Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	S. Kumar(a), J. Chen(b) and F. G. Kondev	NDS 137, 1 (2016)	31-May-2016

Q(β^-)=2607 *4*; S(n)=8039 *15*; S(p)=8630 *10*; Q(α)=−513.0×10^1 *4* 2012Wa38

^{109}Rh Levels

Cross Reference (XREF) Flags

- A ^{109}Ru β^- decay
- B (HI,xnγ)
- C ^{110}Pd(pol t,α) E=17 MeV
- D ^{110}Pd(d,^{3}He)

E(level)†	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0#	7/2$^+$	80.8 s *7*	ABCD	%β^-=100 J$^\pi$: L(pol t,α)=4 and L-1/2 from analyzing power fits. T$_{1/2}$: weighted average of 80 s *2* (using β(t), 326.8γ(t), 426.1γ(t) in 1978Ka10), 79.8 s *10* (using 178.0γ(t), 291.4γ(t), 326.7γ(t), 426.1γ(t) in 1978Fr16 1976KaYO), 82 s *1* (using strong γ(t) in 1977Ba57), 81.2 s *29* (using 326γ(t) in 1969WiZX); Other: 114 s (using 326γ(t) in 1975Fe12). configuration: K$^\pi$=7/2$^+$, π7/2[413] Nilsson orbital.
206.250# *20*	9/2$^+$	<41 ps	ABCD	J$^\pi$: L(pol t,α)=4 and L+1/2 transfer from analyzing power fits; 206.29γ M1 to 7/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay); Other: < 0.5 ns using β-206γ(t) in 1998Lh02 (^{109}Ru β^- decay, centroid shift method).
225.873& *19*	3/2$^+$	1.66 μs *4*	AB	J$^\pi$: 225.98γ E2 to 7/2$^+$, 148.12γ from 1/2$^-$. T$_{1/2}$: from (116γ)(226γ)(t) in 1987Ka29 (^{109}Ru β^- decay, slope method). configuration: K$^\pi$=1/2$^+$, π1/2[431] Nilsson orbital.
257.66 *3*	(3/2)$^+$	28.7 ns *15*	AB	J$^\pi$: 31.80γ M1+E2 to 3/2$^+$, 220.64γ M1+E2 from 5/2$^+$. T$_{1/2}$: from (221γ)(32γ)(t) in 1987Ka29 (^{109}Ru β^- decay, slope method).
358.584 *16*	3/2$^+$	114.4 ps *13*	A	J$^\pi$: 358.79γ E2 to 7/2$^+$, 101.1γ to 1/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay); Other: < 0.5 NS from β-359γ(t) in 1998Lh02 (^{109}Ru β^- decay, centroid shift method).
373.99@ *3*	1/2$^-$	33.5 ns *14*	ABCD	J$^\pi$: L(pol t,α)=1 and L-1/2 transfer from analyzing power fits. T$_{1/2}$: weighted average of 33 ns *2* from (194γ)(116γ)(t) in 1987Ka29 (^{109}Ru β^- decay, slope method) and 34 ns *2* from β-374γ(t) in 1998Lh02 (^{109}Ru β^- decay, slope method). configuration: K$^\pi$=1/2$^-$, π1/2[301] Nilsson orbital.
409.74& *3*	7/2$^+$	0.49 ns *3*	AB	J$^\pi$: 183.85γ E2 to 3/2$^+$, 203.6γ to 9/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay); Other: 0.43 ns 23 from β-183.85γ(t) in 1998Lh02 (^{109}Ru β^- decay, centroid shift method).
426.759 *19*	5/2$^+$	<53 ps	A CD	XREF: C(424). J$^\pi$: L(d,^{3}He)=2, L(pol t,α)=(2) and L+1/2 transfer from analyzing power fits; 68.07γ M1 to 3/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay); Others:<0.5 ns 427γ(t) in 1998Lh02 (^{109}Ru β^- decay, centroid shift) and 8 ns 1 in 1987Ka29 (^{109}Ru β^- decay, close to timing resolution of Ge(Li) detectors).
478.28 *3*	(5/2)$^+$	174 ps *5*	A	J$^\pi$: 252.45γ to 3/2$^+$ and 272.1γ to 9/2$^+$, 220.64γ M1+E2 to (3/2)$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay); Other:<0.6 ns from β-221γ(t) in 1998Lh02 (^{109}Ru β^- decay, centroid shift method).
530.66# *7*	11/2$^+$		AB	J$^\pi$: 324.4γ to 9/2$^+$, 530.7γ to 7/2$^+$; band assignment.
568.10@ *4*	3/2$^-$		A CD	XREF: C(566)D(570).

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Adopted Levels, Gammas (continued)

^{109}Rh Levels (continued)

E(level)[†]	J^π	$T_{1/2}$	XREF	Comments
				J^π: L(pol t,α)=(1) and L+1/2 transfer from analyzing power fit, L(d,^{3}He)=1; band assignment. $T_{1/2}$: < 0.83 PS from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay), but BM1(W.u.)>3.4 exceeds RUL(IV)=3.
623.12[@] *4*	$5/2^-$	223 ps *8*	AB D	J^π: 55.01γ to $3/2^-$, 249.2γ to $1/2^-$; systematics and analogy of decay patterns with ^{103,105,107}Rh. L=(1+3) in (d,^{3}He), but authors suggested that L=1 component is probably due to the tail of strong 540 peak; band assignment. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
641.98[a] *5*	$(11/2^+)$		AB	J^π: 435.72γ to $9/2^+$; band assignment. configuration: Possible $K^\pi=11/2^+$, $\pi 7/2[413]\otimes 2^+$.
671.876 *22*	$(5/2^+)$	<57 ps	A	J^π: 245.09γ (E2) to $5/2^+$, 465.65γ to $9/2^+$; direct feeding in ^{109}Ru β^- decay ($J^\pi=(5/2^+)$). Note, that if 245.09γ is E1+M2, then $J^\pi=7/2^-$ could be also consistent. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
740.80 *4*	$3/2^-$	<57 ps	A CD	XREF: C(743)D(737). J^π: L(pol t,α)=L(d,^{3}He)=1 and L+1/2 transfer from analyzing power fits; 117.67γ to $5/2^-$ and 366.81γ to $1/2^-$. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
745.4[#] *6*	$13/2^+$		B	J^π: 215γ to $11/2^+$, 539γ to $9/2^+$; band assignment.
767.7[&] *10*	$(11/2^+)$		B	J^π: 358γ to $7/2^+$; band assignment.
855.99 *4*	$5/2^-$	<51 ps	A CD	XREF: C(852)D(856). J^π: L(pol t,α)=(d,^{3}He)=3 and L-1/2 transfer from analyzing power fits, 482.0γ to $1/2^-$. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
861.00 *8*	$(9/2^+)$		A	J^π: 382.8γ to $(5/2)^+$, 451.2γ to $7/2^+$, 860.09γ to $7/2^+$. Not populated in β^- decay ($J^\pi=(5/2^+)$).
890.23 *4*	$(9/2^+)$		A	J^π: 890.3γ to $7/2^+$, 684.0γ to $9/2^+$, 463.4γ to $5/2^+$. Not populated in β^- decay ($J^\pi=(5/2^+)$).
926.76 *4*	$5/2^-$	107 ps *13*	A CD	XREF: C(923)D(928). J^π: L(pol t,α)=(3) and L-1/2 transfer from analyzing power fits, L(d,^{3}He)=3. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
973.29[@] *19*	$(7/2^-)$		A	J^π: 350.2γ to $5/2^-$, 405.0γ to $3/2^-$;band assignment.
980.71 *4*	(1/2)	<69 ps	A	J^π: 239.90γ to $3/2^-$, 606.7γ to $1/2^-$, 621.9γ to $3/2^+$, no γ to J=5/2, 7/2 and 9/2 levels. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1011.60 *4*	$(3/2)^+$		A cd	XREF: c(1006)d(1017). J^π: L(d,^{3}He)=2 could correspond to both 1011 and 1026 level, 584.8γ to $5/2^+$, 1011.7γ to $7/2^+$, no γ to $9/2^+$.
1026.46 *3*	$(5/2,7/2)^+$	<42 ps	A cd	XREF: c(1006)d(1017). J^π: L(d,^{3}He)=2 could correspond to both 1011 and 1026 level, 820.20γ to $9/2^+$, 800.5γ to $3/2^+$. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1051.20 *5*	$(1/2,3/2,5/2^-)$	27 ps *12*	A	J^π: 310.39γ to $3/2^-$, 677.2γ to $1/2^-$, 692.5γ to $3/2^+$. $T_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1053.26 *4*	$5/2^+,7/2^+$		A	J^π: 827.0γ to $3/2^+$, 847.0γ to $9/2^+$.
1062.1[@] *10*	$(9/2^-)$		B	J^π: 439γ to $5/2^-$; band assignment.
1073.1[a] *7*	$(13/2^+)$		B	J^π: 431γ to $(11/2^+)$; band assignment.
1096.25 *4*	$(9/2)^+$		A CD	XREF: C(1091)D(1097). J^π: L(pol t,α)=L(d,^{3}He)=4 and L+1/2 transfer from analyzing power fits; 454.6γ to $(11/2^+)$, 1096.30γ to $7/2^+$; Not populated in β^- decay ($J^\pi=(5/2^+)$).
1162.19 *19*	$(3/2^-)$		A CD	XREF: C(1162)D(1155).

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Adopted Levels, Gammas (continued)

^{109}Rh Levels (continued)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
				J$^\pi$: L(pol t,α)=(1) and L+1/2 transfer from analyzing power fits.
1176.97 *11*	3/2$^+$,5/2,7/2$^+$		A	J$^\pi$: 750.2γ to 5/2$^+$, 818.3γ to 3/2$^+$, 1177.0γ to 7/2$^+$, direct feeding from (5/2$^+$) in ^{109}Ru β^- decay.
1202.6[#] *7*	(15/2$^+$)		B	J$^\pi$: 457γ to (13/2$^+$), 672γ to (11/2$^+$); band assignment.
1214.19 *16*	(3/2)$^-$		A CD	XREF: C(1207)D(1220).
				J$^\pi$: L(d,^{3}He)=1, L(pol t,α)=(1) and L+1/2 transfer from analyzing power fits.
1229.48 *7*	(7/2$^+$)		A	J$^\pi$: 699.0γ to (11/2$^+$), 802.7γ to 5/2$^+$, direct feeding in ^{109}Ru β^- decay (J$^\pi$=5/2$^+$).
1283.86 *6*	(7/2$^-$)		A CD	XREF: C(1272).
				J$^\pi$: L(pol t,α)=(3); 1077.6γ to 9/2$^+$.
1291.7[&] *15*	(15/2$^+$)		B	J$^\pi$: 524γ to (11/2$^+$); band assignment.
1310.72 *3*	(3/2$^+$)	54 ps *10*	A	J$^\pi$: 638.9γ to (7/2)$^+$, 952.00γ to 3/2$^+$, no γ to 9/2$^+$.
				T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1331[‡] *10*	(5/2)$^+$		CD	XREF: D(1339).
				J$^\pi$: L(d,^{3}He)=2, L(pol t,α)=2 and L+1/2 transfer from analyzing power fits.
1412.53 *9*	(1/2$^+$)		A	J$^\pi$: 985.8γ to 5/2$^+$, 1054.0γ to 3/2$^+$, no γ's to J=7/2 and 9/2; Not populated in β^- decay (J$^\pi$=(5/2$^+$)).
1430 *10*			C	
1444.5[#] *9*	(17/2$^+$)		B	J$^\pi$: 242γ to (15/2$^+$), 699γ to (13/2$^+$); band assignment.
1455.0[a] *7*	(15/2$^+$)		B	J$^\pi$: 382γ to (13/2$^+$), 813γ to (11/2$^+$); band assignment.
1459[‡] *10*	(9/2)$^+$		CD	XREF: D(1457).
				J$^\pi$: L(d,^{3}He)=4, L(pol t,α)=(4) and L+1/2 transfer from analyzing power fits.
1511.512 *25*	7/2$^+$	<23 ps	A	J$^\pi$: 499.94γ to (3/2)$^+$, 869.5γ to (11/2$^+$); strong direct feeding in ^{109}Ru β^- decay (J$^\pi$=from (5/2$^+$)).
				T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1513[‡]	(1/2$^-$)		CD	XREF: D(1522).
				J$^\pi$: L(pol t,α)=(1) and L-1/2 transfer from analyzing power fits.
1576.33 *4*	5/2$^+$,7/2$^+$	<80 ps	A	J$^\pi$: 265.61γ to (3/2$^+$), 480.1γ to 9/2$^+$; direct feeding in ^{109}Ru β^- decay (J$^\pi$=from (5/2$^+$)).
				T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1637.97 *17*	(3/2)$^-$		A CD	XREF: C(1631)D(1627).
				J$^\pi$: L(d,^{3}He)=1; L(pol t,α)=(1,2) and analyzing power.
1652.1[@] *15*	(13/2$^-$)		B	J$^\pi$: 590γ to (9/2$^-$); band assignment.
1676.0[a] *10*	(17/2$^+$)		B	J$^\pi$: 603γ to (13/2$^+$); band assignment.
1753[‡] *10*	1/2$^-$,3/2$^-$		CD	XREF: D(1746).
				J$^\pi$: L(d,^{3}He)=1.
1929.07 *3*	7/2$^+$	<32 ps	A CD	XREF: C(1914)D(1915).
				J$^\pi$: strong direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 1570.4γ to 3/2$^+$, 1287.0γ to (11/2$^+$).
				T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1959.7[&] *18*	(19/2$^+$)		B	J$^\pi$: 668γ to (15/2$^+$); band assignment.
1963.40 *5*	(5/2)$^+$	<32 ps	A D	XREF: D(1953).
				J$^\pi$: strong direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 652.5γ to (3/2$^+$), 1757.1γ to 9/2$^+$; no γ's to 11/2$^+$.
				T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay).
1971.87 *12*	(5/2)$^+$		A	J$^\pi$: direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 960.5 to (3/2)$^+$, 1765.7γ to 9/2$^+$; no γ's to 11/2$^+$.
1975.6[#] *10*	(19/2$^+$)		B	J$^\pi$: 531γ to (17/2$^+$), 773γ to (15/2$^+$); band assignment.
2015.41 *8*	(3/2)		A cD	XREF: c(2019)D(2002).
				J$^\pi$: 1641.5γ to 1/2$^-$, 1588.7γ to 5/2$^+$, no γ to 9/2$^+$; direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2045.54 *15*	(3/2)$^-$		A cD	XREF: c(2019)D(2037).
				J$^\pi$: L=(d,^{3}He)=1, L(pol t,α)=(1), 1567.2γ to (5/2)$^+$.

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Adopted Levels, Gammas (continued)

^{109}Rh Levels (continued)

E(level)[†]	J$^\pi$	T$_{1/2}$	XREF	Comments
2093.91 *4*	(3/2$^+$)	<40 ps	A D	XREF: D(2091). J$^\pi$: strong direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 1720.0γ to 1/2$^-$, 2094.3γ to 7/2$^+$, no γ's to 9/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay);
2098.59 *12*	(5/2$^+$,7/2)		A	J$^\pi$: 1002.5γ to 9/2$^+$; direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$));
2098.9[b] *8*	(17/2$^-$)		B	J$^\pi$: 423γ to (17/2$^+$), 644γ to (15/2$^+$); band assignment.
2117.00 *12*	(3/2$^+$)		A	J$^\pi$: 2117.3γ to 7/2$^+$, 1891.4γ to 3/2$^+$, no γ's to 9/2$^+$ direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$));
2182.87 *10*	(5/2$^+$,7/2)		A	J$^\pi$: 1756.0γ to 5/2$^+$, 1976.6γ to 9/2$^+$, direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$));
2184.72 *7*	(3/2$^+$,5/2)		A	J$^\pi$: direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 1616.5γ to 3/2$^-$, 2184.7γ to 7/2$^+$, no γ's to 1/2 and 9/2$^+$ levels.
2190.50 *7*	(3/2$^+$)	<40 ps	A	J$^\pi$: direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 1816.5γ to 1/2$^-$, 1763γ to 5/2$^+$. T$_{1/2}$: from $\beta\gamma\gamma$(t) in 2011BuZZ (^{109}Ru β^- decay);
2193.74 *11*	(3/2$^+$,5/2)		A	J$^\pi$: direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)); 1767.0γ to 5/2$^+$, 2193.8γ to 7/2$^+$, no γ's to 1/2 and 9/2$^+$ levels.
2208.45 *8*	(5/2$^+$,7/2)		A	J$^\pi$: 1585.1γ to 5/2$^-$, 1347.5γ to (9/2$^+$); direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2209.40 *10*	(3/2$^+$,5/2)		A	J$^\pi$: 1537.5γ to (7/2)$^+$, 1850.8γ to 3/2$^+$, no γ's to 1/2 and 9/2$^+$ levels direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2237.92 *10*	(3/2$^+$,5/2)		A	J$^\pi$: 1879.3γ to 3/2$^+$, 1811.4γ to 5/2$^+$; no γ's to 1/2 and 9/2$^+$ levels direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2247.07 *14*	(5/2$^+$,7/2)		A	J$^\pi$: 2040.8γ to 9/2$^+$; direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2250.5[#] *13*	(21/2$^+$)		B	J$^\pi$: 806γ to (17/2$^+$); band assignment.
2270.1 *3*	(5/2$^+$,7/2)		A C	XREF: C(2261). J$^\pi$: 1860.3γ to 7/2$^+$, 2063.8γ to 9/2$^+$; direct feeding in ^{109}Ru β^- decay (J$^\pi$=(5/2$^+$)).
2297.9[b] *13*	(19/2$^-$)		B	J$^\pi$: 199γ to (17/2$^-$); band assignment.
2335.1[@] *18*	(17/2$^-$)		B	J$^\pi$: 316γ to (13/2$^-$); band assignment.
2558.9[b] *17*	(21/2$^-$)		B	J$^\pi$: 261γ to (19/2$^-$); band assignment.
2720.5 *17*			B	
2874.9[b] *20*	(23/2$^-$)		B	J$^\pi$: 316γ to (21/2$^-$); band assignment.
3000.5 *20*			B	
3345.5 *22*			B	

[†] From a least-squares fit to Eγ.
[‡] From ^{110}Pd(pol t,α) E=17 MeV.
[#] Band(A): K$^\pi$=7/2$^+$, π7/2[413] band.
[@] Band(B): K$^\pi$=1/2$^-$, π1/2[301] band.
[&] Band(C): K$^\pi$=1/2$^+$, π1/2[431] band.
[a] Band(D): Possible K$^\pi$=11/2$^+$, π7/2[413]$\otimes$2$^+$ band.
[b] Band(E): Band based on the (17/2$^-$), 2099-keV level (2002Ve08).

Adopted Levels, Gammas (continued)

γ(^{109}Rh)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	δ #	α &	Comments
206.250	9/2$^+$	206.29 *3*	100	0.0	7/2$^+$	M1		0.0476	B(M1)(W.u.)>0.058 α(K)=0.0415 *6*; α(L)=0.00497 *7*; α(M)=0.000924 *13* α(N)=0.0001533 *22*; α(O)=7.73×10^{-6} *11* Mult.: α(K)exp=0.041 *7* (1992PeZX in ^{109}Ru β$^-$ decay).
225.873	3/2$^+$	225.98 *3*	100	0.0	7/2$^+$	E2		0.0741	B(E2)(W.u.)=0.0174 *5* α(K)=0.0628 *9*; α(L)=0.00928 *13*; α(M)=0.001739 *25* α(N)=0.000278 *4*; α(O)=1.029×10^{-5} *15* Mult.: α(K)exp=0.062 *11* (1992PeZX), 0.07 *1* (1987Ka29), and 0.09 *4* (1977Ba57) in ^{109}Ru β$^-$ decay.
257.66	(3/2)$^+$	31.80 *3*	100	225.873	3/2$^+$	M1+E2	0.60 *9*	29 *5*	B(M1)(W.u.)=0.00058 *12*; B(E2)(W.u.)=1.7×10^2 *5* α(K)=13.6 *12*; α(L)=12 *3*; α(M)=2.4 *5* α(N)=0.36 *8*; α(O)=0.00219 *15* Mult.,δ: α(exp)=29 *3* (1987Ka29), α(K)exp=13 *4* (1987Ka29), α(K)exp=17 *+10−6* (1992PeZX) in ^{109}Ru β$^-$ decay.
358.584	3/2$^+$	101.1 *1*	0.18 *5*	257.66	(3/2)$^+$	[M1]		0.333	B(M1)(W.u.)=0.00032 *10* α(K)=0.290 *5*; α(L)=0.0353 *5*; α(M)=0.00658 *10* α(N)=0.001090 *16*; α(O)=5.42×10^{-5} *8*
		132.79 *3*	1.48 *11*	225.873	3/2$^+$	[M1]		0.1560	B(M1)(W.u.)=0.00118 *11* α(K)=0.1359 *19*; α(L)=0.01648 *23*; α(M)=0.00307 *5* α(N)=0.000508 *8*; α(O)=2.54×10^{-5} *4*
		358.429 *21*	100 *5*	0.0	7/2$^+$	E2		0.01573	α(K)=0.01356 *19*; α(L)=0.00179 *3*; α(M)=0.000334 *5* α(N)=5.42×10^{-5} *8*; α(O)=2.32×10^{-6} *4* B(E2)(W.u.)=26.1 *19* E_γ: From 1979Bo26. Mult.: α(K)exp=0.013 *3* (1992PeZX in ^{109}Ru β$^-$ decay).
373.99	1/2$^-$	116.32 *3*	100 *5*	257.66	(3/2)$^+$	[E1]		0.0945	B(E1)(W.u.)=5.1×10^{-6} *5* α(K)=0.0826 *12*; α(L)=0.00980 *14*; α(M)=0.00181 *3* α(N)=0.000295 *5*; α(O)=1.327×10^{-5} *19*
		148.12 *3*	1.76 *14*	225.873	3/2$^+$	[E1]		0.0472	B(E1)(W.u.)=4.3×10^{-8} *5* α(K)=0.0413 *6*; α(L)=0.00486 *7*; α(M)=0.000896 *13* α(N)=0.0001466 *21*; α(O)=6.78×10^{-6} *10*
409.74	7/2$^+$	183.85 *3*	100 *5*	225.873	3/2$^+$	E2		0.1530	B(E2)(W.u.)=131 *12* α(K)=0.1282 *18*; α(L)=0.0204 *3*; α(M)=0.00383 *6* α(N)=0.000608 *9*; α(O)=2.05×10^{-5} *3* Mult.: α(K)exp=0.13 *3* (1992PeZX in ^{109}Ru β$^-$ decay).
		203.6 *1*	6.3 *13*	206.250	9/2$^+$	[M1]		0.0492	B(M1)(W.u.)=0.00025 *6* α(K)=0.0430 *6*; α(L)=0.00515 *8*; α(M)=0.000957 *14* α(N)=0.0001588 *23*; α(O)=8.01×10^{-6} *12*
		409.7 *1*	13.8 *13*	0.0	7/2$^+$	[M1]		0.00826	B(M1)(W.u.)=6.6×10^{-5} *8* α(K)=0.00723 *11*; α(L)=0.000848 *12*; α(M)=0.0001573 *22* α(N)=2.61×10^{-5} *4*; α(O)=1.336×10^{-6} *19*
426.759	5/2$^+$	68.07 *3*	28.1 *15*	358.584	3/2$^+$	M1		1.023	B(M1)(W.u.)>0.22

$^{109}_{45}Rh_{64}$-5

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	δ[#]	α[&]	Comments
									α(K)=0.890 *13*; α(L)=0.1094 *16*; α(M)=0.0204 *3* α(N)=0.00337 *5*; α(O)=0.0001668 *24* Mult.: α(K)exp=0.7 *2* (1992PeZX in ^{109}Ru β^- decay).
426.759	5/2$^+$	200.9 *3*	1.3 *4*	225.873	3/2$^+$	[M1]		0.0510	B(M1)(W.u.)>0.00040 α(K)=0.0445 *7*; α(L)=0.00533 *8*; α(M)=0.000992 *15* α(N)=0.0001646 *24*; α(O)=8.29×10^{-6} *12*
		220.6 *3*	5.7 *7*	206.250	9/2$^+$	[E2]		0.0806	B(E2)(W.u.)>23 α(K)=0.0683 *10*; α(L)=0.01015 *16*; α(M)=0.00190 *3* α(N)=0.000305 *5*; α(O)=1.114×10^{-5} *17*
		426.84 *5*	100 *5*	0.0	7/2$^+$	[M1]		0.00748	B(M1)(W.u.)>0.0032 α(K)=0.00654 *10*; α(L)=0.000766 *11*; α(M)=0.0001421 *20* α(N)=2.36×10^{-5} *4*; α(O)=1.208×10^{-6} *17*
478.28	(5/2)$^+$	119.60 *5*	6.2 *6*	358.584	3/2$^+$	[M1]		0.208	B(M1)(W.u.)=0.0025 *4* α(K)=0.181 *3*; α(L)=0.0220 *3*; α(M)=0.00410 *6* α(N)=0.000680 *10*; α(O)=3.39×10^{-5} *5*
		220.64 *5*	100 *13*	257.66	(3/2)$^+$	M1+E2	1.4 *7*	0.067 *14*	B(M1)(W.u.)=0.0022 *15*; B(E2)(W.u.)=7.E+1 *3* α(K)=0.057 *12*; α(L)=0.0081 *20*; α(M)=0.0015 *4* α(N)=0.00024 *6*; α(O)=9.6×10^{-6} *16* Mult.,δ: α(K)exp=0.057 *11* (1992PeZX in ^{109}Ru β^- decay).
		252.45 *5*	57 *4*	225.873	3/2$^+$	[M1]		0.0280	B(M1)(W.u.)=0.0024 *3* α(K)=0.0245 *4*; α(L)=0.00291 *4*; α(M)=0.000542 *8* α(N)=8.99×10^{-5} *13*; α(O)=4.55×10^{-6} *7*
		272.1 *1*	4.5 *18*	206.250	9/2$^+$	[E2]		0.0392	B(E2)(W.u.)=1.7 *7* α(K)=0.0335 *5*; α(L)=0.00469 *7*; α(M)=0.000877 *13* α(N)=0.0001413 *20*; α(O)=5.59×10^{-6} *8*
		478.4 *1*	6.6 *7*	0.0	7/2$^+$	[M1]		0.00567	B(M1)(W.u.)=4.1×10^{-5} *6* α(K)=0.00496 *7*; α(L)=0.000579 *9*; α(M)=0.0001074 *15* α(N)=1.78×10^{-5} *3*; α(O)=9.15×10^{-7} *13*
530.66	11/2$^+$	324.4 *1*	100 *11*	206.250	9/2$^+$				
		530.7 *1*	26 *3*	0.0	7/2$^+$				
568.10	3/2$^-$	194.10 *5*	100	373.99	1/2$^-$	[M1]		0.0559	α(K)=0.0488 *7*; α(L)=0.00585 *9*; α(M)=0.001088 *16* α(N)=0.000180 *3*; α(O)=9.09×10^{-6} *13*
623.12	5/2$^-$	55.01 *3*	12.9 *11*	568.10	3/2$^-$	[M1]		1.89	B(M1)(W.u.)=0.054 *8* α(K)=1.646 *24*; α(L)=0.203 *3*; α(M)=0.0378 *6* α(N)=0.00625 *9*; α(O)=0.000308 *5*
		249.2 *1*	100 *15*	373.99	1/2$^-$	[E2]		0.0529	B(E2)(W.u.)=60 *12* α(K)=0.0450 *7*; α(L)=0.00646 *9*; α(M)=0.001209 *17* α(N)=0.000194 *3*; α(O)=7.45×10^{-6} *11*
641.98	(11/2$^+$)	435.72 *5*	100 *5*	206.250	9/2$^+$				
671.876	(5/2$^+$)	245.09 *3*	100 *7*	426.759	5/2$^+$	(E2)		0.0560	α(K)=0.0476 *7*; α(L)=0.00686 *10*; α(M)=0.001285 *18* α(N)=0.000206 *3*; α(O)=7.87×10^{-6} *11* B(E2)(W.u.)>1.5×10^2

$^{109}_{45}Rh_{64}$-6

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
								Mult.: from α(K)exp=0.07 *2* (1992PeZX in ^{109}Ru β^- decay), but E1+M2 with δ =1.0 *+4−3* is also possible.
671.876	(5/2$^+$)	465.65 *3*	97 *5*	206.250	9/2$^+$	[E2]	0.00698	α(K)=0.00605 *9*; α(L)=0.000764 *11*; α(M)=0.0001423 *20* α(N)=2.33×10^{-5} *4*; α(O)=1.056×10^{-6} *15* B(E2)(W.u.)>5.9
		671.93 *5*	36 *3*	0.0	7/2$^+$	[M1]	0.00254	α(K)=0.00223 *4*; α(L)=0.000257 *4*; α(M)=4.77×10^{-5} *7* α(N)=7.93×10^{-6} *12*; α(O)=4.09×10^{-7} *6* B(M1)(W.u.)>0.00019
740.80	3/2$^-$	117.67 *5*	3.7 *18*	623.12	5/2$^-$	[M1]	0.218	B(M1)(W.u.)>0.0065 α(K)=0.190 *3*; α(L)=0.0231 *4*; α(M)=0.00429 *6* α(N)=0.000711 *10*; α(O)=3.55×10^{-5} *5*
		172.71 *3*	26.8 *16*	568.10	3/2$^-$	[M1]	0.0763	B(M1)(W.u.)>0.015 α(K)=0.0666 *10*; α(L)=0.00801 *12*; α(M)=0.001491 *21* α(N)=0.000247 *4*; α(O)=1.243×10^{-5} *18*
		366.81 *3*	100 *7*	373.99	1/2$^-$	[M1]	0.01086	B(M1)(W.u.)>0.0058 α(K)=0.00950 *14*; α(L)=0.001117 *16*; α(M)=0.000207 *3* α(N)=3.45×10^{-5} *5*; α(O)=1.758×10^{-6} *25*
745.4	13/2$^+$	215[@] *1*		530.66	11/2$^+$			
		539[@] *1*		206.250	9/2$^+$			
767.7	(11/2$^+$)	358[@] *1*	100[@]	409.74	7/2$^+$			
855.99	5/2$^-$	115.17 *5*	12 *6*	740.80	3/2$^-$	[M1]	0.231	B(M1)(W.u.)>0.017 α(K)=0.201 *3*; α(L)=0.0245 *4*; α(M)=0.00456 *7* α(N)=0.000756 *11*; α(O)=3.77×10^{-5} *6*
		232.87 *3*	100 *7*	623.12	5/2$^-$	[M1]	0.0346	B(M1)(W.u.)>0.017 α(K)=0.0302 *5*; α(L)=0.00360 *5*; α(M)=0.000670 *10* α(N)=0.0001111 *16*; α(O)=5.62×10^{-6} *8*
		287.89 *5*	58 *5*	568.10	3/2$^-$	[M1]	0.0200	B(M1)(W.u.)>0.0053 α(K)=0.01748 *25*; α(L)=0.00207 *3*; α(M)=0.000385 *6* α(N)=6.39×10^{-5} *9*; α(O)=3.24×10^{-6} *5*
		482.0 *1*	20 *20*	373.99	1/2$^-$	[E2]	0.00630	B(E2)(W.u.)>1.4 α(K)=0.00546 *8*; α(L)=0.000687 *10*; α(M)=0.0001278 *18* α(N)=2.09×10^{-5} *3*; α(O)=9.55×10^{-7} *14*
861.00	(9/2$^+$)	382.8 *1*	100 *14*	478.28	(5/2)$^+$	[E2]	0.01276	α(K)=0.01101 *16*; α(L)=0.001436 *21*; α(M)=0.000268 *4* α(N)=4.36×10^{-5} *7*; α(O)=1.90×10^{-6} *3*
		451.2 *2*	23 *5*	409.74	7/2$^+$	[M1]	0.00653	α(K)=0.00572 *8*; α(L)=0.000668 *10*; α(M)=0.0001240 *18* α(N)=2.06×10^{-5} *3*; α(O)=1.055×10^{-6} *15*
		860.9 *3*	14 *4*	0.0	7/2$^+$	[M1]	1.45×10^{-3}	α(K)=0.001269 *18*; α(L)=0.0001456 *21*; α(M)=2.70×10^{-5} *4* α(N)=4.49×10^{-6} *7*; α(O)=2.32×10^{-7} *4*
890.23	(9/2$^+$)	218.36 *5*	16.2 *13*	671.876	(5/2$^+$)			
		463.4 *1*	10 *4*	426.759	5/2$^+$			
		684.0 *1*	9.4 *12*	206.250	9/2$^+$			
		890.3 *3*	100 *10*	0.0	7/2$^+$			

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α&	Comments
926.76	5/2$^-$	185.95 *3*	36 *8*	740.80	3/2$^-$	[M1]	0.0626	B(M1)(W.u.)=0.0053 *16* α(K)=0.0546 *8*; α(L)=0.00656 *10*; α(M)=0.001221 *18* α(N)=0.000203 *3*; α(O)=1.019×10^{-5} *15*
		303.64 *5*	100 *23*	623.12	5/2$^-$	[M1]	0.01747	B(M1)(W.u.)=0.0034 *11* α(K)=0.01527 *22*; α(L)=0.00181 *3*; α(M)=0.000336 *5* α(N)=5.57×10^{-5} *8*; α(O)=2.83×10^{-6} *4*
		358.7 *5*	77 *23*	568.10	3/2$^-$	[M1]	0.01148	B(M1)(W.u.)=0.0016 *6* α(K)=0.01004 *15*; α(L)=0.001182 *17*; α(M)=0.000219 *4* α(N)=3.65×10^{-5} *6*; α(O)=1.86×10^{-6} *3*
973.29	(7/2$^-$)	350.2 *2*	100	623.12	5/2$^-$			
		405.0 *5*	80	568.10	3/2$^-$			
980.71	(1/2)	239.90 *3*	100 *6*	740.80	3/2$^-$			
		606.7 *1*	10 *4*	373.99	1/2$^-$			
		621.9 *3*	44.9 *14*	358.584	3/2$^+$			
		723.0 *2*	9.8 *18*	257.66	(3/2)$^+$			
		754.85 *5*	21.6 *22*	225.873	3/2$^+$			
1011.60	(3/2)$^+$	584.8 *1*	5.5 *7*	426.759	5/2$^+$	[M1]	0.00351	α(K)=0.00308 *5*; α(L)=0.000357 *5*; α(M)=6.62×10^{-5} *10* α(N)=1.101×10^{-5} *16*; α(O)=5.66×10^{-7} *8*
		1011.7 *1*	100 *6*	0.0	7/2$^+$	[E2]	9.19×10^{-4}	α(K)=0.000805 *12*; α(L)=9.39×10^{-5} *14*; α(M)=1.741×10^{-5} *25* α(N)=2.88×10^{-6} *4*; α(O)=1.444×10^{-7} *21*
1026.46	(5/2,7/2)$^+$	354.5 *3*	3.0 *10*	671.876	(5/2$^+$)	[M1]	0.01183	B(M1)(W.u.)>0.00022 α(K)=0.01034 *15*; α(L)=0.001217 *18*; α(M)=0.000226 *4* α(N)=3.76×10^{-5} *6*; α(O)=1.91×10^{-6} *3*
		599.66 *5*	8.3 *6*	426.759	5/2$^+$	[M1]	0.00331	B(M1)(W.u.)>0.00013 α(K)=0.00290 *4*; α(L)=0.000336 *5*; α(M)=6.24×10^{-5} *9* α(N)=1.037×10^{-5} *15*; α(O)=5.34×10^{-7} *8*
		616.7 *1*	5.0 *5*	409.74	7/2$^+$	[M1]	0.00310	B(M1)(W.u.)>6.9×10^{-5} α(K)=0.00272 *4*; α(L)=0.000315 *5*; α(M)=5.84×10^{-5} *9* α(N)=9.70×10^{-6} *14*; α(O)=5.00×10^{-7} *7*
		667.5 *3*	5.8 *6*	358.584	3/2$^+$	[M1,E2]	0.00258	α(K)=0.00226 *4*; α(L)=0.000261 *4*; α(M)=4.84×10^{-5} *7* α(N)=8.06×10^{-6} *12*; α(O)=4.15×10^{-7} *6*
		800.5 *2*	3.0 *5*	225.873	3/2$^+$	[M1,E2]	1.70×10^{-3}	α(K)=0.001494 *21*; α(L)=0.0001718 *24*; α(M)=3.18×10^{-5} *5* α(N)=5.29×10^{-6} *8*; α(O)=2.74×10^{-7} *4*
		820.20 *5*	100 *6*	206.250	9/2$^+$	[M1,E2]	1.61×10^{-3}	α(K)=0.001414 *20*; α(L)=0.0001625 *23*; α(M)=3.01×10^{-5} *5* α(N)=5.01×10^{-6} *7*; α(O)=2.59×10^{-7} *4*
		1026.49 *5*	35.9 *20*	0.0	7/2$^+$	[M1]	9.80×10^{-4}	B(M1)(W.u.)>0.00011 α(K)=0.000861 *12*; α(L)=9.83×10^{-5} *14*; α(M)=1.82×10^{-5} *3* α(N)=3.03×10^{-6} *5*; α(O)=1.573×10^{-7} *22*
1051.20	(1/2,3/2,5/2$^-$)	310.39 *5*	33 *3*	740.80	3/2$^-$			
		677.2 *1*	100 *8*	373.99	1/2$^-$			
		692.5 *5*	7 *3*	358.584	3/2$^+$			
1053.26	5/2$^+$,7/2$^+$	381.4 *1*	24 *6*	671.876	(5/2$^+$)			

$^{109}_{45}Rh_{64}$-8

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.‡	α&	Comments
1053.26	5/2+,7/2+	575.0 *1*	11.6 *18*	478.28	(5/2)+			
		626.4 *1*	33 *3*	426.759	5/2+			
		643.50 *5*	57 *4*	409.74	7/2+			
		827.3 *3*	54 *4*	225.873	3/2+			
		847.0 *1*	100 *20*	206.250	9/2+			
		1053.4 *1*	82 *6*	0.0	7/2+			
1062.1	(9/2−)	439@ *1*	100@	623.12	5/2−			
1073.1	(13/2+)	328@ *1*		745.4	13/2+			
		431@ *1*		641.98	(11/2+)			
1096.25	(9/2)+	454.6 *3*	9 *5*	641.98	(11/2+)			
		565.7 *3*	41 *14*	530.66	11/2+			
		890.1 *3*	68 *18*	206.250	9/2+			
		1096.30 *5*	100 *18*	0.0	7/2+			
1162.19	(3/2−)	803.5 *5*	100	358.584	3/2+			
1176.97	3/2+,5/2,7/2+	750.2 *5*	55 *18*	426.759	5/2+			
		818.3 *2*	100 *12*	358.584	3/2+			
		1177.0 *3*	46 *12*	0.0	7/2+			Additional information 1.
1202.6	(15/2+)	457@ *1*		745.4	13/2+			
		672@ *1*		530.66	11/2+			
1214.19	(3/2)−	646.0 *5*	52 *26*	568.10	3/2−			
		840.2 *3*	100 *30*	373.99	1/2−			
1229.48	(7/2+)	699.0 *5*	15 *8*	530.66	11/2+			
		751.0 *5*	26 *14*	478.28	(5/2)+			
		802.7 *2*	25 *17*	426.759	5/2+			
		819.8 *5*	21 *8*	409.74	7/2+			
		1023.2 *1*	100 *13*	206.250	9/2+			
		1229.5 *1*	69 *11*	0.0	7/2+			
1283.86	(7/2−)	612.2 *2*	11.6 *22*	671.876	(5/2+)			
		874.0 *3*	8 *3*	409.74	7/2+			
		1077.6 *1*	100 *10*	206.250	9/2+			
		1283.9 *1*	65 *5*	0.0	7/2+			
1291.7	(15/2+)	524@ *1*	100@	767.7	(11/2+)			
1310.72	(3/2+)	638.9 *2*	5.9 *17*	671.876	(5/2+)	[E2]	0.00285	B(E2)(W.u.)=0.12 *5* α(K)=0.00248 *4*; α(L)=0.000301 *5*; α(M)=5.59×10^{-5} *8* α(N)=9.21×10^{-6} *13*; α(O)=4.40×10^{-7} *7*
		832.5 *2*	10.9 *24*	478.28	(5/2)+	[M1]	1.56×10^{-3}	B(M1)(W.u.)=5.0×10^{-5} *15* α(K)=0.001368 *20*; α(L)=0.0001571 *22*; α(M)=2.91×10^{-5} *4* α(N)=4.84×10^{-6} *7*; α(O)=2.51×10^{-7} *4*
		883.94 *5*	36 *4*	426.759	5/2+	[M1]	1.36×10^{-3}	B(M1)(W.u.)=0.00014 *4* α(K)=0.001196 *17*; α(L)=0.0001372 *20*; α(M)=2.54×10^{-5} *4* α(N)=4.23×10^{-6} *6*; α(O)=2.19×10^{-7} *3*

$^{109}_{45}Rh_{64}$-9

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
1310.72	(3/2$^+$)	952.00 *5*	100 *7*	358.584	3/2$^+$	[M1]	1.16×10^{-3}	B(M1)(W.u.)=0.00031 *7* α(K)=0.001015 *15*; α(L)=0.0001162 *17*; α(M)=2.15×10^{-5} *3* α(N)=3.58×10^{-6} *5*; α(O)=1.86×10^{-7} *3*
1412.53	(1/2$^+$)	985.8 *2*	73 *13*	426.759	5/2$^+$			
		1054.0 *5*	100 *38*	358.584	3/2$^+$			
		1155.0 *5*	75 *38*	257.66	(3/2)$^+$			
		1186.7 *3*	38 *13*	225.873	3/2$^+$			
1444.5	(17/2$^+$)	242[@] *1*		1202.6	(15/2$^+$)			
		699[@] *1*		745.4	13/2$^+$			
1455.0	(15/2$^+$)	382[@] *1*		1073.1	(13/2$^+$)			
		813[@] *1*		641.98	(11/2$^+$)			
1511.512	7/2$^+$	200.74 *3*	9.1 *9*	1310.72	(3/2$^+$)	[E2]	0.1122	B(E2)(W.u.)>1.1×10^2 α(K)=0.0945 *14*; α(L)=0.01452 *21*; α(M)=0.00273 *4* α(N)=0.000434 *6*; α(O)=1.525×10^{-5} *22*
		415.34 *5*	5.4 *23*	1096.25	(9/2)$^+$	[M1]	0.00799	B(M1)(W.u.)>0.00035 α(K)=0.00699 *10*; α(L)=0.000819 *12*; α(M)=0.0001521 *22* α(N)=2.53×10^{-5} *4*; α(O)=1.292×10^{-6} *18*
		458.3 *2*	1.4 *4*	1053.26	5/2$^+$,7/2$^+$	[M1]	0.00629	B(M1)(W.u.)>6.7×10^{-5} α(K)=0.00550 *8*; α(L)=0.000643 *9*; α(M)=0.0001193 *17* α(N)=1.98×10^{-5} *3*; α(O)=1.015×10^{-6} *15*
		485.04 *5*	4.9 *4*	1026.46	(5/2,7/2)$^+$	[M1]	0.00548	B(M1)(W.u.)>0.00020 α(K)=0.00480 *7*; α(L)=0.000560 *8*; α(M)=0.0001039 *15* α(N)=1.726×10^{-5} *25*; α(O)=8.85×10^{-7} *13*
		499.94 *5*	14.2 *11*	1011.60	(3/2)$^+$	[E2]	0.00566	α(K)=0.00491 *7*; α(L)=0.000614 *9*; α(M)=0.0001143 *16* α(N)=1.87×10^{-5} *3*; α(O)=8.60×10^{-7} *12* B(E2)(W.u.)>1.7
		621.3 *3*	16.3 *5*	890.23	(9/2$^+$)	[M1]	0.00305	B(M1)(W.u.)>0.00031 α(K)=0.00267 *4*; α(L)=0.000309 *5*; α(M)=5.73×10^{-5} *8* α(N)=9.53×10^{-6} *14*; α(O)=4.91×10^{-7} *7*
		839.8 *3*	15 *4*	671.876	(5/2$^+$)	[M1]	1.53×10^{-3}	B(M1)(W.u.)>0.00012 α(K)=0.001341 *19*; α(L)=0.0001540 *22*; α(M)=2.85×10^{-5} *4* α(N)=4.75×10^{-6} *7*; α(O)=2.46×10^{-7} *4*
		869.5 *2*	2.3 *5*	641.98	(11/2$^+$)	[E2]	1.31×10^{-3}	B(E2)(W.u.)>0.018 α(K)=0.001142 *16*; α(L)=0.0001347 *19*; α(M)=2.50×10^{-5} *4* α(N)=4.13×10^{-6} *6*; α(O)=2.04×10^{-7} *3*
		980.8 *2*	3.6 *5*	530.66	11/2$^+$	[E2]	9.86×10^{-4}	B(E2)(W.u.)>0.015 α(K)=0.000863 *12*; α(L)=0.0001010 *15*; α(M)=1.87×10^{-5} *3* α(N)=3.10×10^{-6} *5*; α(O)=1.548×10^{-7} *22*
		1033.2 *1*	2.3 *4*	478.28	(5/2)$^+$	[M1]	9.66×10^{-4}	α(K)=0.000848 *12*; α(L)=9.69×10^{-5} *14*; α(M)=1.80×10^{-5} *3* α(N)=2.99×10^{-6} *5*; α(O)=1.551×10^{-7} *22* B(M1)(W.u.)>9.6×10^{-6}

$^{109}_{45}Rh_{64}$-10

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
1511.512	7/2$^+$	1084.7 *1*	9.1 *14*	426.759	5/2$^+$	[M1]	8.70×10^{-4}	B(M1)(W.u.)>3.3×10^{-5} α(K)=0.000763 *11*; α(L)=8.71×10^{-5} *13*; α(M)=1.614×10^{-5} *23* α(N)=2.69×10^{-6} *4*; α(O)=1.395×10^{-7} *20*
		1152.9 *1*	8.4 *8*	358.584	3/2$^+$	[E2]	6.92×10^{-4}	B(E2)(W.u.)>0.016 α(K)=0.000604 *9*; α(L)=6.99×10^{-5} *10*; α(M)=1.296×10^{-5} *19* α(N)=2.15×10^{-6} *3*; α(O)=1.086×10^{-7} *16*; α(IPF)=2.71×10^{-6} *4*
		1305.3 *1*	100 *5*	206.250	9/2$^+$	[M1]	6.08×10^{-4}	B(M1)(W.u.)>0.00021 α(K)=0.000514 *8*; α(L)=5.85×10^{-5} *9*; α(M)=1.082×10^{-5} *16* α(N)=1.80×10^{-6} *3*; α(O)=9.38×10^{-8} *14*; α(IPF)=2.20×10^{-5} *3*
		1511.7 *1*	14.0 *22*	0.0	7/2$^+$	[M1]	5.07×10^{-4}	B(M1)(W.u.)>1.9×10^{-5} α(K)=0.000379 *6*; α(L)=4.30×10^{-5} *6*; α(M)=7.95×10^{-6} *12* α(N)=1.324×10^{-6} *19*; α(O)=6.90×10^{-8} *10*; α(IPF)=7.55×10^{-5} *11*
1576.33	5/2$^+$,7/2$^+$	265.61 *3*	96 *6*	1310.72	(3/2$^+$)	[M1]	0.0246	B(M1)(W.u.)>0.0027 α(K)=0.0215 *3*; α(L)=0.00255 *4*; α(M)=0.000474 *7* α(N)=7.87×10^{-5} *11*; α(O)=3.99×10^{-6} *6*
		480.1 *2*	32 *3*	1096.25	(9/2)$^+$	[M1,E2]	0.00562	α(K)=0.00492 *7*; α(L)=0.000574 *8*; α(M)=0.0001065 *15* α(N)=1.770×10^{-5} *25*; α(O)=9.07×10^{-7} *13*
		564.5 *5*	43 *13*	1011.60	(3/2)$^+$	[M1,E2]	0.00382	α(K)=0.00335 *5*; α(L)=0.000388 *6*; α(M)=7.20×10^{-5} *11* α(N)=1.197×10^{-5} *17*; α(O)=6.16×10^{-7} *9*
		686.1 *1*	89 *7*	890.23	(9/2$^+$)	[M1]	0.00242	B(M1)(W.u.)>0.00015 α(K)=0.00212 *3*; α(L)=0.000245 *4*; α(M)=4.54×10^{-5} *7* α(N)=7.56×10^{-6} *11*; α(O)=3.90×10^{-7} *6*
		904.6 *2*	74 *3*	671.876	(5/2$^+$)	[M1]	1.30×10^{-3}	B(M1)(W.u.)>5.3×10^{-5} α(K)=0.001136 *16*; α(L)=0.0001302 *19*; α(M)=2.41×10^{-5} *4* α(N)=4.02×10^{-6} *6*; α(O)=2.08×10^{-7} *3*
		1098.0 *2*	38 *7*	478.28	(5/2)$^+$	[M1]	8.47×10^{-4}	B(M1)(W.u.)>1.5×10^{-5} α(K)=0.000744 *11*; α(L)=8.48×10^{-5} *12*; α(M)=1.571×10^{-5} *22* α(N)=2.62×10^{-6} *4*; α(O)=1.358×10^{-7} *19*
		1166.5 *2*	16 *4*	409.74	7/2$^+$	[M1]	7.47×10^{-4}	B(M1)(W.u.)>5.4×10^{-6} α(K)=0.000653 *10*; α(L)=7.44×10^{-5} *11*; α(M)=1.377×10^{-5} *20* α(N)=2.29×10^{-6} *4*; α(O)=1.192×10^{-7} *17*; α(IPF)=3.08×10^{-6} *5*
		1370.1 *1*	100 *9*	206.250	9/2$^+$	[M1,E2]	5.65×10^{-4}	α(K)=0.000465 *7*; α(L)=5.28×10^{-5} *8*; α(M)=9.77×10^{-6} *14* α(N)=1.626×10^{-6} *23*; α(O)=8.47×10^{-8} *12*; α(IPF)=3.56×10^{-5} *5*
		1576.5 *5*	26 *13*	0.0	7/2$^+$	[M1]	4.94×10^{-4}	B(M1)(W.u.)>3.5×10^{-6} α(K)=0.000348 *5*; α(L)=3.94×10^{-5} *6*; α(M)=7.29×10^{-6} *11* α(N)=1.214×10^{-6} *17*; α(O)=6.33×10^{-8} *9*; α(IPF)=9.84×10^{-5} *14*
1637.97	(3/2)$^-$	1279.3 *3*	100 *15*	358.584	3/2$^+$			
1652.1	(13/2$^-$)	590[@] *1*	100[@]	1062.1	(9/2$^-$)			
1676.0	(17/2$^+$)	603[@] *1*	100[@]	1073.1	(13/2$^+$)			
1929.07	7/2$^+$	352.9 *1*	1.7 *3*	1576.33	5/2$^+$,7/2$^+$	[M1]	0.01196	B(M1)(W.u.)>0.00016

$^{109}_{45}Rh_{64}$-11

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	α[&]	Comments
							α(K)=0.01046 *15*; α(L)=0.001231 *18*; α(M)=0.000229 *4* α(N)=3.80×10^{-5} *6*; α(O)=1.94×10^{-6} *3*
1929.07	618.5 *5*	0.7 *4*	1310.72	(3/2$^+$)	[E2]	0.00311	B(E2)(W.u.)>0.026 α(K)=0.00270 *4*; α(L)=0.000330 *5*; α(M)=6.12×10^{-5} *9* α(N)=1.007×10^{-5} *15*; α(O)=4.79×10^{-7} *7*
	645.3 *1*	1.5 *2*	1283.86	(7/2$^-$)	[E1]	9.94×10^{-4}	B(E1)(W.u.)>3.1×10^{-7} α(K)=0.000872 *13*; α(L)=9.95×10^{-5} *14*; α(M)=1.84×10^{-5} *3* α(N)=3.05×10^{-6} *5*; α(O)=1.544×10^{-7} *22*
	875.8 *1*	1.6 *3*	1053.26	5/2$^+$,7/2$^+$	[M1]	1.39×10^{-3}	B(M1)(W.u.)>9.8×10^{-6} α(K)=0.001221 *17*; α(L)=0.0001401 *20*; α(M)=2.60×10^{-5} *4* α(N)=4.32×10^{-6} *6*; α(O)=2.24×10^{-7} *4*
	902.6 *1*	3.6 *3*	1026.46	(5/2,7/2)$^+$	[M1]	1.30×10^{-3}	B(M1)(W.u.)>2.0×10^{-5} α(K)=0.001142 *16*; α(L)=0.0001309 *19*; α(M)=2.43×10^{-5} *4* α(N)=4.04×10^{-6} *6*; α(O)=2.09×10^{-7} *3*
	917.5 *1*	5.0 *4*	1011.60	(3/2)$^+$	[E2]	1.15×10^{-3}	B(E2)(W.u.)>0.026 α(K)=0.001006 *14*; α(L)=0.0001183 *17*; α(M)=2.19×10^{-5} *3* α(N)=3.63×10^{-6} *5*; α(O)=1.80×10^{-7} *3*
	1038.8 *1*	2.1 *2*	890.23	(9/2$^+$)	[M1]	9.55×10^{-4}	B(M1)(W.u.)>7.7×10^{-6} α(K)=0.000838 *12*; α(L)=9.58×10^{-5} *14*; α(M)=1.774×10^{-5} *25* α(N)=2.95×10^{-6} *5*; α(O)=1.533×10^{-7} *22*
	1068.0 *5*	0.7 *3*	861.00	(9/2$^+$)	[M1]	8.99×10^{-4}	B(M1)(W.u.)>2.4×10^{-6} α(K)=0.000789 *11*; α(L)=9.01×10^{-5} *13*; α(M)=1.669×10^{-5} *24* α(N)=2.78×10^{-6} *4*; α(O)=1.443×10^{-7} *21*
	1257.2 *1*	7.1 *5*	671.876	(5/2$^+$)	[M1]	6.48×10^{-4}	B(M1)(W.u.)>1.5×10^{-5} α(K)=0.000557 *8*; α(L)=6.33×10^{-5} *9*; α(M)=1.173×10^{-5} *17* α(N)=1.95×10^{-6} *3*; α(O)=1.016×10^{-7} *15*; α(IPF)=1.380×10^{-5} *20*
	1287.0 *1*	1.98 *24*	641.98	(11/2$^+$)	[E2]	5.69×10^{-4}	B(E2)(W.u.)>0.0019 α(K)=0.000479 *7*; α(L)=5.51×10^{-5} *8*; α(M)=1.021×10^{-5} *15* α(N)=1.694×10^{-6} *24*; α(O)=8.62×10^{-8} *12*; α(IPF)=2.23×10^{-5} *4*
	1398.6 *3*	1.16 *21*	530.66	11/2$^+$	[E2]	5.11×10^{-4}	B(E2)(W.u.)>0.00074 α(K)=0.000405 *6*; α(L)=4.63×10^{-5} *7*; α(M)=8.58×10^{-6} *12* α(N)=1.424×10^{-6} *20*; α(O)=7.28×10^{-8} *11*; α(IPF)=4.96×10^{-5} *7*
	1450.5 *2*	1.3 *5*	478.28	(5/2)$^+$	[M1]	5.26×10^{-4}	B(M1)(W.u.)>1.8×10^{-6} α(K)=0.000413 *6*; α(L)=4.68×10^{-5} *7*; α(M)=8.67×10^{-6} *13* α(N)=1.443×10^{-6} *21*; α(O)=7.52×10^{-8} *11*; α(IPF)=5.65×10^{-5} *8*
	1502.28 *5*	29.5 *18*	426.759	5/2$^+$	[M1]	5.09×10^{-4}	B(M1)(W.u.)>3.6×10^{-5} α(K)=0.000384 *6*; α(L)=4.35×10^{-5} *6*; α(M)=8.06×10^{-6} *12* α(N)=1.341×10^{-6} *19*; α(O)=6.99×10^{-8} *10*; α(IPF)=7.24×10^{-5} *11*
	1570.4 *2*	1.32 *24*	358.584	3/2$^+$	[E2]	4.76×10^{-4}	B(E2)(W.u.)>0.00047 α(K)=0.000322 *5*; α(L)=3.67×10^{-5} *6*; α(M)=6.78×10^{-6} *10* α(N)=1.127×10^{-6} *16*; α(O)=5.79×10^{-8} *9*; α(IPF)=0.0001096 *16*
	1722.8 *1*	7.7 *7*	206.250	9/2$^+$	[M1]	4.86×10^{-4}	B(M1)(W.u.)>6.2×10^{-6}

$^{109}_{45}Rh_{64}$-12

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
								α(K)=0.000291 *4*; α(L)=3.29×10^{-5} *5*; α(M)=6.08×10^{-6} *9* α(N)=1.013×10^{-6} *15*; α(O)=5.29×10^{-8} *8*; α(IPF)=0.0001556 *22*
1929.07	7/2$^+$	1929.06 *5*	100 *5*	0.0	7/2$^+$	[M1]	5.10×10^{-4}	B(M1)(W.u.)>5.7×10^{-5} α(K)=0.000232 *4*; α(L)=2.62×10^{-5} *4*; α(M)=4.84×10^{-6} *7* α(N)=8.07×10^{-7} *12*; α(O)=4.22×10^{-8} *6*; α(IPF)=0.000246 *4*
1959.7	(19/2$^+$)	668[@] *1*	100[@]	1291.7	(15/2$^+$)			
1963.40	(5/2)$^+$	652.5 *1*	1.2 *6*	1310.72	(3/2$^+$)	[M1]	0.00272	B(M1)(W.u.)>1.0×10^{-5} α(K)=0.00238 *4*; α(L)=0.000276 *4*; α(M)=5.11×10^{-5} *8* α(N)=8.50×10^{-6} *12*; α(O)=4.38×10^{-7} *7*
		1073.2 *1*	22.3 *18*	890.23	(9/2$^+$)	[E2]	8.06×10^{-4}	α(K)=0.000706 *10*; α(L)=8.21×10^{-5} *12*; α(M)=1.521×10^{-5} *22* α(N)=2.52×10^{-6} *4*; α(O)=1.268×10^{-7} *18* B(E2)(W.u.)>0.031
		1291.5 *1*	14.1 *18*	671.876	(5/2$^+$)	[M1]	6.18×10^{-4}	B(M1)(W.u.)>1.5×10^{-5} α(K)=0.000526 *8*; α(L)=5.98×10^{-5} *9*; α(M)=1.107×10^{-5} *16* α(N)=1.84×10^{-6} *3*; α(O)=9.59×10^{-8} *14*; α(IPF)=1.95×10^{-5} *3*
		1485.0 *5*	3.5 *18*	478.28	(5/2)$^+$	[M1]	5.14×10^{-4}	B(M1)(W.u.)>2.5×10^{-6} α(K)=0.000393 *6*; α(L)=4.46×10^{-5} *7*; α(M)=8.25×10^{-6} *12* α(N)=1.374×10^{-6} *20*; α(O)=7.16×10^{-8} *10*; α(IPF)=6.69×10^{-5} *10*
		1536.7 *1*	100 *18*	426.759	5/2$^+$	[M1]	5.01×10^{-4}	B(M1)(W.u.)>6.5×10^{-5} α(K)=0.000367 *6*; α(L)=4.15×10^{-5} *6*; α(M)=7.69×10^{-6} *11* α(N)=1.280×10^{-6} *18*; α(O)=6.67×10^{-8} *10*; α(IPF)=8.41×10^{-5} *12*
		1757.1 *1*	85 *5*	206.250	9/2$^+$	[E2]	4.85×10^{-4}	B(E2)(W.u.)>0.0099 α(K)=0.000259 *4*; α(L)=2.94×10^{-5} *5*; α(M)=5.44×10^{-6} *8* α(N)=9.05×10^{-7} *13*; α(O)=4.66×10^{-8} *7*; α(IPF)=0.000190 *3*
		1963.5 *1*	66 *5*	0.0	7/2$^+$	[M1]	5.17×10^{-4}	B(M1)(W.u.)>2.1×10^{-5} α(K)=0.000224 *4*; α(L)=2.53×10^{-5} *4*; α(M)=4.68×10^{-6} *7* α(N)=7.79×10^{-7} *11*; α(O)=4.07×10^{-8} *6*; α(IPF)=0.000262 *4*
1971.87	(5/2)$^+$	960.5 *5*	3.7 *19*	1011.60	(3/2)$^+$			
		1081.5 *5*	8 *4*	890.23	(9/2$^+$)			
		1545.0 *2*	13.9 *20*	426.759	5/2$^+$			
		1765.7 *3*	100 *20*	206.250	9/2$^+$			
		1971.9 *2*	26 *3*	0.0	7/2$^+$			
1975.6	(19/2$^+$)	531[@] *1*		1444.5	(17/2$^+$)			
		773[@] *1*		1202.6	(15/2$^+$)			
2015.41	(3/2)	838.4 *2*	15 *6*	1176.97	3/2$^+$,5/2,7/2$^+$			
		1274.6 *4*	9 *4*	740.80	3/2$^-$			
		1537.0 *5*	28 *12*	478.28	(5/2)$^+$			
		1588.7 *2*	24 *6*	426.759	5/2$^+$			

$^{109}_{45}Rh_{64}$-13

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
2015.41	(3/2)	1641.5 *3*	9 *4*	373.99	1/2$^-$			
		1656.8 *1*	100 *9*	358.584	3/2$^+$			
		1789.5 *3*	38 *5*	225.873	3/2$^+$			
2045.54	(3/2)$^-$	1567.2 *2*	100 *9*	478.28	(5/2)$^+$			
		1819.7 *2*	67 *7*	225.873	3/2$^+$			
2093.91	(3/2$^+$)	455.9 *2*	10.1 *14*	1637.97	(3/2)$^-$	[E1]	0.00223	B(E1)(W.u.)>1.1×10^{-6} α(K)=0.00196 *3*; α(L)=0.000225 *4*; α(M)=4.17×10^{-5} *6* α(N)=6.89×10^{-6} *10*; α(O)=3.44×10^{-7} *5*
		681.4 *1*	31.4 *25*	1412.53	(1/2$^+$)	[M1]	0.00246	B(M1)(W.u.)>7.7×10^{-5} α(K)=0.00216 *3*; α(L)=0.000249 *4*; α(M)=4.62×10^{-5} *7* α(N)=7.68×10^{-6} *11*; α(O)=3.96×10^{-7} *6*
		879.7 *2*	10.1 *14*	1214.19	(3/2)$^-$	[E1]	5.18×10^{-4}	B(E1)(W.u.)>1.6×10^{-7} α(K)=0.000455 *7*; α(L)=5.16×10^{-5} *8*; α(M)=9.53×10^{-6} *14* α(N)=1.582×10^{-6} *23*; α(O)=8.09×10^{-8} *12*
		931.7 *2*	4.8 *23*	1162.19	(3/2$^-$)	[E1]	4.62×10^{-4}	B(E1)(W.u.)>6.2×10^{-8} α(K)=0.000407 *6*; α(L)=4.60×10^{-5} *7*; α(M)=8.50×10^{-6} *12* α(N)=1.411×10^{-6} *20*; α(O)=7.23×10^{-8} *11*
		1042.7 *2*	34 *5*	1051.20	(1/2,3/2,5/2$^-$)			
		1082.2 *1*	19 *3*	1011.60	(3/2)$^+$	[M1]	8.74×10^{-4}	B(M1)(W.u.)>1.2×10^{-5} α(K)=0.000767 *11*; α(L)=8.76×10^{-5} *13*; α(M)=1.622×10^{-5} *23* α(N)=2.70×10^{-6} *4*; α(O)=1.402×10^{-7} *20*
		1113.2 *1*	86 *5*	980.71	(1/2)			
		1237.9 *1*	37 *7*	855.99	5/2$^-$	[E1]	3.32×10^{-4}	B(E1)(W.u.)>2.0×10^{-7} α(K)=0.000239 *4*; α(L)=2.69×10^{-5} *4*; α(M)=4.98×10^{-6} *7* α(N)=8.27×10^{-7} *12*; α(O)=4.27×10^{-8} *6*; α(IPF)=6.00×10^{-5} *9*
		1353.2 *2*	11.9 *18*	740.80	3/2$^-$	[E1]	3.65×10^{-4}	B(E1)(W.u.)>5.0×10^{-8} α(K)=0.000205 *3*; α(L)=2.30×10^{-5} *4*; α(M)=4.25×10^{-6} *6* α(N)=7.06×10^{-7} *10*; α(O)=3.65×10^{-8} *6*; α(IPF)=0.0001323 *19*
		1471.0 *5*	27 *11*	623.12	5/2$^-$	[E1]	4.17×10^{-4}	B(E1)(W.u.)>8.9×10^{-8} α(K)=0.0001778 *25*; α(L)=1.99×10^{-5} *3*; α(M)=3.68×10^{-6} *6* α(N)=6.12×10^{-7} *9*; α(O)=3.17×10^{-8} *5*; α(IPF)=0.000215 *3*
		1615.7 *1*	62 *5*	478.28	(5/2)$^+$	[M1]	4.90×10^{-4}	B(M1)(W.u.)>1.1×10^{-5} α(K)=0.000331 *5*; α(L)=3.75×10^{-5} *6*; α(M)=6.93×10^{-6} *10* α(N)=1.155×10^{-6} *17*; α(O)=6.02×10^{-8} *9*; α(IPF)=0.0001132 *16*
		1667.1 *1*	49 *4*	426.759	5/2$^+$	[M1]	4.86×10^{-4}	B(M1)(W.u.)>8.2×10^{-6} α(K)=0.000311 *5*; α(L)=3.51×10^{-5} *5*; α(M)=6.50×10^{-6} *10* α(N)=1.083×10^{-6} *16*; α(O)=5.65×10^{-8} *8*; α(IPF)=0.0001330 *19*
		1720.0 *1*	100 *7*	373.99	1/2$^-$	[E1]	5.63×10^{-4}	B(E1)(W.u.)>2.1×10^{-7} α(K)=0.0001376 *20*; α(L)=1.538×10^{-5} *22*; α(M)=2.84×10^{-6} *4* α(N)=4.72×10^{-7} *7*; α(O)=2.45×10^{-8} *4*; α(IPF)=0.000407 *6*
		1735.2 *1*	85 *5*	358.584	3/2$^+$	[M1]	4.87×10^{-4}	B(M1)(W.u.)>1.3×10^{-5}

$^{109}_{45}Rh_{64}$-14

Adopted Levels, Gammas (continued)

$\gamma(^{109}Rh)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
								α(K)=0.000287 *4*; α(L)=3.24×10^{-5} *5*; α(M)=5.99×10^{-6} *9* α(N)=9.98×10^{-7} *14*; α(O)=5.21×10^{-8} *8*; α(IPF)=0.0001607 *23*
2093.91	(3/2$^+$)	1836.2 *1*	99 *10*	257.66	(3/2)$^+$	[M1]	4.95×10^{-4}	B(M1)(W.u.)>1.2×10^{-5} α(K)=0.000256 *4*; α(L)=2.89×10^{-5} *4*; α(M)=5.35×10^{-6} *8* α(N)=8.90×10^{-7} *13*; α(O)=4.65×10^{-8} *7*; α(IPF)=0.000204 *3*
		1868.0 *2*	35 *3*	225.873	3/2$^+$	[M1]	5.00×10^{-4}	B(M1)(W.u.)>4.2×10^{-6} α(K)=0.000247 *4*; α(L)=2.79×10^{-5} *4*; α(M)=5.17×10^{-6} *8* α(N)=8.60×10^{-7} *12*; α(O)=4.49×10^{-8} *7*; α(IPF)=0.000219 *3*
		2094.3 *3*	6.8 *12*	0.0	7/2$^+$	[E2]	5.62×10^{-4}	B(E2)(W.u.)>0.00011 α(K)=0.000187 *3*; α(L)=2.11×10^{-5} *3*; α(M)=3.91×10^{-6} *6* α(N)=6.50×10^{-7} *10*; α(O)=3.37×10^{-8} *5*; α(IPF)=0.000349 *5*
2098.59	(5/2$^+$,7/2)	1002.5 *5*	26 *13*	1096.25	(9/2)$^+$			
		1208.1 *3*	21 *4*	890.23	(9/2$^+$)			
		1237.8 *5*	21 *11*	861.00	(9/2$^+$)			
		1620.2 *3*	7.4 *21*	478.28	(5/2)$^+$			
		1689.0 *5*	5 *3*	409.74	7/2$^+$			
		1892.4 *3*	21 *8*	206.250	9/2$^+$			
		2098.6 *2*	100 *7*	0.0	7/2$^+$			
2098.9	(17/2$^-$)	423[@] *1*		1676.0	(17/2$^+$)			
		644[@] *1*		1455.0	(15/2$^+$)			
		896[@] *1*		1202.6	(15/2$^+$)			
2117.00	(3/2$^+$)	1105.6 *5*	12 *6*	1011.60	(3/2)$^+$			
		1690.0 *2*	59 *6*	426.759	5/2$^+$			
		1859.3 *2*	100 *9*	257.66	(3/2)$^+$			
		1891.4 *3*	35 *6*	225.873	3/2$^+$			
		2117.3 *4*	6 *3*	0.0	7/2$^+$			
2182.87	(5/2$^+$,7/2)	1756.0 *5*	100 *42*	426.759	5/2$^+$			
		1976.6 *1*	92 *11*	206.250	9/2$^+$			
2184.72	(3/2$^+$,5/2)	1007.7 *2*	15 *4*	1176.97	3/2$^+$,5/2,7/2$^+$			
		1133.5 *2*	10.9 *24*	1051.20	(1/2,3/2,5/2$^-$)			
		1512.9 *1*	100 *13*	671.876	(5/2$^+$)			
		1616.5 *5*	22 *7*	568.10	3/2$^-$			
		1758.0 *5*	28 *11*	426.759	5/2$^+$			
		1825.9 *2*	35 *7*	358.584	3/2$^+$			
		1958.8 *3*	20 *3*	225.873	3/2$^+$			
		2184.7 *2*	16.1 *24*	0.0	7/2$^+$			
2190.50	(3/2$^+$)	1139.2 *2*	23 *3*	1051.20	(1/2,3/2,5/2$^-$)			
		1209.6 *3*	33 *4*	980.71	(1/2)			
		1334.5 *2*	19 *3*	855.99	5/2$^-$	[E1]	3.59×10^{-4}	B(E1)(W.u.)>2.3×10^{-7} α(K)=0.000210 *3*; α(L)=2.36×10^{-5} *4*; α(M)=4.35×10^{-6} *6* α(N)=7.24×10^{-7} *11*; α(O)=3.74×10^{-8} *6*; α(IPF)=0.0001201 *17*
		1449.8 *2*	26 *11*	740.80	3/2$^-$	[E1]	4.06×10^{-4}	B(E1)(W.u.)>2.5×10^{-7}

$^{109}_{45}Rh_{64}$-15

Adopted Levels, Gammas (continued)

γ(^{109}Rh) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[‡]	α[&]	Comments
								α(K)=0.000182 *3*; α(L)=2.04×10^{-5} *3*; α(M)=3.77×10^{-6} *6* α(N)=6.27×10^{-7} *9*; α(O)=3.25×10^{-8} *5*; α(IPF)=0.000199 *3*
2190.50	(3/2$^+$)	1712.3 *3*	11 *3*	478.28	(5/2)$^+$	[M1]	4.86×10^{-4}	B(M1)(W.u.)>4.7×10^{-6} α(K)=0.000294 *5*; α(L)=3.33×10^{-5} *5*; α(M)=6.16×10^{-6} *9* α(N)=1.025×10^{-6} *15*; α(O)=5.35×10^{-8} *8*; α(IPF)=0.0001512 *22*
		1763.8 *3*	28 *6*	426.759	5/2$^+$	[M1]	4.88×10^{-4}	B(M1)(W.u.)>1.1×10^{-5} α(K)=0.000277 *4*; α(L)=3.13×10^{-5} *5*; α(M)=5.80×10^{-6} *9* α(N)=9.66×10^{-7} *14*; α(O)=5.04×10^{-8} *7*; α(IPF)=0.0001729 *25*
		1816.5 *5*	15 *4*	373.99	1/2$^-$	[E1]	6.23×10^{-4}	B(E1)(W.u.)>7.3×10^{-8} α(K)=0.0001261 *18*; α(L)=1.408×10^{-5} *20*; α(M)=2.60×10^{-6} *4* α(N)=4.33×10^{-7} *6*; α(O)=2.25×10^{-8} *4*; α(IPF)=0.000479 *7*
		1831.9 *1*	100 *19*	358.584	3/2$^+$	[M1]	4.95×10^{-4}	B(M1)(W.u.)>3.5×10^{-5} α(K)=0.000257 *4*; α(L)=2.90×10^{-5} *4*; α(M)=5.37×10^{-6} *8* α(N)=8.95×10^{-7} *13*; α(O)=4.67×10^{-8} *7*; α(IPF)=0.000202 *3*
2193.74	(3/2$^+$,5/2)	1521.7 *3*	13 *4*	671.876	(5/2$^+$)			
		1715.4 *2*	23 *5*	478.28	(5/2)$^+$			
		1767.0 *2*	100 *50*	426.759	5/2$^+$			
		2193.8 *2*	70 *7*	0.0	7/2$^+$			
2208.45	(5/2$^+$,7/2)	1347.5 *1*	88 *9*	861.00	(9/2$^+$)			
		1585.1 *2*	100 *12*	623.12	5/2$^-$			
		1798.7 *1*	53 *8*	409.74	7/2$^+$			
2209.40	(3/2$^+$,5/2)	1537.5 *5*	44 *17*	671.876	(5/2$^+$)			
		1850.8 *1*	100 *11*	358.584	3/2$^+$			
2237.92	(3/2$^+$,5/2)	1759.5 *3*	100 *17*	478.28	(5/2)$^+$			
		1811.4 *3*	54 *12*	426.759	5/2$^+$			
		1879.3 *1*	89 *13*	358.584	3/2$^+$			
2247.07	(5/2$^+$,7/2)	1150.7 *3*	76 *10*	1096.25	(9/2)$^+$			
		1357.0 *5*	100 *50*	890.23	(9/2$^+$)			
		1575.2 *5*	86 *36*	671.876	(5/2$^+$)			
		2040.8 *2*	65 *11*	206.250	9/2$^+$			
		2247.1 *3*	55 *9*	0.0	7/2$^+$			
2250.5	(21/2$^+$)	806[@] *1*	100[@]	1444.5	(17/2$^+$)			
2270.1	(5/2$^+$,7/2)	1860.3 *5*	100 *41*	409.74	7/2$^+$			
		2063.8 *3*	59 *13*	206.250	9/2$^+$			
2297.9	(19/2$^-$)	199[@] *1*	100[@]	2098.9	(17/2$^-$)			
2335.1	(17/2$^-$)	683[@] *1*	100[@]	1652.1	(13/2$^-$)			
2558.9	(21/2$^-$)	261[@] *1*	100[@]	2297.9	(19/2$^-$)			
2720.5		470[@] *1*	100[@]	2250.5	(21/2$^+$)			
2874.9	(23/2$^-$)	316[@] *1*	100[@]	2558.9	(21/2$^-$)			
3000.5		280[@] *1*	100[@]	2720.5				
3345.5		345[@] *1*	100[@]	3000.5				

$^{109}_{45}Rh_{64}$-16

Adopted Levels, Gammas (continued)

$\gamma(^{109}Rh)$ (continued)

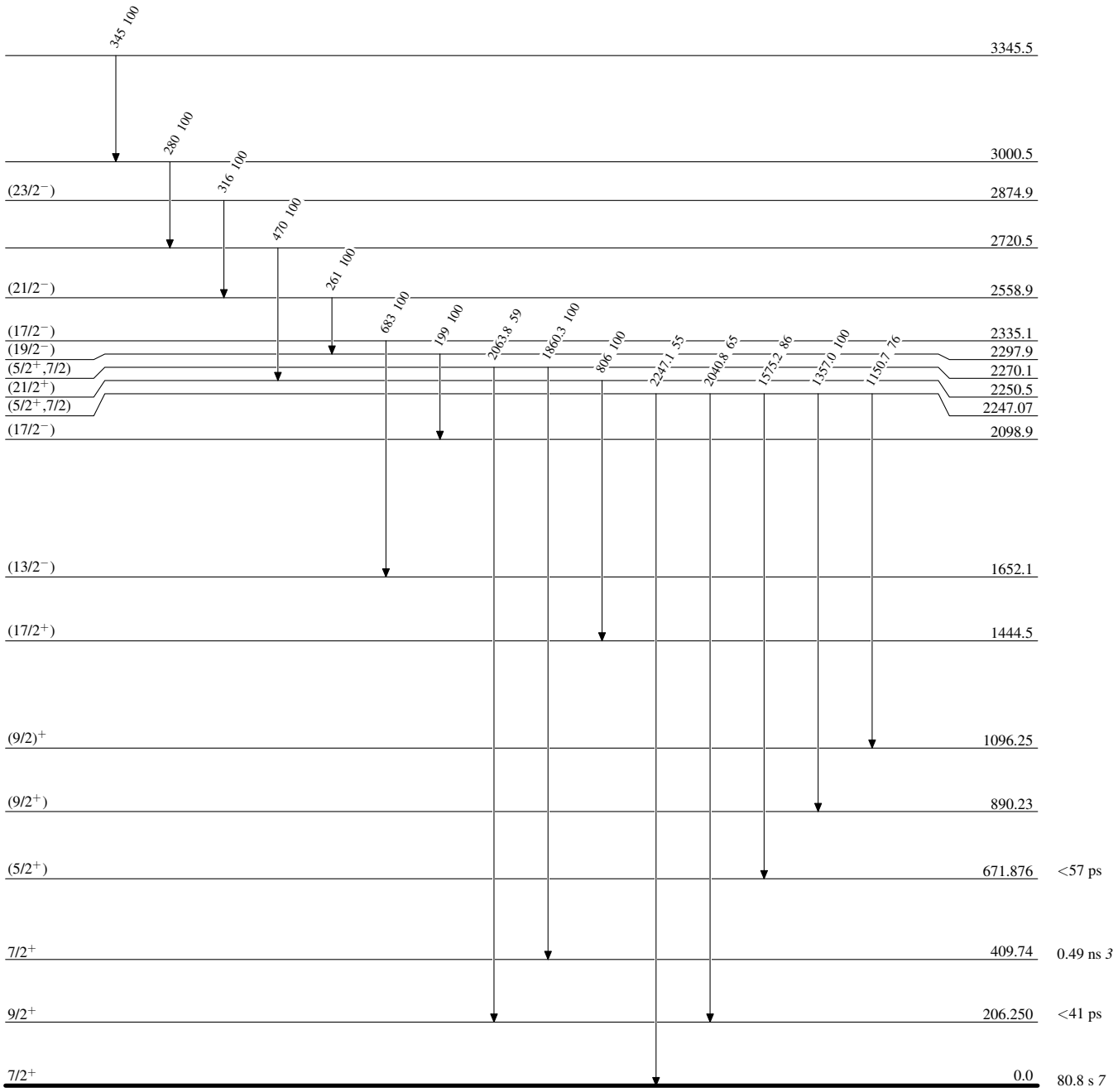
† From ^{109}Ru β^- decay (1987Ka29), unless otherwise noted.
‡ From α(exp) and α(K)exp data in ^{109}Ru β- decay (1987Ka29).
# Deduced by evaluators from α(K)exp and α(exp) in ^{109}Ru β- decay (1987Ka29) using the BrIccMixing program. If No value given it was assumed δ=0.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.
@ From (HI,xnγ) (2002Ve08). Δ(Eγ)=1 keV assumed by evaluators.
& Additional information 2.

$^{109}_{45}Rh_{64}$-17

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

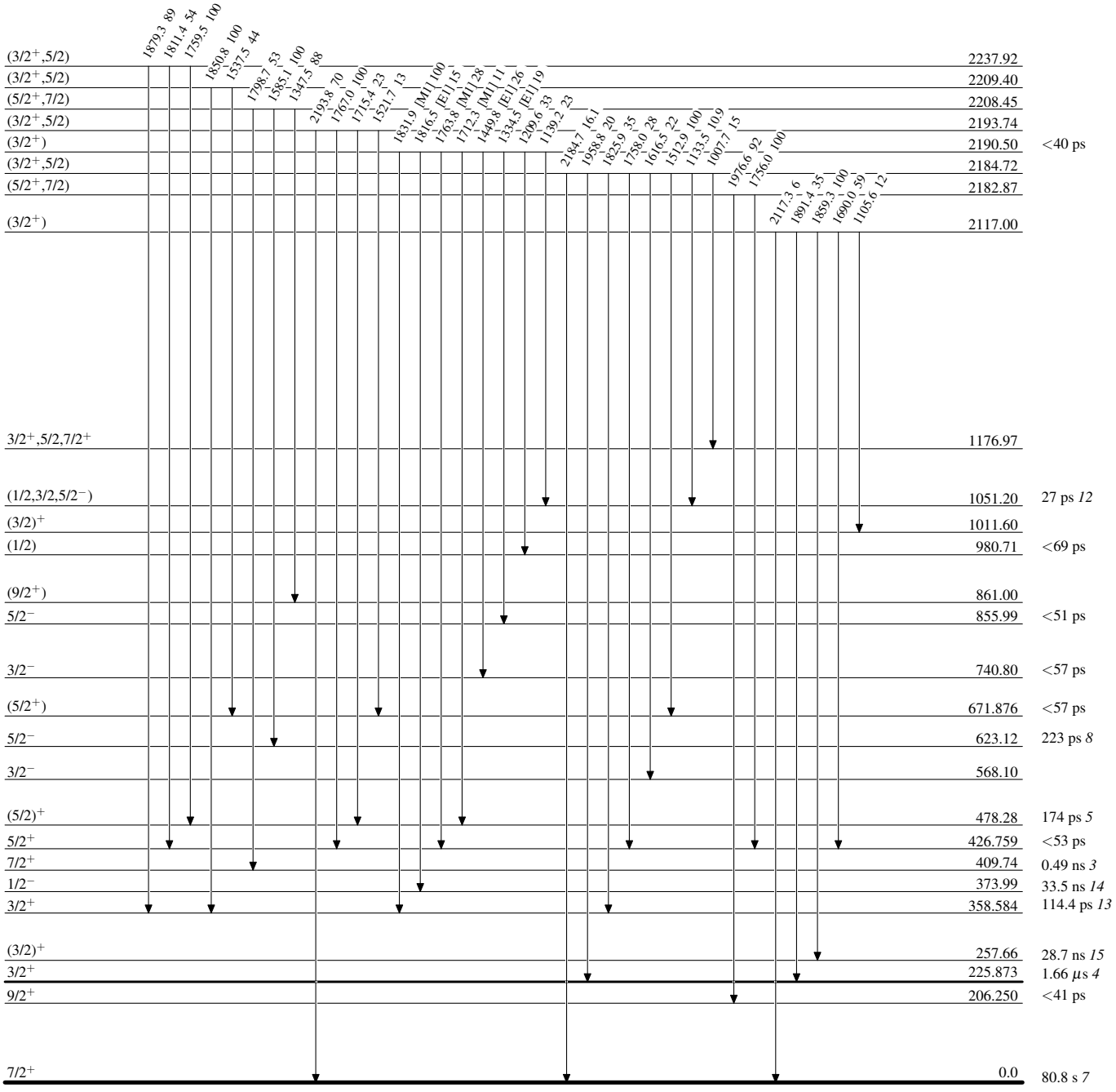


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

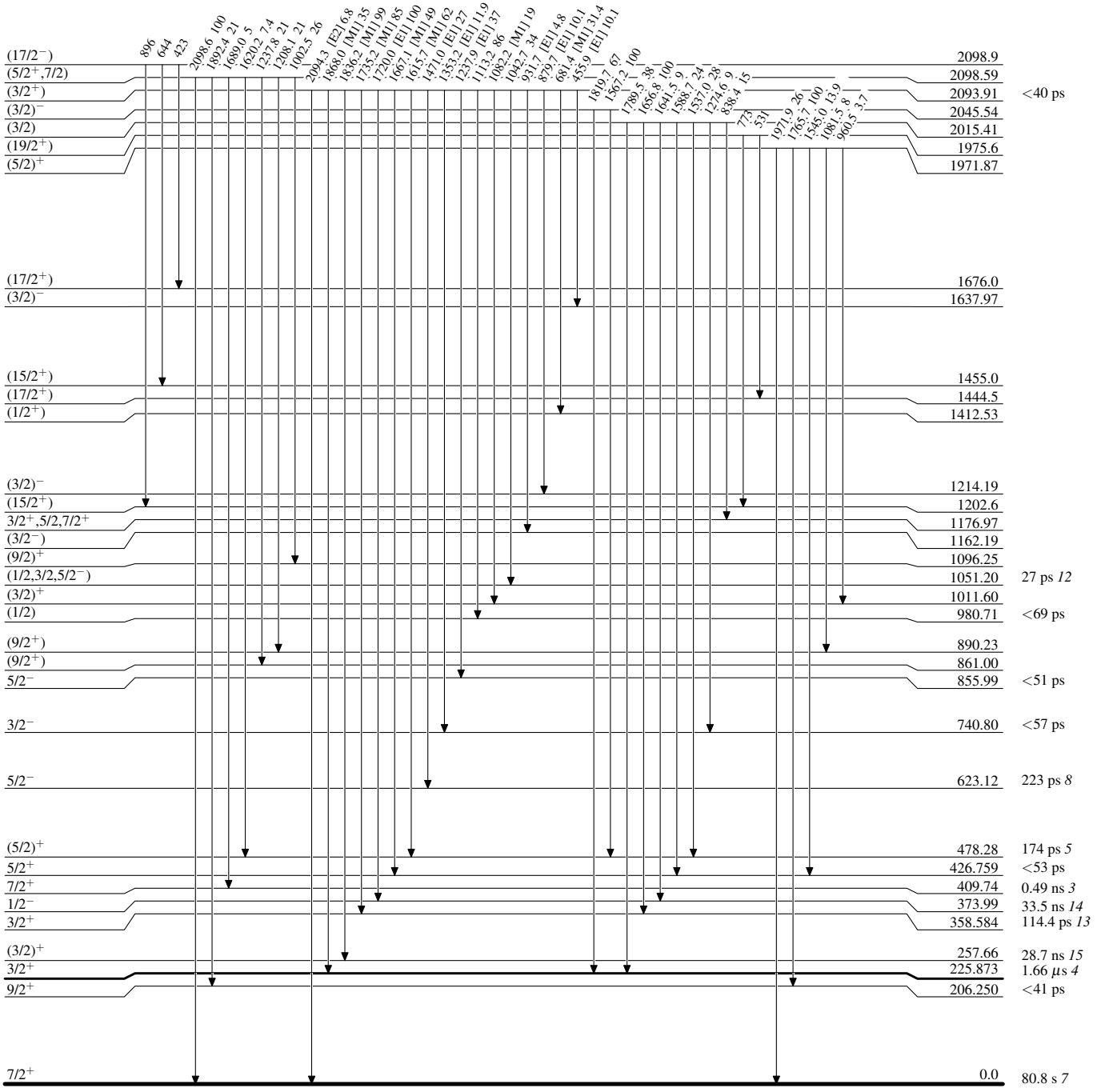


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

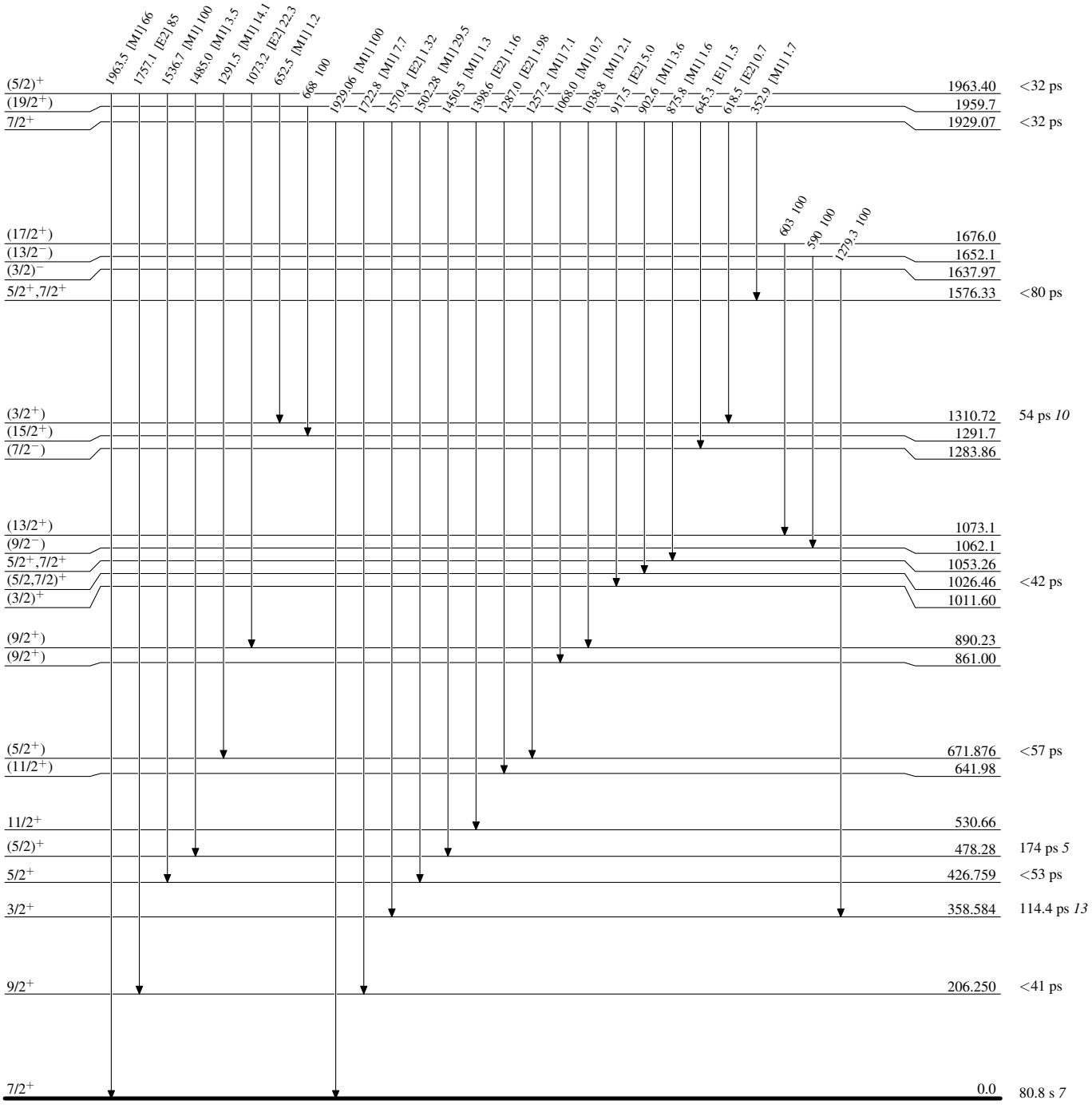


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

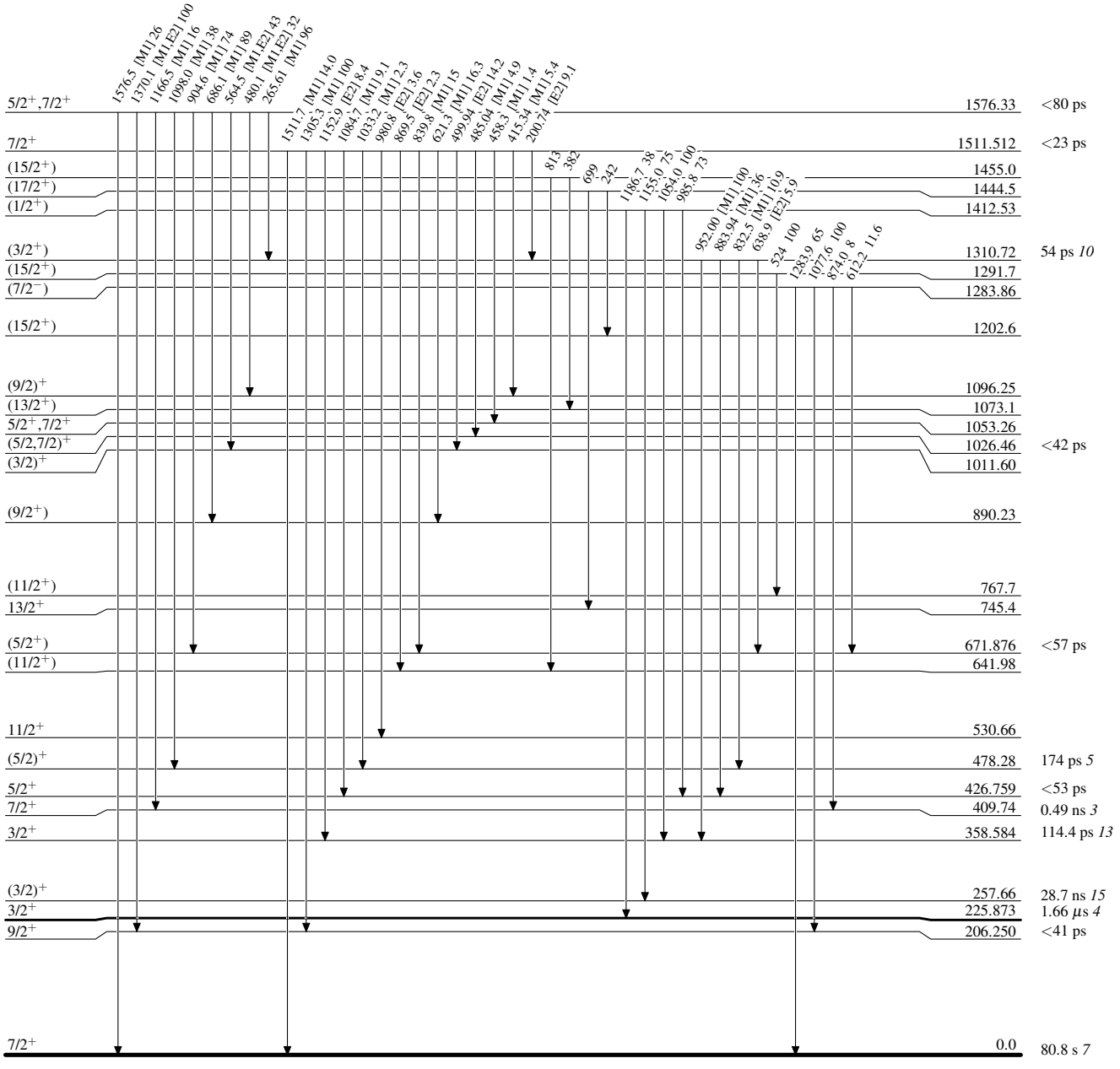


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

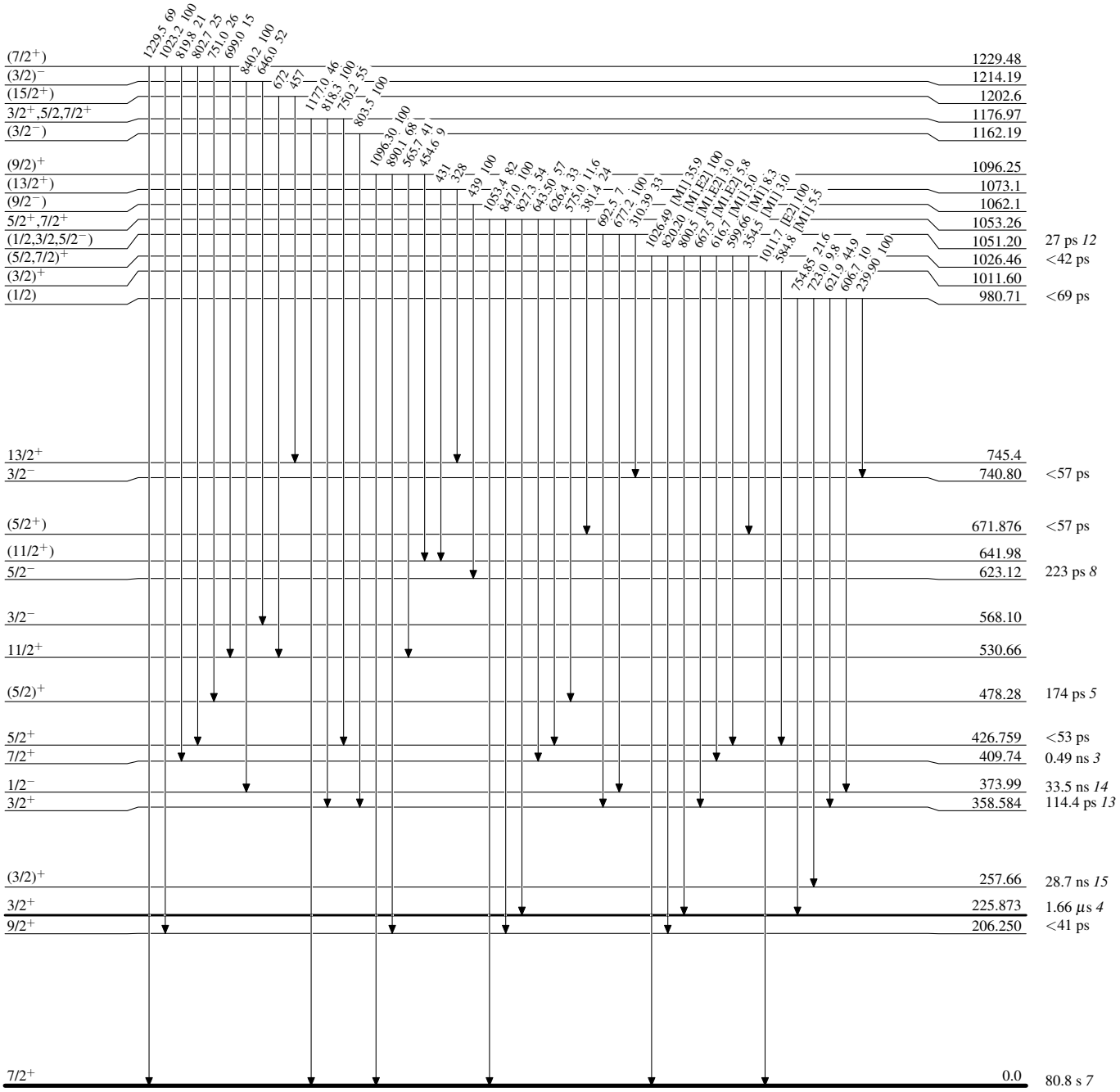
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

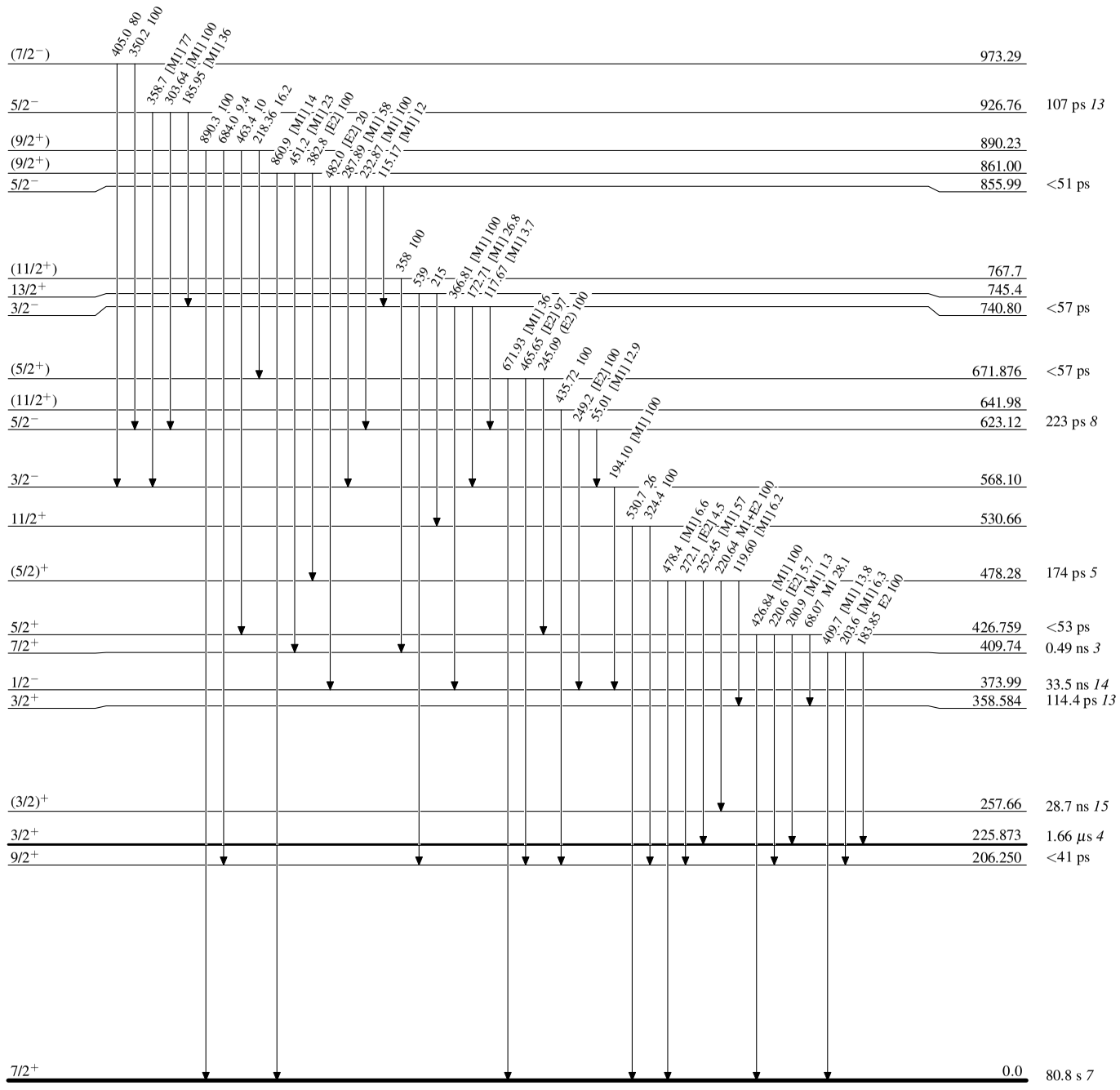


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

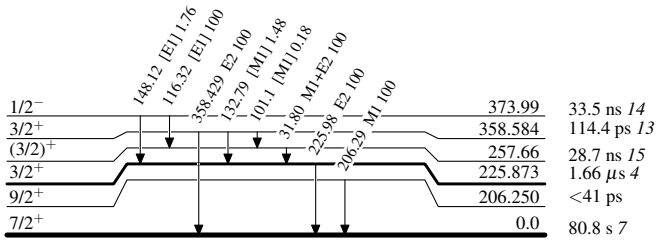


$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{109}_{45}Rh_{64}$

Adopted Levels, Gammas