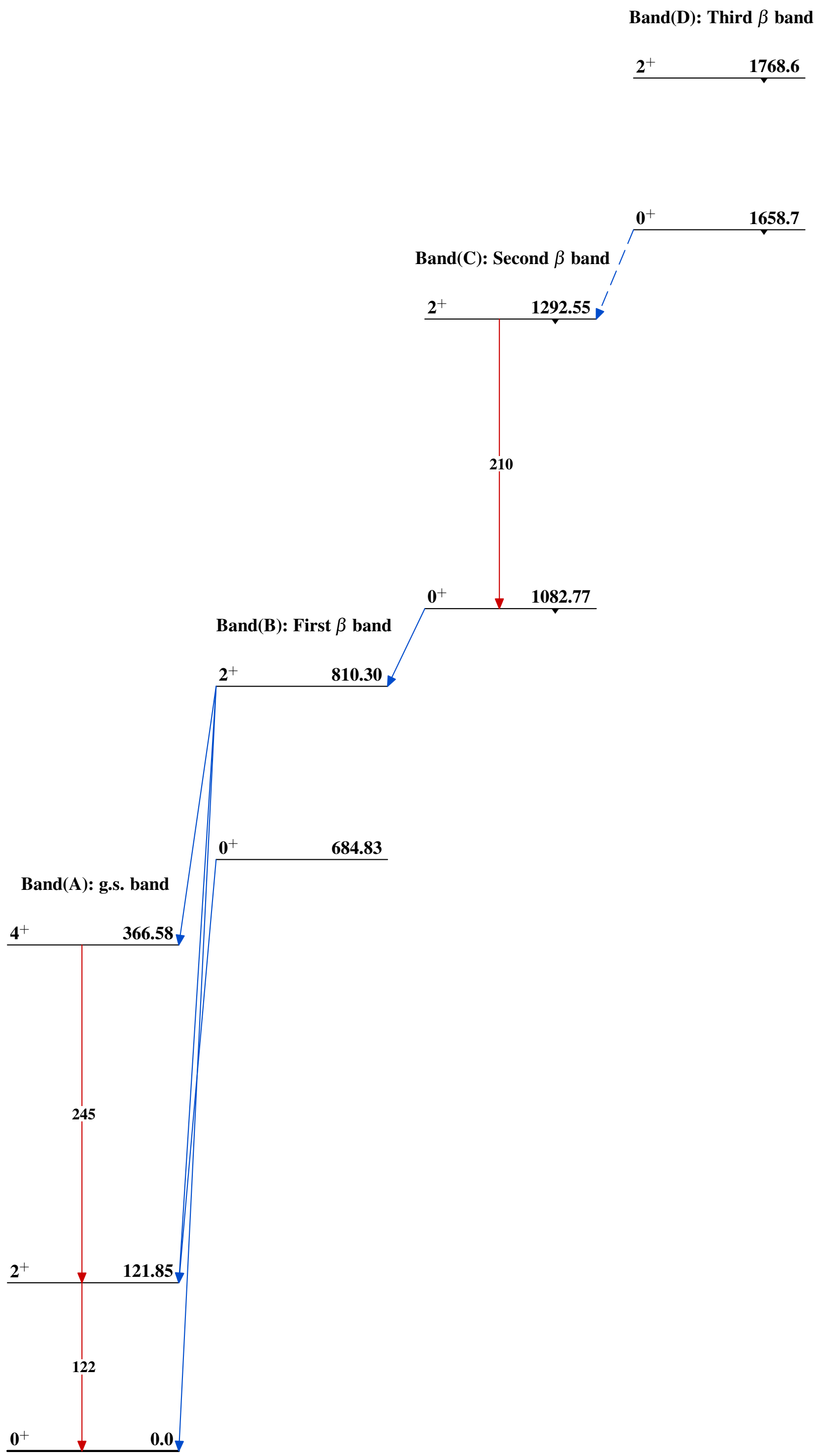
^{152}Pm β^- decay (4.12 min) 1992Ma42

Decay Scheme (continued)

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



^{152}Pm β^- decay (4.12 min) 1992Ma42



$^{152}_{62}Sm_{90}$