^{180}Ir ε decay 1994Ki01,1992Bo19,1973HaVR

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 126, 151 (2015)	1-Feb-2015

Parent: ^{180}Ir: E=0.0; J$^{\pi}$=(5^{+}); $T_{1/2}$=1.5 min *1*; Q(ε)=6384 *27*; %ε+%β^{+} decay=100.0

1994Ki01: ^{180}Ir activity produced by ^{166}Er(^{19}F,5n), E(^{19}F)=108 MeV. Measured Eγ, Iγ, γγ coin, γγ(θ), I(ce), and ce-γ coin using CAESAR array consisting of 6 Compton-suppressed HPGe detectors and a superconducting solenoid electron spectrometer operated in lens mode.

1992Bo19: ^{180}Ir activity produced by ^{148}Nd(^{36}Ar,p3n), E(^{36}Ar)=240 MeV. Measured Eγ, Iγ, γγ coin, E x-ray, I x-ray, γ-x-ray coin using two Ge detectors.

1973HaVR: ^{180}Ir activity produced by ^{169}Tm(^{16}O,5n), E(^{16}O)=125 MeV. Measured Eγ, Iγ, γγ coin using Ge(Li) detectors.

A total energy release of 6430 keV *160* for this decay scheme is calculated by the RADLST code, in agreement with the Q value of 6382 keV *27*. However, due to the large Q value and the experimental ≈2 MeV γ-ray energy cut-off, the decay scheme is considered to be incomplete.

Additional information 1.

α: Additional information 2.

^{180}Os Levels

1992Bo19 propose a 8^{+}, 1256 level (depopulated by a 461.7γ) and a 7^{-}, 1862 level (depopulated by 257.6γ, 604.5γ, and 1066.6γ) which are not observed by 1994Ki01. All depopulating γ′s (with the exception of the 1066.6γ) are given alternate placements in 1994Ki01. As the direct population of 7^{-} and 8^{+} states from a (4,5) parent is unlikely, the level scheme of 1994Ki01 is adopted here.

E(level)†	J$^{\pi}$‡	E(level)†	J$^{\pi}$‡	E(level)†	J$^{\pi}$‡	E(level)†	J$^{\pi}$‡
0.0#	0^{+}	795.06# *16*	6^{+}	1052.82@ *22*	4^{+}	1405.8& *3*	5^{+}
132.1# *2*	2^{+}	831.00@ *18*	2^{+}	1196.94& *19*	4^{+}	1514.98 *21*	4^{-}
408.65# *13*	4^{+}	870.44& *19*	2^{+}	1375.35 *25*	3^{-}	1515.6 *4*	4^{+}
736.3@ *4*	0^{+}	1022.80& *18*	3^{+}	1379.02@ *23*	6^{+}	1604.1 *3*	5^{-}

† From a least-squares fit to Eγ′s by evaluator.
‡ From the Adopted Levels.
# Band(A): g.s. band.
@ Band(B): K^{π}=0^{+} band.
& Band(C): K^{π}=2^{+} γ-vibrational band.

ε,β^{+} radiations

E(decay)	E(level)	Iβ^{+} #	Iε#	Log *ft*‡	I(ε+β^{+})†#	Comments
(4.78×10^{3} *3*)	1604.1	1.3 *4*	1.4 *4*	6.52 *14*	2.7 *8*	av Eβ=1700 *13*; εK=0.416 *5*; εL=0.0692 *8*; εM+=0.02162 *23*
(4.87×10^{3} *3*)	1515.6	4.7 *9*	4.6 *8*	6.01 *9*	9.3 *17*	av Eβ=1740 *13*; εK=0.402 *5*; εL=0.0669 *7*; εM+=0.02090 *22*
(4.87×10^{3} *3*)	1514.98	3.3 *2*	3.1 *2*	6.18 *4*	6.4 *4*	av Eβ=1741 *13*; εK=0.402 *5*; εL=0.0669 *7*; εM+=0.02089 *22*
(4.98×10^{3} *3*)	1405.8	2.0 *4*	1.8 *4*	6.44 *10*	3.8 *8*	av Eβ=1791 *13*; εK=0.386 *4*; εL=0.0641 *7*; εM+=0.02002 *22*
(5.00×10^{3} *3*)	1379.02	0.96 *21*	0.84 *19*	6.77 *11*	1.8 *4*	av Eβ=1803 *13*; εK=0.382 *4*; εL=0.0634 *7*; εM+=0.01981 *21*
(5.01×10^{3} *3*)	1375.35	3.3 *2*	2.8 *1*	6.25 *4*	6.1 *3*	av Eβ=1805 *13*; εK=0.381 *4*; εL=0.0633 *7*;

Continued on next page (footnotes at end of table)

^{180}Ir ε decay 1994Ki01,1992Bo19,1973HaVR (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ #	Iε#	Log *ft*‡	I($\varepsilon+\beta^+$)†#	Comments
						εM+=0.01978 *21*
(5.19×10^3 *3*)	1196.94	7.2 *10*	5.5 *7*	5.99 *7*	12.7 *17*	av Eβ=1887 *13*; εK=0.356 *4*; εL=0.0590 *7*; εM+=0.01844 *20*
(5.33×10^3 *3*)	1052.82	6.7 *5*	4.6 *3*	6.09 *5*	11.3 *8*	av Eβ=1954 *13*; εK=0.336 *4*; εL=0.0558 *6*; εM+=0.01742 *19*
(5.36×10^3 *3*)	1022.80	4.6 *7*	3.1 *5*	6.26 *8*	7.7 *12*	av Eβ=1967 *13*; εK=0.332 *4*; εL=0.0551 *6*; εM+=0.01721 *19*
(5.51×10^3 *3*)	870.44	2.8 *11*	1.7 *6*	6.55 *17*	4.5 *17*	av Eβ=2038 *13*; εK=0.313 *4*; εL=0.0519 *6*; εM+=0.01620 *18*
(5.55×10^3 *3*)	831.00	4.6 *7*	2.8 *4*	6.34 *8*	7.4 *11*	av Eβ=2056 *13*; εK=0.308 *4*; εL=0.0511 *6*; εM+=0.01594 *18*
(5.59×10^3 *3*)	795.06	1.4 *6*	0.9 *4*	6.86 *20*	2.3 *10*	av Eβ=2073 *13*; εK=0.304 *4*; εL=0.0503 *6*; εM+=0.01572 *17*
(5.98×10^3 *3*)	408.65	17 *3*	7.9 *13*	5.95 *8*	25 *4*	av Eβ=2252 *13*; εK=0.261 *3*; εL=0.0432 *5*; εM+=0.01348 *15*

† From an intensity balance at each level.

‡ Due to the large Q value (6.4 MeV) of the decay and the experimental ≈2 MeV γ-ray energy cut-off, the decay scheme is considered incomplete. The log *ft* values should therefore be considered lower limits.

Absolute intensity per 100 decays.

γ(^{180}Os)

Iγ normalization: intensity balance at 131 level suggests no direct feeding to this level. Decay scheme normalization deduced by evaluator assuming no direct feeding to g.s. and 131 level, and using I(γ+ce)(g.s.+131 level, excluding 131γ)=100%.

1973HaVR observe tentative unplaced transitions of 846.0 *5* with Iγ=5.8 *6*, 1014.0 *5* with Iγ=2.6 *3*, and 1330.3 *5* with Iγ=10.4 *6*. These transitions are not observed by 1994Ki01 or 1992Bo19, and thus, not included in the adopted gammas.

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	α	Comments
94.5[&]	≈0.4[&]	831.00	2^+	736.3	0^+	[E2]	5.49	α(K)=0.856 *12*; α(L)=3.50 *5*; α(M)=0.894 *13*; α(N)=0.214 *3*; α(O)=0.0316 *5*; α(P)=9.62×10^{-5} *14*
132.1 *1*	68 *15*	132.1	2^+	0.0	0^+	E2	1.464	α(K)=0.472 *7*; α(L)=0.748 *11*; α(M)=0.191 *3*; α(N)=0.0458 *7*; α(O)=0.00680 *10* α(P)=4.34×10^{-5} *7* I_γ: from intensity balance at 132 level assuming no ε feeding to this level. Others: Iγ=84.6 *20* (1994Ki01), Iγ=45 *2* (1992Bo19), and Iγ=95 *5* (1973LaZC). α(L)exp=0.737 *24*, α(M)exp=0.186 *6* (1994Ki01).
222.0[&]	1.6[&] *3*	1052.82	4^+	831.00	2^+	[E2]	0.235	α(K)=0.1292 *18*; α(L)=0.0798 *12*; α(M)=0.0200 *3*; α(N)=0.00482 *7*; α(O)=0.000733 *11* α(P)=1.232×10^{-5} *18*
257.9[&]	0.43[&] *16*	1052.82	4^+	795.06	6^+	[E2]	0.1450	α(K)=0.0873 *13*; α(L)=0.0438 *7*; α(M)=0.01092 *16*; α(N)=0.00263 *4*; α(O)=0.000404 *6* α(P)=8.55×10^{-6} *12* E_γ: placement from 1994Ki01. A 257.6 *3* transition with Iγ=0.8 *2* is placed by 1992Bo19 from a 7^- level at 1861.
276.5 *1*	100.0 *16*	408.65	4^+	132.1	2^+	E2	0.1169	α(K)=0.0728 *11*; α(L)=0.0334 *5*; α(M)=0.00831 *12*; α(N)=0.00200 *3*; α(O)=0.000309 *5* α(P)=7.22×10^{-6} *11* α(K)exp=0.073 *3*, α(L)exp=0.033 *2*, α(M)exp=0.0081 *4* (1994Ki01).
318.1[&]	1.1[&] *2*	1514.98	4^-	1196.94	4^+	[E1]	0.0213	α(K)=0.01768 *25*; α(L)=0.00277 *4*; α(M)=0.000632 *9*; α(N)=0.0001531 *22*; α(O)=2.57×10^{-5} *4* α(P)=1.671×10^{-6} *24*
326.3 *2*	1.1 *4*	1379.02	6^+	1052.82	4^+	[E2]	0.0714	α(K)=0.0477 *7*; α(L)=0.0180 *3*; α(M)=0.00443 *7*; α(N)=0.001070 *16*; α(O)=0.0001672 *24* α(P)=4.85×10^{-6} *7*
327.0[&]	1.1[&] *4*	1196.94	4^+	870.44	2^+	[E2]	0.0709	α(K)=0.0474 *7*; α(L)=0.0179 *3*; α(M)=0.00440 *7*; α(N)=0.001061 *15*; α(O)=0.0001659 *24* α(P)=4.82×10^{-6} *7*
352.3[&]	3.2[&] *2*	1375.35	3^-	1022.80	3^+	[E1]	0.01675	α(K)=0.01394 *20*; α(L)=0.00217 *3*; α(M)=0.000494 *7*; α(N)=0.0001197 *17*; α(O)=2.02×10^{-5} *3* α(P)=1.330×10^{-6} *19*
383.1[&]	0.4[&] *1*	1405.8	5^+	1022.80	3^+	[E2]	0.0455	α(K)=0.0320 *5*; α(L)=0.01023 *15*; α(M)=0.00250 *4*; α(N)=0.000603 *9*; α(O)=9.54×10^{-5} *14* α(P)=3.32×10^{-6} *5*

γ(^{180}Os) (continued)

E_γ [†]	I_γ [‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	δ [b]	α	Comments
386.4 *1*	12.0 *6*	795.06	6^+	408.65	4^+	E2		0.0444	α(K)=0.0314 *5*; α(L)=0.00993 *14*; α(M)=0.00242 *4*; α(N)=0.000585 *9*; α(O)=9.27×10^{-5} *13* α(P)=3.26×10^{-6} *5* I_γ: weighted average of values from 1994Ki01 and 1992Bo19. Other: Iγ=6.2 *6* (1973HaVR). α(L)exp=0.0097 *4*, α(M)exp=0.0032 *11* (1994Ki01).
401.9 [&]	1.0 [&] *2*	1196.94	4^+	795.06	6^+	[E2]		0.0399	α(K)=0.0285 *4*; α(L)=0.00870 *13*; α(M)=0.00212 *3*; α(N)=0.000511 *8*; α(O)=8.13×10^{-5} *12* α(P)=2.98×10^{-6} *5*
407.5 [&]	1.4 [&] *1*	1604.1	5^-	1196.94	4^+	E1		0.01201	α(K)=0.01002 *14*; α(L)=0.001539 *22*; α(M)=0.000351 *5*; α(N)=8.50×10^{-5} *12* α(O)=1.438×10^{-5} *21*; α(P)=9.67×10^{-7} *14* α(K)exp≤0.014 (1994Ki01).
422.3 [&]	0.9 [&] *3*	831.00	2^+	408.65	4^+	E2		0.0350	α(K)=0.0254 *4*; α(L)=0.00738 *11*; α(M)=0.00179 *3*; α(N)=0.000433 *6*; α(O)=6.91×10^{-5} *10* α(P)=2.66×10^{-6} *4* α(K)exp≤0.03 (1994Ki01). Mult.: E1 or E2 from α(K)exp, ΔJ=2 from level scheme requires E2.
461.6 [&]	1.1 [&] *2*	870.44	2^+	408.65	4^+	E2		0.0278	α(K)=0.0206 *3*; α(L)=0.00554 *8*; α(M)=0.001337 *19*; α(N)=0.000324 *5*; α(O)=5.20×10^{-5} *8* α(P)=2.17×10^{-6} *3* α(K)exp≤0.025 (1994Ki01). Mult.: E1 or E2 from α(K)exp, ΔJ=2 from level scheme requires E2. E_γ: placement from 1994Ki01. A 461.7 *4* transition with Iγ=1.3 *5* is placed by 1992Bo19 from a 8^+ level at 1256.
492.2 *2*	6.5 *4*	1514.98	4^-	1022.80	3^+	E1+M2	+0.23 *+10−9*	0.018 *10*	α(K)=0.015 *8*; α(L)=0.0026 *16*; α(M)=0.0006 *4*; α(N)=0.00015 *9*; α(O)=2.5×10^{-5} *15* α(P)=1.8×10^{-6} *11* α(K)exp=0.005 *3* (1994Ki01). A_2=+0.06 *11*. δ: Other: 0.00 *9* from α(K)exp.
505.0 [&]	3.4 [&] *2*	1375.35	3^-	870.44	2^+	E1		0.00750	α(K)=0.00628 *9*; α(L)=0.000948 *14*; α(M)=0.000216 *3*; α(N)=5.23×10^{-5} *8*; α(O)=8.89×10^{-6} *13* α(P)=6.15×10^{-7} *9* α(K)exp≤0.008 (1994Ki01).
544.3 [&]	2.7 [&] *2*	1375.35	3^-	831.00	2^+	E1		0.00640	α(K)=0.00536 *8*; α(L)=0.000805 *12*; α(M)=0.000183 *3*; α(N)=4.44×10^{-5} *7*; α(O)=7.56×10^{-6} *11* α(P)=5.27×10^{-7} *8* α(K)exp=0.0057 *13* (1994Ki01).

γ(^{180}Os) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[b]	α	Comments
583.9 3	1.9 5	1379.02	6^+	795.06	6^+	E0+M1+E2	−1.6 +3−4	0.059[a] 10	α(K)=0.0191 23; α(L)=0.0036 3; α(M)=0.00084 7; α(N)=0.000204 16; α(O)=3.4×10^{-5} 3 α(P)=2.1×10^{-6} 3 α(K)exp=0.059 10 (1994Ki01). A_2=+0.05 9, A_4=+0.09 9.
604.1[&]	2.0[&] 2	736.3	0^+	132.1	2^+	E2		0.01452	α(K)=0.01127 16; α(L)=0.00249 4; α(M)=0.000592 9; α(N)=0.0001434 20; α(O)=2.35×10^{-5} 4 α(P)=1.206×10^{-6} 17 A_2=+0.5 3, A_4=+1.1 3. Mult.: Q from $\gamma\gamma(\theta)$, $\Delta\pi$=no from level scheme. E_γ: placement from 1994Ki01. A 604.5 5 transition with Iγ=1.3 4 is placed by 1992Bo19 from a 7^- level at 1861.
610.7[&]	1.4[&] 6	1405.8	5^+	795.06	6^+	M1+E2	+4 1	0.0157 11	α(K)=0.0123 10; α(L)=0.00258 12; α(M)=0.00061 3; α(N)=0.000148 7; α(O)=2.44×10^{-5} 12 α(P)=1.33×10^{-6} 11 α(K)exp≤0.011 (1994Ki01). A_2=−0.2 2, A_4=−0.2 2.
614.1 3	3.9 5	1022.80	3^+	408.65	4^+	E2		0.01399	α(K)=0.01088 16; α(L)=0.00238 4; α(M)=0.000565 8; α(N)=0.0001369 20; α(O)=2.25×10^{-5} 4 α(P)=1.165×10^{-6} 17 α(K)exp≤0.013 (1994Ki01). A_2=+0.03 13, A_4=−0.17 15.
644.2 3	17.2 10	1052.82	4^+	408.65	4^+	E0+M1+E2	−3.5 +5−7	0.120[a] 5	α(K)=0.0112 5; α(L)=0.00227 7; α(M)=0.000533 15; α(N)=0.000130 4; α(O)=2.15×10^{-5} 7 α(P)=1.22×10^{-6} 6 α(K)exp=0.098 5, α(L)exp=0.0179 9 α(M)exp=0.0044 7 (1994Ki01). A_2=−0.02 5, A_4=+0.16 5.
644.8[@] 5	10[@] 3	1515.6	4^+	870.44	2^+	[E2]		0.01252	α(K)=0.00981 14; α(L)=0.00208 3; α(M)=0.000493 7; α(N)=0.0001195 17; α(O)=1.97×10^{-5} 3 α(P)=1.051×10^{-6} 15 E_γ: 1994Ki01 report observation of a 4^+ level at 1515, however, no depopulating transitions from such a level are given in their Table 5.
684.9[@] 4	7.6[@] 7	1515.6	4^+	831.00	2^+	[E2]		0.01095	α(K)=0.00864 13; α(L)=0.001773 25; α(M)=0.000418 6; α(N)=0.0001014 15 α(O)=1.678×10^{-5} 24; α(P)=9.27×10^{-7} 13 E_γ: 1994Ki01 report observation of a 4^+ level at 1515, however, no depopulating transitions from such a level are given in their Table 5.
698.9 2	22.1 11	831.00	2^+	132.1	2^+	E0+M1+E2	<−9	0.0498[a] 22	α(K)=0.016 8; α(L)=0.0027 10; α(M)=0.00061 22; α(N)=0.00015 6; α(O)=2.5×10^{-5} 10

$^{180}_{76}$Os$_{104}$-5

γ(^{180}Os) (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ[b]	α	Comments
									α(P)=1.8×10^{-6} 9 α(K)exp=0.0412 14, α(L)exp=0.0070 17 α(M)exp=0.0016 4 (1994Ki01). A_2=+0.02 9, A_4=+0.28 9.
736.3		736.3	0$^+$	0.0	0$^+$	E0			E_γ: from 1994Ki01.
738.2	4.5 4	870.44	2$^+$	132.1	2$^+$	E0+M1+E2	+5.4 +36−17	0.0463[a] 42	α(K)=0.0078 5; α(L)=0.00151 7; α(M)=0.000355 14; α(N)=8.6×10^{-5} 4; α(O)=1.44×10^{-5} 6 α(P)=8.4×10^{-7} 6 α(K)exp=0.041 4, α(L)exp=0.0053 14 (1994Ki01). A_2=−0.18 14, A_4=+0.28 14.
788.3 2	17 3	1196.94	4$^+$	408.65	4$^+$	E0+M1+E2	+1.3 1	0.0154[a] 13	α(K)=0.0104 5; α(L)=0.00176 6; α(M)=0.000407 14; α(N)=9.9×10^{-5} 4; α(O)=1.69×10^{-5} 6 α(P)=1.16×10^{-6} 5 I_γ: weighted average of values from 1994Ki01 and 1992Bo19. Other: Iγ=9.1 9 (1973HaVR). α(K)exp=0.0154 13 (1994Ki01). A_2=−0.15 8, A_4=+0.09 9.
809.0 4	3.2 14	1604.1	5$^-$	795.06	6$^+$	E1+M2	+0.10 4	0.0034 5	α(K)=0.0028 4; α(L)=0.00042 7; α(M)=9.6×10^{-5} 15; α(N)=2.3×10^{-5} 4; α(O)=4.0×10^{-6} 7 α(P)=2.9×10^{-7} 5 α(K)exp=0.015 3 (1994Ki01). A_2=−0.19 15. δ: Other: 0.70 15 from α(K)exp.
831.5[&]	0.8[&] 3	831.00	2$^+$	0.0	0$^+$	[E2]		0.00723	α(K)=0.00582 9; α(L)=0.001085 16; α(M)=0.000253 4; α(N)=6.15×10^{-5} 9; α(O)=1.030×10^{-5} 15 α(P)=6.24×10^{-7} 9
870.5 3	17.6 4	870.44	2$^+$	0.0	0$^+$	E2		0.00657	α(K)=0.00531 8; α(L)=0.000972 14; α(M)=0.000226 4; α(N)=5.50×10^{-5} 8; α(O)=9.23×10^{-6} 13 α(P)=5.70×10^{-7} 8 α(K)exp=0.0052 5 (1994Ki01).
890.7 2	21.0 17	1022.80	3$^+$	132.1	2$^+$	M1+E2	+8.8 +27−17	0.00638 11	α(K)=0.00517 9; α(L)=0.000933 15; α(M)=0.000217 4; α(N)=5.28×10^{-5} 9; α(O)=8.87×10^{-6} 14 α(P)=5.56×10^{-7} 10 α(K)exp=0.0049 3, α(L)exp=0.0008 2 (1994Ki01). A_2=−0.11 6, A_4=−0.11 6. δ: Other: >6 from α(K)exp.
920.9[&]	3.0[&] 2	1052.82	4$^+$	132.1	2$^+$	[E2]		0.00586	α(K)=0.00475 7; α(L)=0.000851 12; α(M)=0.000198 3; α(N)=4.81×10^{-5} 7; α(O)=8.09×10^{-6} 12 α(P)=5.10×10^{-7} 8 A_2=+0.10 25.
967.1[&]	0.45[&] 11	1375.35	3$^-$	408.65	4$^+$	[E1]		0.00207	α(K)=0.001744 25; α(L)=0.000252 4; α(M)=5.70×10^{-5} 8;

$^{180}_{76}$Os$_{104}$-6

$\gamma(^{180}Os)$ (continued)

E_γ[†]	I_γ[‡c]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[b]	α	Comments
									α(N)=1.387×10^{-5} *20*; α(O)=2.38×10^{-6} *4* α(P)=1.753×10^{-7} *25*
969.9[&]	0.25[&] *11*	1379.02	6$^+$	408.65	4$^+$	[E2]		0.00528	α(K)=0.00430 *6*; α(L)=0.000755 *11*; α(M)=0.0001751 *25*; α(N)=4.26×10^{-5} *6* α(O)=7.18×10^{-6} *10*; α(P)=4.61×10^{-7} *7* I_γ: from 1994Ki01. Others: Iγ=7.3 *7* (1973HaVR).
997.0 *4*	5.4 *13*	1405.8	5$^+$	408.65	4$^+$	M1+E2	−2.4 *4*	0.0059 *4*	α(K)=0.0049 *3*; α(L)=0.00082 *4*; α(M)=0.000189 *9*; α(N)=4.60×10^{-5} *23*; α(O)=7.8×10^{-6} *4* α(P)=5.3×10^{-7} *4* α(K)exp≈0.004 (1994Ki01). A_2=−0.36 *19*, A_4=−0.05 *12*.
1064.7 *4*	7.5 *5*	1196.94	4$^+$	132.1	2$^+$	E2		0.00439	α(K)=0.00359 *5*; α(L)=0.000612 *9*; α(M)=0.0001414 *20*; α(N)=3.44×10^{-5} *5*; α(O)=5.83×10^{-6} *9* α(P)=3.85×10^{-7} *6* I_γ: from 1994Ki01. Others: 17 *2* (1992Bo19), 14.4 *14* (1973HaVR). α(K)exp=0.0032 *3* (1994Ki01). A_2=+0.12 *10*, A_4=+0.04 *11*.
1106.4 *4*	4.6 *4*	1514.98	4$^-$	408.65	4$^+$	E1+M2	+0.17 *+4−0*	0.0022 *3*	α(K)=0.00182 *23*; α(L)=0.00027 *4*; α(M)=6.2×10^{-5} *9*; α(N)=1.51×10^{-5} *22*; α(O)=2.6×10^{-6} *4* α(P)=1.9×10^{-7} *3* α(K)exp=0.0025 *11* (1994Ki01). A_2=+0.14 *11*. δ: Other: 0.28 *13* from α(K)exp.
1195.4[&]	0.6[&] *3*	1604.1	5$^-$	408.65	4$^+$	E1(+M2)	+0.1 *3*	0.0016 *21*	α(K)=0.0013 *17*; α(L)=0.0002 *3*; α(M)=4.E−5 *7*; α(N)=1.1×10^{-5} *16*; α(O)=2.E−6 *3* α(P)=1.4×10^{-7} *21* Mult.,δ: from the Adopted Gammas.
1243.0[&]	1.8[&] *1*	1375.35	3$^-$	132.1	2$^+$	[E1]		1.35×10^{-3}	α(K)=0.001113 *16*; α(L)=0.0001589 *23*; α(M)=3.59×10^{-5} *5*; α(N)=8.73×10^{-6} *13* α(O)=1.505×10^{-6} *21*; α(P)=1.126×10^{-7} *16*

[†] Weighted average of values from 1994Ki01, 1992Bo19, and 1973HaVR, uncertainties for 1994Ki01 assumed similar to those of 1992Bo19.

[‡] Weighted average of values from 1994Ki01, 1992Bo19, and 1973HaVR, except where noted.

[#] From conversion electron data in 1994Ki01, except where noted.

[@] From 1992Bo19.

[&] From 1994Ki01.

[a] From sum of α(K)exp, α(L)exp, and α(M)exp.

$\gamma(^{180}$Os) (continued)

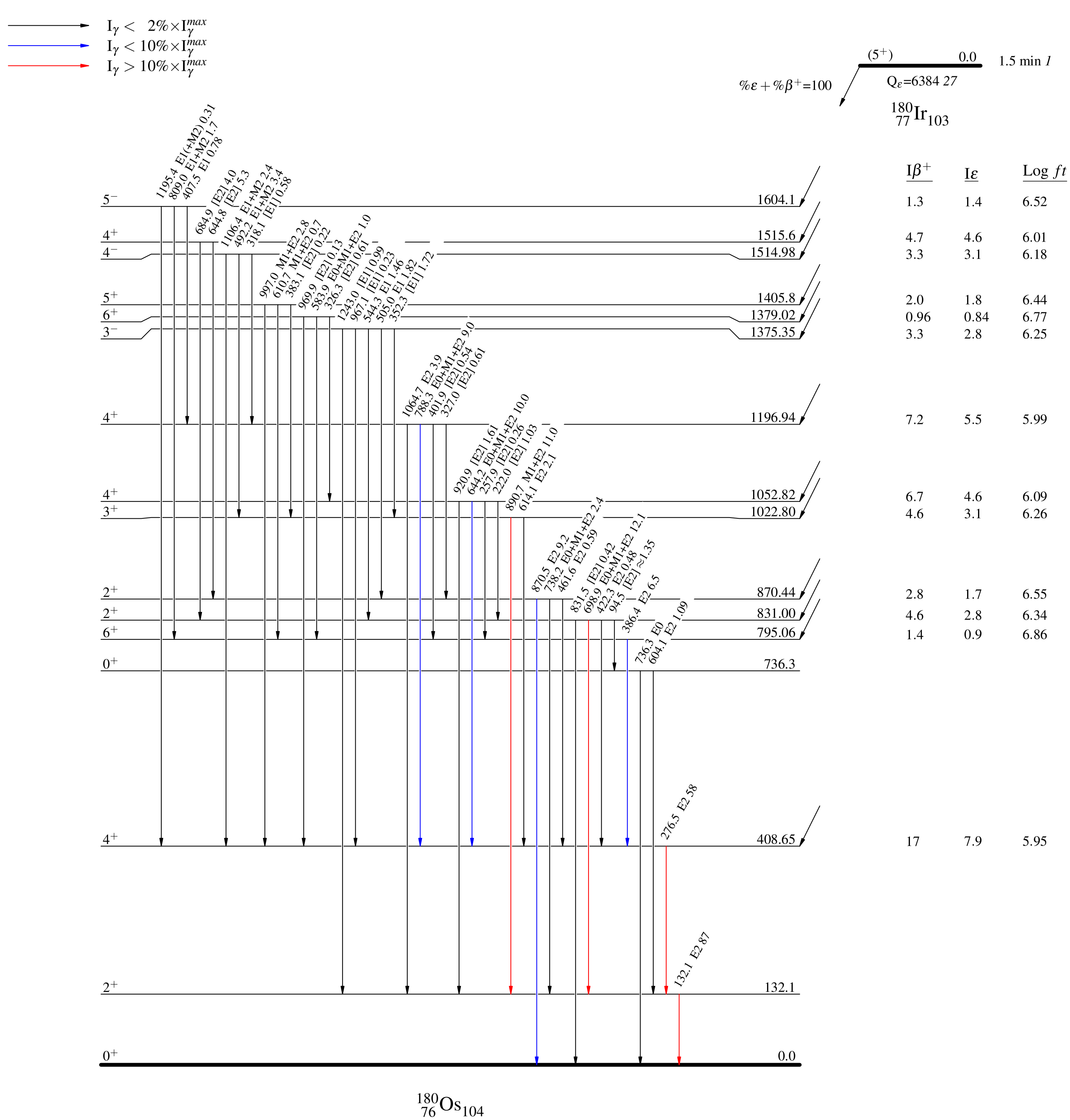
[b] From $\gamma\gamma(\theta)$ in 1994Ki01.
[c] For absolute intensity per 100 decays, multiply by 0.52 *3*.

$^{180}_{76}$Os$_{104}$-8

^{180}Ir ε decay 1994Ki01,1992Bo19,1973HaVR

Decay Scheme

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



^{180}Ir ε decay 1994Ki01,1992Bo19,1973HaVR