Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Achterberg, O. A. Capurro, G. V. Marti	NDS 110,1473 (2009)	31-May-2008

Q(β^-)=−7292 *24*; S(n)=9666 *21*; S(p)=4.56×10^3 *4*; Q(α)=4.26×10^3 *4* 2012Wa38
Note: Current evaluation has used the following Q record −7294 26 *9668* 23 *4570* 30 *4260* 30 2003Au03.
Q(β^+)=2110 *30* keV (2003Au03).
Theoretical references: 2005Mc08, 1997Es01, 1997De21, 1995Ch01, 1991Ba31.

^{178}Os Levels

Levels established from (HI,xnγ) and ^{178}Ir ε decay studies. For discussions regarding band assignments and structures see the individual datasets.

Cross Reference (XREF) Flags

A ^{178}Ir ε decay
B ^{182}Pt α decay
C (HI,xnγ)

E(level)†	J$^\pi$‡	T$_{1/2}$	XREF	Comments
0.0#	0$^+$	5.0 min *4*	ABC	%ε+%β^+=100 %$\alpha\approx$0 T$_{1/2}$: from 1972Be89. %ε+%β adopted from 2003Au02. Quadrupole deformation β_2=0.209 *7* (2005Mo33).
132.20# *17*	2$^+$	0.69 ns *5*	A C	J$^\pi$: E2 132.2 keV γ ray to the 0$^+$ g.s., and E0 component in the 732.2 keV transition from the 2$^+$ 864 keV level. T$_{1/2}$: Average from two methods: a) electronic timing using a pulsed ^{16}O beam on ^{166}Er at 80 MeV, with an 2.6 ns FWHM pulse; b) recoil distance Doppler shift (2005Mo33,2005De48).
398.79# *21*	4$^+$		A C	J$^\pi$: E2 266.6-keV γ ray to the 2$^+$ 132 keV level, and E2 372.1 keV γ ray from the 2$^+$ 772 keV level. Rotational g.s. band level sequence indicates J^π=4$^+$.
650.5e *4*	0$^+$		A	This level proposed as bandhead for a K^π=0$^+$ β rotational band from ^{178}Ir ε decay studies (1994Ki01) (see dataset). J$^\pi$: E2 518.0-keV γ ray to the 2$^+$ 132 keV level. Band-head of the β band suggests J^π=0$^+$.
761.57# *24*	6$^+$		A C	J$^\pi$: E2 362.8 keV γ to the 4$^+$ 399 keV level; rotational band level sequence supports J^π=6$^+$.
770.99e *22*	2$^+$		A	J$^\pi$: E0 component in the 638.8 keV transition to the 2$^+$ 132-keV.
864.35d *21*	2$^+$		A	J$^\pi$: E2 864.4 keV γ ray to the 0$^+$ g.s., and E0 component in the 732.2 keV transition to the 2$^+$ 132 keV level.
1023.17e *25*	4$^+$		A	J$^\pi$: E0 component in the 624.4 keV transition to the 4$^+$ 399 keV level. Agreement with level sequence in β band.
1031.9d *3*	3$^+$		A	J$^\pi$: M1+E2 multipolarities of the 633.0 keV transition to the 4$^+$ 399 keV level, and of the 899.7 keV transition to the 2$^+$ 132 keV level, establish the J^π=3$^+$ value uniquely.
1194.0# *4*	(8$^+$)		A C	J$^\pi$: suggested from g.s. rotational band level membership.
1212.94d *25*	4$^+$		A	J$^\pi$: M1+E2 814.2−keV transition to the 4$^+$ 399 keV level, E2 1080.7 keV transition to the 2$^+$ 132 keV level.
1301.9a *4*	(3$^-$)		A	J$^\pi$: Suggested as band head of a negative parity band (1994Ki01).
1395.7e *4*	6$^+$		A	J$^\pi$: E0 component in 634.4 keV transition to the 6$^+$ 762 keV level, E2 372.6 keV

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Adopted Levels, Gammas (continued)

^{178}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
			transition to the 4^+ 1023 keV level.
1416.4[d] 4	$(5^+,6^+)$	A	Jπ: M1+E2 654.8−keV transition to the 6^+ 762 keV level, and E2 1017.7 keV transition to the 4^+ 399 keV level.
1469.5[b] 4	(4^-)	A C	
1538.8[a] 3	(5^-)	A C	
1682.0[#] 4	(10^+)	C	
1707.0[b] 4	(6^-)	A C	
1781.2[a] 4	(7^-)	A C	
2018.4[b] 5	(8^-)	C	
2096.8[c] 5	(7)	C	
2098.4[a] 4	(9^-)	C	
2219.9[#] 4	(12^+)	C	
2384.4[b] 5	(10^-)	C	
2464.6[c] 6	(9)	C	
2489.0[a] 4	(11^-)	C	
2804.8[#] 5	(14^+)	C	
2817.3[b] 6	(12^-)	C	
2905.9[c] 6	(11)	C	
2950.9[a] 4	(13^-)	C	
3314.8[b] 6	(14^-)	C	
3402.7[c] 7	(13)	C	
3429.4[#] 6	(16^+)	C	
3474.1[a] 5	(15^-)	C	
3506.7[&] 6	(16^+)	C	
3873.2[b] 8	(16^-)	C	
3949.2[c] 8	(15)	C	
4020.1[#] 6	(18^+)	C	
4040.3[a] 6	(17^-)	C	
4140.6[&] 6	(18^+)	C	
4482.9[b] 9	(18^-)	C	
4545.0[c] 9	(17)	C	
4640.8[a] 7	(19^-)	C	
4663.0[#] 7	(20^+)	C	
4862.6[&] 7	(20^+)	C	
5130.0[b] 9	(20^-)	C	
5188.4[c] 10	(19)	C	
5291.1[a] 9	(21^-)	C	
5382.2[#] 8	(22^+)	C	
5584.6[&] 8	(22^+)	C	
5877.4[c] 11	(21)	C	
6154.5[#] 9	(24^+)	C	
6958.0[@] 10	(26^+)	C	
7788.0[@] 10	(28^+)	C	
8651.8[@] 10	(30^+)	C	
9552.3[@] 11	(32^+)	C	
10489.1[@] 12	(34^+)	C	

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Adopted Levels, Gammas (continued)

^{178}Os Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
11461.9[@] *13*	(36$^+$)	C	
12470.9[@] *14*	(38$^+$)	C	
13517.9[@] *17*	(40$^+$)	C	
0.0+x[f]	(4$^+$)	C	Additional information 1. See Comment for this level and band in the (HI,xnγ) dataset.
282.7+x[f] *4*	(6$^+$)	C	
646.2+x[f] *5*	(8$^+$)	C	
1081.6+x[f] *6*	(10$^+$)	C	
1585.2+x[f] *7*	(12$^+$)	C	
2153.4+x[f] *9*	(14$^+$)	C	
2775.1+x[f] *9*	(16$^+$)	C	

[†] From least-squares fit to adopted γ-ray energies.
[‡] Assignments are from (HI,xnγ) based mostly on band structure, γ-ray multipolarities, angular distributions, and γ-ray decay patterns, and on ^{178}Ir ε decay.
[#] Band(A): $K^\pi=0^+$ gs. (yrast) Rotational band.
[@] Band(B): Band on 6958. Rotational band (1988Bu19).
[&] Band(C): "Yrare" sideband. Sideband of the g.s. rotational band (1980Dr10).
[a] Band(D): π=−. Rotational band (Band I, 1982Dr03).
[b] Band(E): π=−. Rotational band (Band II, 1982Dr03).
[c] Band(F): Band on 2097. Rotational band (Band III, 1982Dr03).
[d] Band(G): $K^\pi=2^+$. Quasi γ rotational band (1994Ki01).
[e] Band(H): $K^\pi=0^+$. Quasi β rotational band (1994Ki01) This band established only from ^{178}Ir ε decay (1994Ki01).
[f] Band(I): Tentative β band (1982Dr03).

Adopted Levels, Gammas (continued)

$\gamma(^{178}Os)$

Q_t values for several transitions have been read by evaluators from the plot in Fig. 5, 2005De48.
See Comments column for data and references justifying the adopted multipolarities.

E_i(level)	J_i^π	E_γ †	I_γ @	E_f	J_f^π	Mult.	δ	α &	Comments
132.20	2^+	132.1 *2*	100	0.0	0^+	E2		1.464	B(E2)(W.u.)=139 *11* From the half-life measurements for the 132-keV level 2005Mo33 estimate a B(E2)=0.82 *6* e^2b^2. $Q_t(2^+)$=6.4 *3* eb (2005De48). Mult.: A_2=0.18 *4*, A_4=−0.05 *6* (1982Dr03). α_L(exp)=0.72 *5*, α_M(exp)=0.18 *1* (1994Ki01), theory: α_L(E2)=0.746 *11*, α_M(E2)=0.190 *3*.
398.79	4^+	266.5 *2*	100	132.20	2^+	E2		0.1309	Mult.: A_2=0.222 *7*, A_4=−0.09 *1* (1982Dr03). α_K(exp)=0.079 *3*, α_L(exp)=0.037 *3*, α_M(exp)=0.0094 *9* (1994Ki01). 1982Dr03 report α_L(exp)≈0.029, theory: α_K=0.0801 *12*, α_L=0.0385 *6*, α_M=0.00958 *14*. $Q_t(4^+)$=6.9 *2* eb (2005De48).
650.5	0^+	518.0‡ *5*	100	132.20	2^+	(E2)		0.0209	Mult.: A_2=+0.2 *1*, A_4=+0.85 *18* (1994Ki01).
		(650.4‡ *10*)		0.0	0^+	(E0)			No γ ray reported. See Comment in ^{178}Ir ε decay dataset.
761.57	6^+	362.8 *2*	100	398.79	4^+	E2		0.0528	Mult.: Values for the (362.7γ+363.5γ) combination: A_2=0.242 *7*, A_4=−0.08 *1* (1982Dr03). α_K(exp)=0.036 *2*, α_L(exp)=0.014 *2* (1994Ki01). 1982Dr03 report α_K(exp)=0.040 *7*, α_L(exp)=0.019 *5*, theory: α_K=0.0366 *6*, α_L=0.01234 *18*. $Q_t(6^+)$=7.4 *3* eb (2005De48).
770.99	2^+	120.3‡ *4*	6 *2*	650.5	0^+				
		372.1‡ *4*	14 *2*	398.79	4^+	E2		0.0493	Unresolved doublet. Other component is 372.6 kev deexciting the 1396 keV level. Mult.: Values for combined 372.1 and 372.6 γ rays (1994Ki01): A_2=+0.23 *11*, A_4=+0.13 *11*; α_K(exp)(372.1γ + 372.6γ)=0.036 *5*, theory (average): α_K(E2)=0.0344 *5*.
		638.8‡ *3*	100 *4*	132.20	2^+	E0+M1+E2	−6.8 *+11−16*	0.0133 *3*	Mult.,δ: A_2=+0.04 *6*, A_4=+0.29 *9* (1994Ki01). α_K(exp)=0.082 *3*, α_L(exp)=0.0128 *11*, α_M(exp)=0.036 *6* (1994Ki01), theory: α_K=0.01041 *23*, α_L=0.00219 *4*, α_M=0.000517 *9*.
		771.3‡ *4*	10 *4*	0.0	0^+	E2		0.00847	Mult.: transition to the 0^+ g.s.
864.35	2^+	465.4‡ *4*	4.5 *14*	398.79	4^+	(E2)		0.0273	Mult.: transition to the 399 keV 4^+ level.
		732.2‡ *3*	78 *7*	132.20	2^+	E0+M1+E2	+10 *+6−3*	0.00961 *21*	Mult.,δ: A_2=−0.16 *8*, A_4=+0.37 *9* (1994Ki01); α_K(exp)=0.0130 *19* (1994Ki01), theory: α_K=0.00765 *17*.
		864.4‡ *3*	100 *5*	0.0	0^+	E2		0.00667	Mult.: α_K(exp)=0.0061 *8* (1994Ki01), theory: α_K=0.00538 *8*.
1023.17	4^+	252.2‡ *4*	9.2 *18*	770.99	2^+	(E2)		0.1556	Mult.: transition to the 771 keV 2^+ level.

$^{178}_{76}Os_{102}$-4

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	δ	α[&]	Comments
1023.17	4+	261.4[‡] *4*	5.5 *18*	761.57	6+	(E2)		0.139	Mult.: transition to the 762 keV 6+ level.
		624.5 *3*	100 *4*	398.79	4+	E0+M1+E2	−3.1 *+3−3*	0.0157 *5*	This transition observed as member of an unresolved doublet in (HI,xnγ) (1982Dr03). The other component assigned as deexciting the 3429 keV level. Mult.,δ: A_2=+0.00 *4*, A_4=+0.14 *7* (1994Ki01). α_K(exp)=0.097 *4*, α_L(exp)=0.020 *2*, α_M(exp)=0.0053 *9* (1994Ki01), theory: α_K=0.0124 *5*, α_L=0.00252 *6*, α_M=0.000592 *14*. E0 component inferred by 1994Ki01 from their conversion coefficient values. For the unresolved doublet 1982Dr03 obtain A_2=0.18 *2*, A_4=−0.10 *3*, and α_{tot}(exp)=0.017 *2*, theory: α_{tot}(M1+E2)=0.0157.
		891.0[‡] *4*	9.2 *12*	132.20	2+	(E2)		0.00627	Mult.: A_2=+0.10 *12* (1994Ki01). Agreement with transition to the 2+ 132 keV level.
1031.9	3+	633.0[‡] *4*	18 *4*	398.79	4+	M1+E2	−3.5 *+6−7*	0.0148 *8*	Mult.,δ: A_2=+0.23 *12*, A_4=−0.19 *14* (1994Ki01).
		899.7[‡] *3*	100 *2*	132.20	2+	M1+E2	+9.0 *+16−11*	0.00625 *10*	Mult.,δ: A_2=−0.11 *6*, A_4=−0.09 *7* (1994Ki01). α_K(exp)=0.0049 *9* (1994Ki01), theory: a_K=0.00506 *8*.
1194.0	(8+)	432.4 *3*	100	761.57	6+	(E2)		0.0329	Unresolved doublet in singles spectra; the other component has 432.9 keV. Mult.: For the (432.3γ+432.9γ) combination 1982Dr03 quote: A_2=0.28 *1*, A_4=−0.11 *1*; α_K(exp)=0.037 *7*, α_L(exp)=0.007 *3*, theory: α_K(E2)=0.024, α_L(E2)=0.00682. Support from g.s. band membership (1994Ki01); agrees with J^π=6+ for the 762 keV final level. Q_t(8+)=7.8 *3* eb (2005De48).
1212.94	4+	348.6[‡] *3*	14 *4*	864.35	2+	(E2)		0.0591	Mult.: transition to the 864 keV 2+ level.
		451.5[‡] *5*	10 *3*	761.57	6+	(E2)		0.0294	Mult.: transition to the 762 keV 6+ level.
		814.2[‡] *4*	100 *7*	398.79	4+	M1+E2	+2.4 *+0−12*	0.009 *3*	Mult.,δ: A_2=−0.34 *19*, A_4=+0.18 *20* (1994Ki01). α_K(exp)=0.0052 *18* (1994Ki01), theory: α_K(M1+E2)=0.0075 *25*.
		1080.7[‡] *4*	86 *9*	132.20	2+	(E2)		0.00426	Mult.: A_2=+0.11 *16* (1994Ki01).
1301.9	(3−)	270.1[‡] *4*	100 *33*	1031.9	3+				
		903.1[‡] *5*	9.3 *32*	398.79	4+				
1395.7	6+	372.6[‡] *4*	30 *4*	1023.17	4+	E2		0.0491	Mult.: Unresolved doublet. See discussion and data in comments for the 372.1 keV γ ray from the 771 keV level.
		634.4[‡] *4*	100 *8*	761.57	6+	E0+M1+E2	−2.2 *+3−4*	0.0169 *11*	Mult.,δ: A_2=+0.00 *5*, A_4=+0.12 *6* (1994Ki01). α_K(exp)=0.045 *6* (1994Ki01), theory: α_K=0.0135 *10*. Additional information 2.
		996.5[‡] *5*	4.1 *13*	398.79	4+	(E2)		0.00500	Mult.: transition to the 399 keV 4+ level.

$^{178}_{76}Os_{102}$-5

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	δ	α[&]	Comments
1416.4	(5$^+$,6$^+$)	384.5[‡] *5*	7.7 *15*	1031.9	3$^+$				
		654.8[‡] *4*	43 *4*	761.57	6$^+$	M1+E2	−2.3 *+3−3*	0.0154 *9*	Mult.,δ: A_2=+0.23 *9*, A_4=−0.06 *11* (1994Ki01).
		1017.7[‡] *4*	100 *5*	398.79	4$^+$	(E2)		0.00480	Mult.: α_K(exp)=0.004 *1* (1994Ki01), theory: α_K=0.00392 *6*.
1469.5	(4$^-$)	437.6[‡] *4*	47 *12*	1031.9	3$^+$				
		1070.6 *4*	100 *18*	398.79	4$^+$				Mult.: A_2=+0.25 *5*, A_4=−0.02 *5* (1982Dr03).
1538.8	(5$^-$)	237.0 *4*	100 *6*	1301.9	(3$^-$)				
		326.0 *4*	45 *2*	1212.94	4$^+$				
		777.2 *4*	48 *8*	761.57	6$^+$	(E1)		0.00312	Mult.: A_2=−0.17 *8*, A_4=+0.08 *9* (1982Dr03).
		1139.9[a] *4*	4 *2*	398.79	4$^+$				
1682.0	(10$^+$)	488.1 *2*	100	1194.0	(8$^+$)	E2		0.0242	Mult.: A_2=0.264 *8*, A_4=−0.11 *1* (1982Dr03). α_K(exp)=0.020 *3*, α_L(exp)=0.005 *2* (1982Dr03), theory: α_K=0.0181, α_L=0.00466. Q_t(10$^+$)=8.2 *6* eb (2005De48).
1707.0	(6$^-$)	237.2 *4*	70 *11*	1469.5	(4$^-$)				
		945.6 *4*	100 *8*	761.57	6$^+$	(E1)		0.00216	Mult.: A_2=+0.31 *2*, A_4=−0.01 *3* (1982Dr03). α_{tot}(exp)=0.002 *3* (1982Dr03). theory: α_{tot}(E1)=0.0022. See also note for this transition in the (HI,xnγ) dataset.
1781.2	(7$^-$)	242.5 *3*	43 *5*	1538.8	(5$^-$)				
		587.2 *3*	100 *8*	1194.0	(8$^+$)	(E1)		0.00547	Mult.: A_2=−0.32 *4*, A_4=+0.00 *4* (1982Dr03). See also comment for the 584.9 keV γ regarding α values.
		1019.5 *4*	24.7 *22*	761.57	6$^+$	(E1)		0.00188	Mult.: A_2=−0.10 *8* (1982Dr03).
2018.4	(8$^-$)	311.5 *2*	100	1707.0	(6$^-$)				
2096.8	(7)	389.8 *4*	100	1707.0	(6$^-$)				
2098.4	(9$^-$)	317.1 *2*	100 *5*	1781.2	(7$^-$)	(E2)		0.0776	Mult.: A_2=0.31 *2*, A_4=−0.11 *2* (1982Dr03).
		416.4 *4*	11 *4*	1682.0	(10$^+$)	(E1)		0.01144	Mult.: A_2=−0.12 *9* (1982Dr03).
		904.4 *4*	39 *6*	1194.0	(8$^+$)	(E1)		0.00234	Mult.: A_2=−0.23 *4*, A_4=−0.03 *4* (1982Dr03). Angular correlation parameter R=1.6 *1* (1988Bu19).
2219.9	(12$^+$)	537.8 *2*	100	1682.0	(10$^+$)	E2		0.0191	Mult.: A_2=0.273 *9*, A_4=−0.112 *11* (1982Dr03). α_K(exp)=0.0135 *15*, α_L(exp)=0.0024 *12* (1982Dr03). theory: α_K(E2)=0.0145, α_L(E2)=0.0035.
2384.4	(10$^-$)	366.0 *2*	100	2018.4	(8$^-$)	E2		0.0516	Mult.: A_2=0.32 *3*, A_4=−0.10 *3* (1982Dr03).
2464.6	(9)	367.8 *4*	100 *50*	2096.8	(7)	E2		0.0509	Mult.: A_2=0.29 *4*, A_4=−0.09 *5* (1982Dr03).
		446.2 *4*	76 *14*	2018.4	(8$^-$)				
2489.0	(11$^-$)	390.6 *2*	100 *5*	2098.4	(9$^-$)	(E2)		0.0431	Mult.: A_2=0.29 *2*, A_4=−0.13 *2* (1982Dr03).
		807.0 *4*	10.5 *20*	1682.0	(10$^+$)	(E1)		0.00291	Mult.: A_2=−0.27 *10* (1982Dr03).
2804.8	(14$^+$)	584.9 *2*	100	2219.9	(12$^+$)	E2		0.01565	Mult.: A_2=0.30 *2*, A_4=−0.14 *3* (1982Dr03). Experimental α values for the unresolved (584.9γ+587.0γ) combination: α_K(exp)=0.0120 *2*, α_L(exp)=0.0023 *12* (1982Dr03), theory: α_K(E2)=0.0121, α_L(E2)=0.00273.
2817.3	(12$^-$)	432.9 *3*	100	2384.4	(10$^-$)	(E2)		0.0328	Unresolved doublet in singles spectra: the other component is Eγ=432.3 keV. See Comment for the 432.3 keV γ deexciting the 1193 keV level for angular distribution and α data.

$^{178}_{76}Os_{102}$-6

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	α[&]	Comments
2905.9	(11)	441.3 *3*	100	2464.6	(9)			
2950.9	(13$^-$)	462.0 *2*	100 *7*	2489.0	(11$^-$)	(E2)	0.0278	Mult.: A_2=0.27 *2*, A_4=−0.11 *2* (1982Dr03).
		731.0 *4*	17 *4*	2219.9	(12$^+$)			
3314.8	(14$^-$)	497.5 *2*	100	2817.3	(12$^-$)	(E2)	0.0231	Mult.: A_2=0.22 *3*, A_4=−0.12 *3* (1982Dr03).
3402.7	(13)	496.8 *3*	100	2905.9	(11)			
3429.4	(16$^+$)	624.6 *3*	100	2804.8	(14$^+$)	(M1+E2)	0.025 *12*	Unresolved doublet, second component not placed in the level scheme. Mult.: For this unresolved doublet 1982Dr03 quote: A_2=0.18 *2*, A_4=−0.10 *3*; α_K(exp)=0.017 *2*, theory: α_K(E2)=0.0105, α_K(M1)=0.0299.
3474.1	(15$^-$)	523.2 *3*	100	2950.9	(13$^-$)	E2	0.0204	Mult.: A_2=0.29 *3*, A_4=−0.11 *3* (1982Dr03).
3506.7	(16$^+$)	701.9 *4*	100	2804.8	(14$^+$)	E2	0.01037	Mult.: A_2=0.33 *7*, A_4=−0.15 *8* (1982Dr03).
3873.2	(16$^-$)	558.4 *4*	100	3314.8	(14$^-$)	E2	0.01745	Mult.: A_2=0.30 *5*, A_4=−0.14 *6* (1982Dr03).
3949.2	(15)	546.5 *4*	100	3402.7	(13)	(E2)	0.0184	Mult.: A_2=0.21 *6*, A_4=−0.08 *7* (1982Dr03).
4020.1	(18$^+$)	513.4 *4*	58 *11*	3506.7	(16$^+$)			
		590.8 *4*	100 *7*	3429.4	(16$^+$)	(E2)	0.01529	Mult.: A_2=0.22 *6*, A_4=−0.12 *7* (1982Dr03). α_{tot}(exp)<0.015 (1982Dr03), theory: α_{tot}(E2)=0.0153.
4040.3	(17$^-$)	566.2 *3*	100	3474.1	(15$^-$)	(E2)	0.01689	Mult.: A_2=0.22 *3*, A_4=−0.08 *3* (1982Dr03).
4140.6	(18$^+$)	633.9 *4*	35 *10*	3506.7	(16$^+$)			
		711.2 *4*	100 *10*	3429.4	(16$^+$)	(E2)	0.01008	Mult.: A_2=0.39 *7*, A_4=−0.10 *8* (1982Dr03).
4482.9	(18$^-$)	609.7 *4*	100	3873.2	(16$^-$)	(E2)	0.01422	Mult.: A_2=0.25 *5*, A_4=−0.11 *6* (1982Dr03).
4545.0	(17)	595.8 *4*	100	3949.2	(15)			
4640.8	(19$^-$)	600.5 *4*	100	4040.3	(17$^-$)	(E2)	0.01472	Mult.: A_2=0.24 *4*, A_4=−0.08 *5* (1982Dr03).
4663.0	(20$^+$)	642.9 *4*	100	4020.1	(18$^+$)	(E2)	0.01260	Mult.: A_2=0.19 *5*, A_4=−0.12 *6* (1982Dr03).
4862.6	(20$^+$)	722.0 *4*	100	4140.6	(18$^+$)			
5130.0	(20$^-$)	647.0 *4*	100	4482.9	(18$^-$)	(E2)	0.01243	Mult.: A_2=0.21 *13* (1982Dr03).
5188.4	(19)	643.4 *4*	100	4545.0	(17)			
5291.1	(21$^-$)	650.3 *4*	100	4640.8	(19$^-$)			
5382.2	(22$^+$)	719.2 *4*	100	4663.0	(20$^+$)	(E2)	0.00984	Mult.: Angular correlation parameter R=1.0 *1* (1988Bu19).
5584.6	(22$^+$)	722.0 *4*	100	4862.6	(20$^+$)			
5877.4	(21)	689.0 *4*	100	5188.4	(19)			Mult.: α_{tot}(exp)>0.09 (1982Dr03), theory: α_{tot}(M1)=0.0289, α_{tot}(E2)=0.0108. See note for this transition in the (HI,xnγ) dataset.
6154.5	(24$^+$)	772.3 *4*	100	5382.2	(22$^+$)	(E2)	0.00844	Mult.: Angular correlation parameter R=0.9 *1* (1988Bu19).
6958.0	(26$^+$)	803.5[#] *2*	100	6154.5	(24$^+$)	(E2)	0.00776	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
7788.0	(28$^+$)	830.0[#] *2*	100	6958.0	(26$^+$)	(E2)	0.00725	Mult.: Angular correlation parameter R=1.0 *1* (1988Bu19).
8651.8	(30$^+$)	863.8[#] *3*	100	7788.0	(28$^+$)	(E2)	0.00668	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
9552.3	(32$^+$)	900.5[#] *4*	100	8651.8	(30$^+$)	(E2)	0.00613	Mult.: Angular correlation parameter R=1.1 *1* (1988Bu19).
10489.1	(34$^+$)	936.8[#] *4*	100	9552.3	(32$^+$)	(E2)	0.00566	Mult.: Angular correlation parameter R=0.8 *2* (1988Bu19).
11461.9	(36$^+$)	972.8[#] *5*	100	10489.1	(34$^+$)	(E2)	0.00525	Mult.: Angular correlation parameter R=0.9 *2* (1988Bu19).
12470.9	(38$^+$)	1009.0[#] *6*	100	11461.9	(36$^+$)			
13517.9	(40$^+$)	1047.0[#] *10*	100	12470.9	(38$^+$)			
282.7+x	(6$^+$)	282.7 *4*	100	0.0+x	(4$^+$)			

$^{178}_{76}Os_{102}$-7

Adopted Levels, Gammas (continued)

γ(^{178}Os) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[@]	E_f	J_f^π	Mult.	α[&]	Comments
646.2+x	(8$^+$)	363.5 *3*	100	282.7+x	(6$^+$)	(E2)	0.0525	Mult.: See Comment for the 362.7-keV γ ray for justification of the suggested multipolarity.
1081.6+x	(10$^+$)	435.4 *3*	100	646.2+x	(8$^+$)	(E2)	0.0323	Mult.: A_2=0.43 *10*, A_4=−0.09 *11* (1982Dr03).
1585.2+x	(12$^+$)	503.6 *4*	100	1081.6+x	(10$^+$)	(E2)	0.0224	Mult.: A_2=0.35 *4*, A_4=−0.13 *5* (1982Dr03).
2153.4+x	(14$^+$)	568.2 *4*	100	1585.2+x	(12$^+$)	(E2)	0.01675	Mult.: A_2=0.35 *6*, A_4=−0.24 *8* (1982Dr03).
2775.1+x	(16$^+$)	621.7 *4*	100	2153.4+x	(14$^+$)			

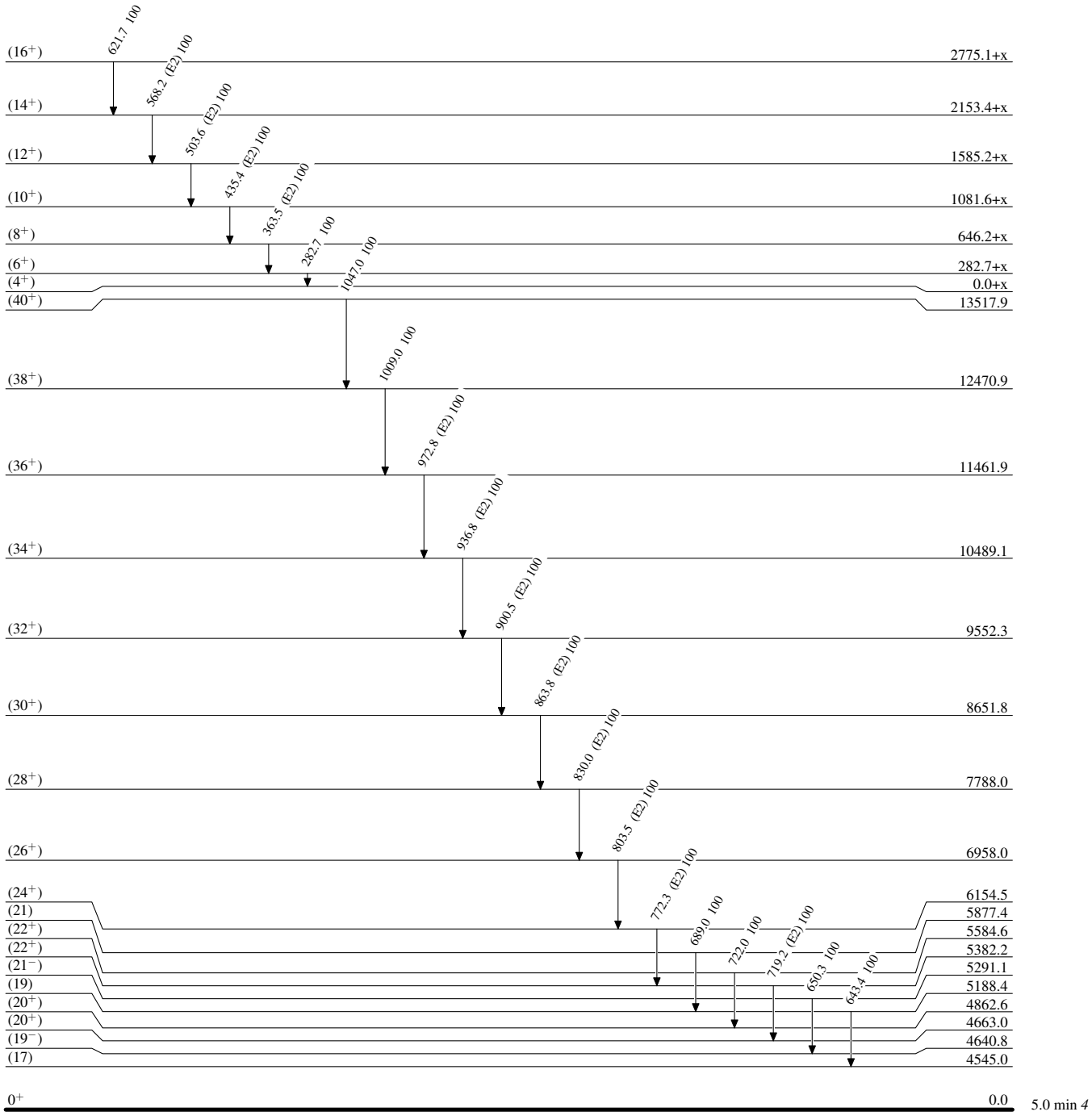
[†] From average of (HI,xnγ) and ^{178}Ir ε decay data, when both available; else 1982Dr03 HI reaction data, unless otherwise specified.
[‡] From ^{178}Ir ε decay (1994Ki01).
[#] From ^{154}Sm(^{29}Si,5nγ) (1988Bu19).
[@] From (HI,xnγ), or from ^{178}Ir ε decay study, when the former did not provide values.
[&] 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.
[a] Placement of transition in the level scheme is uncertain.

$^{178}_{76}Os_{102}$-8

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

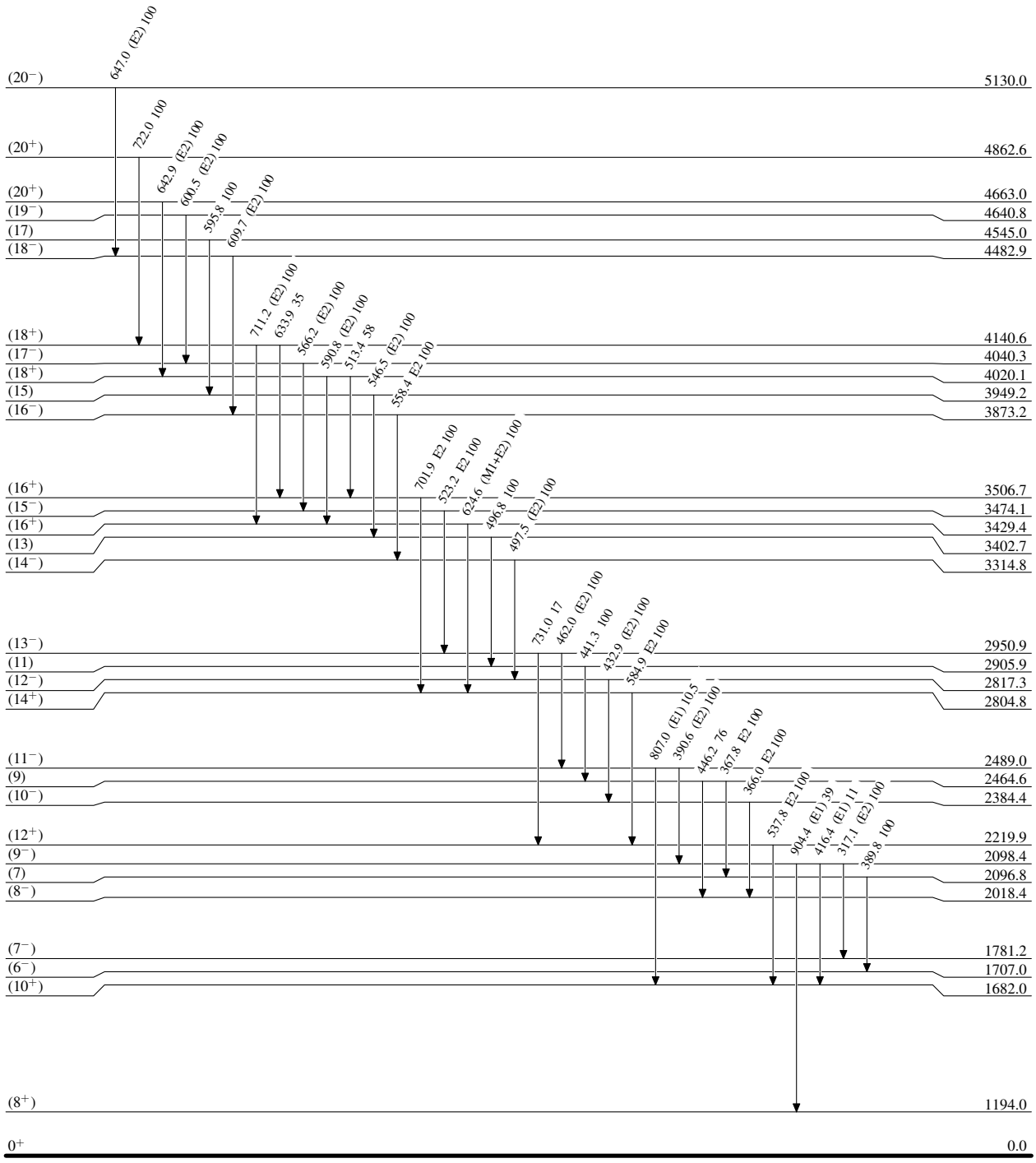


$^{178}_{76}Os_{102}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{178}_{76}Os_{102}$

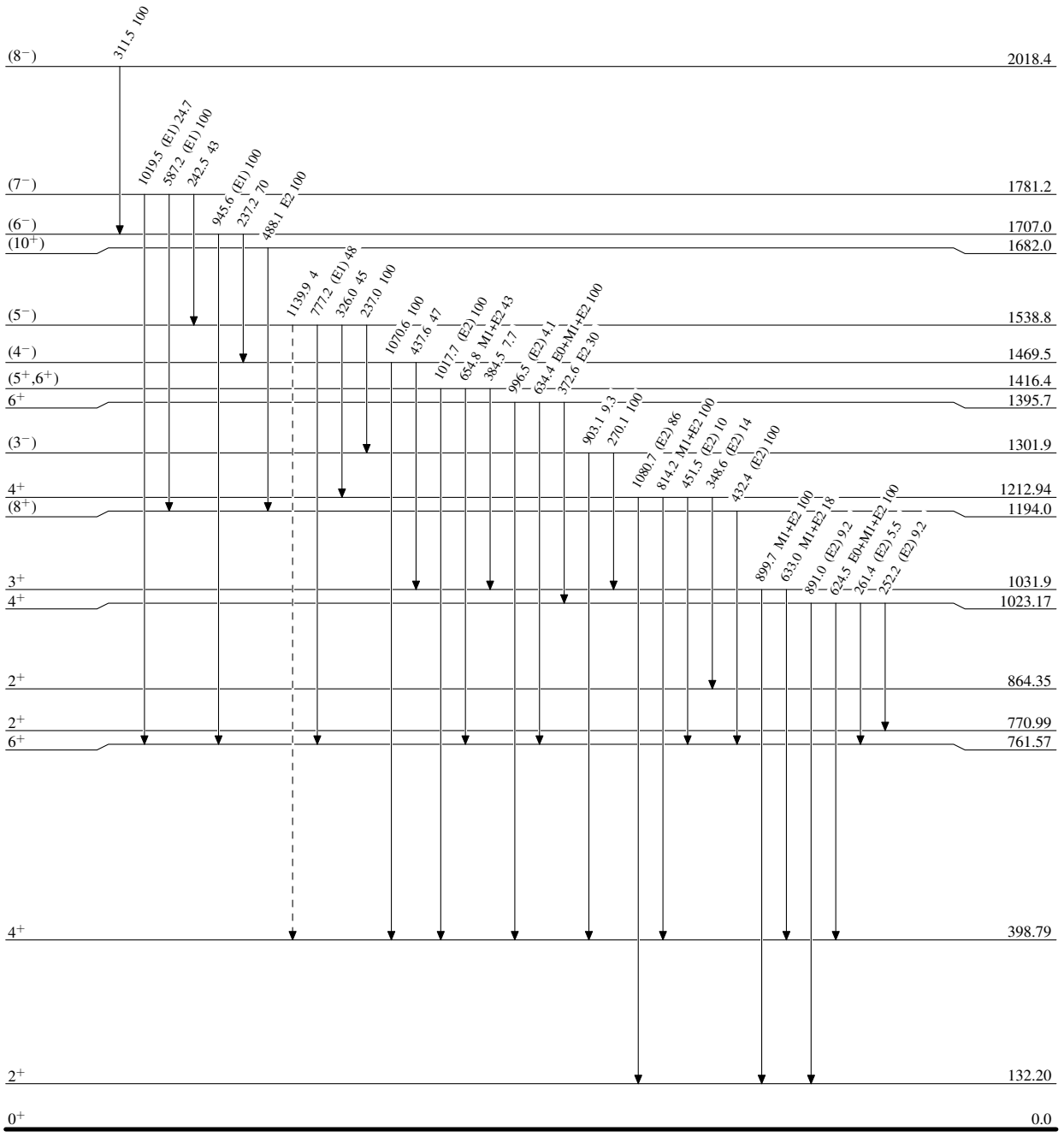
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{178}_{76}Os_{102}$

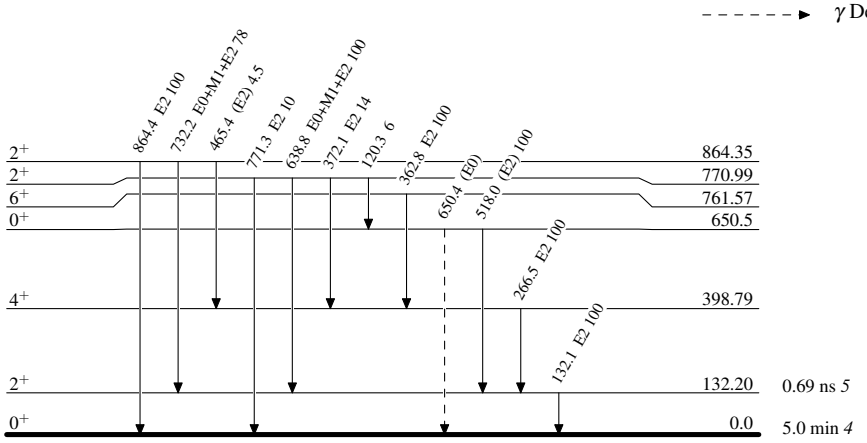
Adopted Levels, Gammas

Legend

Level Scheme (continued)

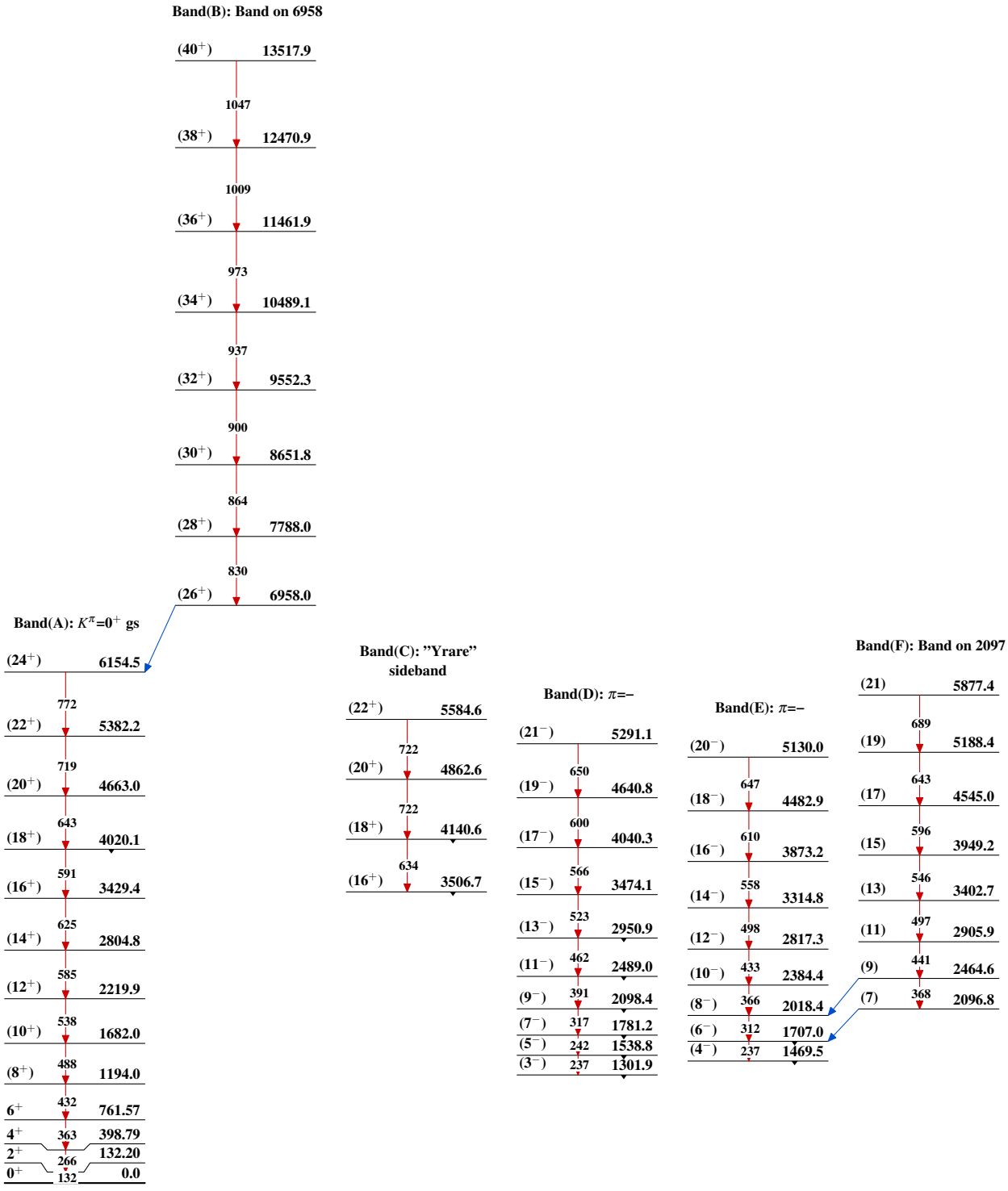
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



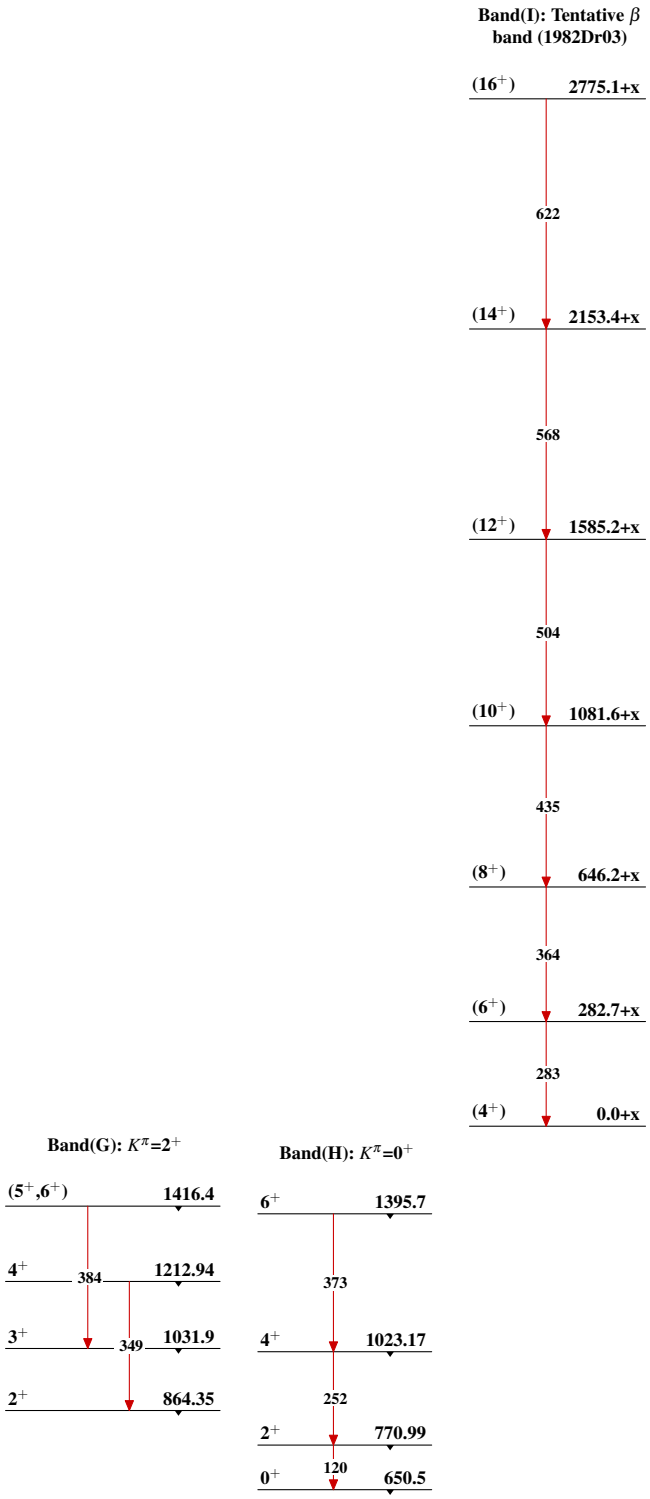
$^{178}_{76}Os_{102}$

Adopted Levels, Gammas



$^{178}_{76}Os_{102}$

Adopted Levels, Gammas (continued)



$^{178}_{76}Os_{102}$