Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. Kibedi and J. Timar	NDS 110,2815 (2009)	30-Sep-2009

Q(β^-)=−1.04×10^4 *syst*; S(n)=13581 *9*; S(p)=6505 *20*; Q(α)=−3534 *7* 2012Wa38
Note: Current evaluation has used the following Q record −10200 SY13581 9 *6505* 20-3537 9 2009AuZZ.
Δ(Q(β^-))=300 (2009AuZZ).
Values in 2003Au03 are: Q(β^-)=−9610 *360*, S(n)=13110 *220*, S(p)=6460 *200*, Q(α)=−3610 *200*; all from systematics.
Q(β^-): Q(ε)(^{84}Nb)=7.2 MeV *4* from $\beta\gamma$ coin experiment (1996Sh27) is lower by at least 2 MeV, as also Q values for ^{80}Y and ^{88}Tc decays, thus these values were not used in the mass evaluations of 2009AuZZ and 2003Au03.
^{84}Zr evaluated by T. Kibédi and J. Timar.

Atomic mass measurement: 2006Ka48 (Penning-trap system).
^{85}Mo g.s. with 3.2 s half-life is estimated to decay by delayed-proton emission to ^{84}Zr with a probability of ≈0.14% *2* (1999Hu05), but no experimental measurement of this decay mode are available.

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Theory:
  2008Af02: cranked relativistic mean-field theory
  2004La18,1997Da16: SD structure analysis, tunneling features
  1987Du02: cranking model
  1983Bu09: interacting-boson model
  1992Er02,1995Zh26: B(E2) systematics
  1992Ma39,1993Sh09,1993Wa08,1995La07: relativistic mean-field theory
  1987Du02: BCS pairing model)
  1985Bo36,1993Ki04: Hartree-Fock + BCS
  1979Bu20: shell corrections + pairing effects
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^{84}Zr Levels

μ are from g factors measured using transient-field technique in heavy-ion reactions (2001Zh44,1999Te02,1992Mo07). The evaluators have taken weighted averages of the available values. See also 2005St24 compilation where 2001Zh44 is not listed.

Cross Reference (XREF) Flags

- A ^{84}Nb ε decay
- B ^{85}Mo εp decay
- C (HI,xnγ)

E(level)[†]	J$^\pi$[@]	$T_{1/2}$[‡]	XREF	Comments
0[&]	0$^+$	25.8 min *5*	ABC	%ε+%β^+=100 $T_{1/2}$: weighted average of 25.7 min *5* (1983Sh27), 27.6 min *9* (1982Sa34), 24.0 min *13* (1982Li17) other: 27 min *2* (1982De36). Earlier reports of identification of ^{84}Zr nuclide by 1971Yu02 with half-life of 5.0 min *5* and that of 1965Za02 with half-life of 16 min *4* were, most likely, incorrect nuclidic assignments.
539.92[&] *9*	2$^+$	14.1 ps *8*	ABC	μ=+0.96 *20* μ: transient-field methods in heavy-ion γ−ray studies. Weighted average g=+0.48 *10* from g=+0.5 *1* (1992Mo07), +0.24 *35* (1999Te02), +0.5 *5* (2001Zh44). $T_{1/2}$: 2001Ra27 evaluation gives adopted $T_{1/2}$=14.1 ps 8 and B(E2)(↑)=0.438 *25*.
1119.31[a] *11*	2$^+$		A C	
1244? *1*	(0$^+$)		A	J$^\pi$: possible γ to 2$^+$; syst.
1262.81[&] *13*	4$^+$	2.8 ps *4*	A C	μ=+2.0 *9* μ: transient-field methods in heavy-ion γ−ray studies. Weighted average g=+0.51 *23*

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Adopted Levels, Gammas (continued)

^{84}Zr Levels (continued)

E(level)[†]	Jπ[@]	$T_{1/2}$[‡]	XREF	Comments
				from g=+0.4 *3* (1992Mo07), +0.70 *65*, +1.0 *8* (1999Te02), +0.5 *5* (2001Zh44).
1575.56[b] *13*	3+		A C	
1887.91[a] *20*	4+		C	
1966.6 *4*			A	Jπ: γ to 2+ suggests 2+,3,4+.
2136.39[&] *16*	6+	1.8 ps *3*	C	μ=+3.4 *21* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+0.57 *35* from g=+1.9 *11* (1992Mo07), +0.20 *56* (1999Te02), +0.6 *5* (2001Zh44). $T_{1/2}$: other: 1.9 ps *4* (1996Ch02).
2335.36[b] *20*	5+		C	
2739.9[a] *11*	6+		C	
2811.11 *19*	(4−)		C	
2825.89[c] *21*	(5−)	11 ps *4*	C	μ=+6.0 *20* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+1.2 *4* from g=+1.4 *4* (Mountford's thesis, Manchester (1991), as quoted by 1993Ch41 and 1999Te02), +0.54 *72* (1999Te02).
3078.91 *21*	(6−)		C	
3088.97[&] *19*	8+	0.39[#] ps *7*	C	μ=+10 *5* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+1.3 *6* from g=+1.5 *6* (1992Mo07), +1.0 *6* (2001Zh44). $T_{1/2}$: others: 1.25 ps *7*, (1992Mo07), 1.5 ps *4* (1996Ch02), 1.4 ps *4* (1983Pr08).
3202.3[b] *3*	7+		C	Jπ: from 2003Do01, 8+ was proposed earlier (1983Pr08,1993Ch41,1995Ji08).
3313.44[d] *23*	(6−)		C	
3493.89[c] *21*	(7−)	5.4 ps *21*	C	
3552.0 *3*	(7−)		C	
3722.6 *8*	(7−)		C	
4036.88[d] *24*	(8−)		C	
4068.7[&] *3*	10+	0.36[#] ps *3*	C	μ=+9 *5* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+0.9 *5* from g=+0.5 *8* (1992Mo07), +1.2 *7* (2001Zh44). $T_{1/2}$: others: 0.53 ps *3* (1992Mo07), 0.97 ps *21* (1996Ch02), 1.04 ps *21* (1983Pr08).
4137.6[b] *4*	9+		C	Jπ: from 2003Do01, 10+ was proposed earlier (1983Pr08,1993Ch41,1995Ji08).
4378.70[c] *22*	(9−)		C	
4587.6[e] *4*	(10+)		C	
4869.39[d] *25*	(10−)		C	
5135.9[&] *3*	12+	0.248[#] ps *22*	C	μ=+10 *7* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+0.8 *6* from g=+0.9 *7* (1992Mo07), +0.8 *6* (2001Zh44). $T_{1/2}$: others: 0.55 ps *14* (1996Ch02), 0.60 ps *3* (1992Mo07), 0.62 ps *14*(1983Pr08).
5150.3[b] *6*	11+		C	Jπ: from 2003Do01, 12+ was proposed earlier (1983Pr08,1993Ch41,1995Ji08).
5316.39[c] *24*	(11−)		C	
5616.1[e] *7*	(12+)		C	
5785.3[d] *4*	(12−)		C	
6248.3[b] *6*	(13+)		C	Jπ: from 2003Do01, 14+ was proposed earlier (1993Ch41,1995Ji08).
6302.4[&] *3*	14+	0.157[#] ps *15*	C	μ=14 *7* μ: transient-field methods in heavy-ion γ-ray studies. Weighted average g=+1.0 *5* from g=+1.3 *5* (1992Mo07), +0.5 *7* (2001Zh44).

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Adopted Levels, Gammas (continued)

^{84}Zr Levels (continued)

E(level)†	J^{π} @	$T_{1/2}$ ‡	XREF	Comments
				$T_{1/2}$: others: 0.42 ps *14* (1996Ch02), 0.340 ps *21* (1992Mo07), 0.35 ps *3* (1983Pr08).
6324.5[c] *4*	(13^{-})	0.46[#] ps *10*	C	
6643.6[e] *4*	(14^{+})		C	
6796.9[d] *4*	(14^{-})	0.51[#] ps *8*	C	
7300.1[b] *5*	(15^{+})		C	
7411.1[c] *5*	(15^{-})	0.30[#] ps *8*	C	
7498.0[&] *4*	16^{+}	0.166[#] ps *15*	C	μ=+8 *11* (2001Zh44) μ: transient-field methods in heavy-ion γ−ray studies. g=+0.5 *7* (2001Zh44). $T_{1/2}$: others: 0.15 ps *5* (1996Ch02), 0.12 ps (1992Mo07), 0.125 ps *14* (1983Pr08), g−factor estimated as +0.6 *1*.
7857.4[e] *7*	(16^{+})		C	
7929.0[d] *6*	(16^{-})	232[#] fs *19*	C	
8499.1[b] *11*	(17^{+})		C	
8608.1[c] *11*	(17^{-})	0.16[#] ps *5*	C	
8743.6[&] *4*	18^{+}	0.131[#] ps *11*	C	$T_{1/2}$: others: 0.12 ps *4* (1996Ch02), 0.111 ps *7* (1983Pr08).
9196.7[d] *11*	(18^{-})	107[#] fs *23*	C	
9220.5[e] *8*	(18^{+})		C	
9917.2[b] *15*	(19^{+})		C	
9936.2[c] *12*	(19^{-})	0.15[#] ps *4*	C	
10175.5[&] *5*	20^{+}	64[#] fs *8*	C	$T_{1/2}$: others: 69 fs *35* (1996Ch02), 21 fs *7* (1983Pr08).
10445.0[e] *8*	(20^{+})		C	
10597.6[d] *11*	(20^{-})	58[#] fs *17*	C	
11413.2[c] *15*	(21^{-})	0.09[#] ps *4*	C	
11552.2[b] *18*	(21^{+})		C	
11821.1[&] *6*	22^{+}	30[#] fs *7*	C	$T_{1/2}$: others: 35 fs *14* (1996Ch02), 14 fs *7* (1983Pr08).
12165.3[d] *12*	(22^{-})	39[#] fs *16*	C	
12257.9[e] *11*	(22^{+})		C	
13078.3[c] *18*	(23^{-})	44[#] fs *16*	C	
13666.3[&] *8*	24^{+}	13[#] fs *9*	C	$T_{1/2}$: other: <7 fs (1983Pr08).
13974.0[d] *12*	(24^{-})	21[#] fs *17*	C	
14253.8[e] *12*	(24^{+})		C	
14938.3[c] *21*	(25^{-})	84[#] fs *20*	C	
15659.9[&] *10*	26^{+}	19[#] fs *9*	C	
15947.8[f] *12*	(26^{+})		C	
16060.1[d] *16*	(26^{-})	21[#] fs *21*	C	
17013.3[c] *23*	(27^{-})		C	
17717.8[g] *10*	(25^{-})	14 fs *+40−10*	C	J^{π}: ≈(21) from 1995Ji08 and 2003Le08. $T_{1/2}$: from Doppler-shift analysis (2006Ch09). 55% branching to normal-deformed states, but only about 2% is accounted for by three transitions from this level to the normal- deformed states.
17806.0[&] *14*	(28^{+})	10[#] fs *8*	C	
18032.4[f] *12*	(28^{+})		C	
18465.1[d] *19*	(28^{-})	56[#] fs *14*	C	
19244.8[g] *14*	(27^{-})		C	45% branching to normal-deformed states.
19551[c] *3*	(29^{-})		C	
20283.0[&] *17*	(30^{+})	33[#] fs *10*	C	

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Adopted Levels, Gammas (continued)

^{84}Zr Levels (continued)

E(level)[†]	J^{π}[@]	XREF	E(level)[†]	J^{π}[@]	XREF	E(level)[†]	J^{π}[@]	XREF
20618.5[f] *16*	(30⁺)	C	23180.0[&] *20*	(32⁺)	C	29062[g] *3*	(37⁻)	C
20907.8[g] *18*	(29⁻)	C	23235.5[f] *19*	(32⁺)	C	31497[g] *3*	(39⁻)	C
21293.1[d] *21*	(30⁻)	C	24676.9[g] *23*	(33⁻)	C	32164 *3*	(39⁻)	C
22420[c] *3*	(31⁻)	C	26790.9[g] *25*	(35⁻)	C	34097[g] *3*	(41⁻)	C
22717.9[g] *20*	(31⁻)	C	26830.1[&] *23*	(34⁺)	C	36877[g] *4*	(43⁻)	C

† From least-squares fit to Eγ′s.

‡ From recoil-distance Doppler-shift and Doppler-shift attenuation from 1983Pr08, except where indicated otherwise.

\# From Doppler-shift analysis (2003Ca26), gate from above (GFA) technique used, except for the two topmost transitions in each band.

@ From stretched Q nature of intraband transitions, determined by DCO ratios. The side-band J^{π} are given in parentheses as their bandhead J^{π} are not well established.

& Band(A): g.s. band. 1992Mo07 state that there exists strong correlation between the individually deduced g-factors and that it is more meaningful to quote an average g−factor=+0.87 *10* for 8⁺ to 14⁺ states in this band.

a Band(B): γ band, α=0.

b Band(b): γ band, α=1.

c Band(C): band based on 5⁻, α=1.

d Band(c): band based on 6⁻, α=0.

e Band(D): Band based on (10⁺), α=0. Dominant configuration=$\pi(g^2_{9/2}p^{-2}_{1/2})\nu(g^6_{9/2})$ (2003Ca26).

f Band(E): band based on (26⁺).

g Band(F): SD band. Band from 2006Ch09,2003Le08 and 1995Ji08. Q(transition)=5.6 +6−5 (1999Le56,2003Le08); 5.2 *10* (1995Ji08), 4.98 *+25−30* (2005ChZZ). Configuration=$\nu5^2\pi5^1$ (1999Le56). Percent population=3 in (^{32}S,α2pγ) (2006Ch09), 6.4 in (^{29}Si,2pnγ) (2003Le08), 4 (1995Ji08); 2 in (^{32}S,α2pγ) (1995Ji08).

γ(^{84}Zr)

E_i(level)	J^{π}_i	E_{γ}[†]	I_{γ}[†]	E_f	J^{π}_f	Mult.	δ	Comments
539.92	2⁺	539.9 *1*	100	0	0⁺	E2		B(E2)(W.u.)=40 *2*
1119.31	2⁺	579.3 *1*	100 *6*	539.92	2⁺	(M1+E2)	−0.03 *1*	
		1119.4 *2*	38 *4*	0	0⁺			
1244?	(0⁺)	704[#] *1*	100	539.92	2⁺			
1262.81	4⁺	722.9 *1*	100	539.92	2⁺	E2		B(E2)(W.u.)=47 *7*
1575.56	3⁺	456.2 *1*	100 *6*	1119.31	2⁺	M1+E2	≈+0.7	
		1035.8 *2*	62 *6*	539.92	2⁺			
1887.91	4⁺	312.2 *3*	29 *14*	1575.56	3⁺			
		625.2 *3*	36 *21*	1262.81	4⁺			
		768.5 *3*	100 *13*	1119.31	2⁺	(Q)		
1966.6		1426.7 *3*	100	539.92	2⁺			
2136.39	6⁺	873.6 *1*	100	1262.81	4⁺	E2		B(E2)(W.u.)=28 *5*
2335.36	5⁺	759.8 *2*	100 *7*	1575.56	3⁺	E2		
		1072.4 *3*	31 *5*	1262.81	4⁺	D		
2739.9	6⁺	603[#] *1*	22 *11*	2136.39	6⁺			
		852 *1*	100 *33*	1887.91	4⁺			
2811.11	(4⁻)	475.3 *5*	61 *17*	2335.36	5⁺			
		922.9 *4*	77 *15*	1887.91	4⁺			
		1235.6 *2*	100 *12*	1575.56	3⁺	D		
		1548 *1*	≈48	1262.81	4⁺			
2825.89	(5⁻)	1563.1 *3*	100	1262.81	4⁺	(E1+M2)	+0.05 *4*	B(E1)(W.u.)=8.E−6 *3*; B(M2)(W.u.)=0.04 *+7−4*
3078.91	(6⁻)	253.1 *2*	50 *7*	2825.89	(5⁻)	D		
		267.7 *2*	100 *8*	2811.11	(4⁻)	Q		

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Adopted Levels, Gammas (continued)

$\gamma(^{84}Zr)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.	δ	Comments
3088.97	8+	952.6 *1*	100	2136.39	6+	E2		B(E2)(W.u.)=85 *16*
3202.3	7+	866.9 *2*	100	2335.36	5+	Q		
3313.44	(6−)	226# *1*		3088.97	8+	[M2]		
		487.5 *1*	100 *5*	2825.89	(5−)	(M1+E2)	+0.06 *2*	
3493.89	(7−)	406 *1*		3088.97	8+			
		415.0 *2*	9.7 *18*	3078.91	(6−)	D		
		668.0 *2*	17 *3*	2825.89	(5−)	E2		B(E2)(W.u.)=4.8 *21*
		1357.5 *3*	100 *8*	2136.39	6+	(E1+M2)	+0.06 *1*	B(E1)(W.u.)=2.1×10^{-5} *9*; B(M2)(W.u.)=0.18 *10*
3552.0	(7−)	473 *1*	≈23	3078.91	(6−)			
		726.4 *4*	33 *7*	2825.89	(5−)			
		1415.5 *4*	100 *12*	2136.39	6+	D		
3722.6	(7−)	1586 *1*	100	2136.39	6+			
4036.88	(8−)	543.1 *2*	39 *4*	3493.89	(7−)	D+Q		
		723.0 *4*	100 *15*	3313.44	(6−)	Q		
		834#		3202.3	7+			
		957.9 *3*	17 *5*	3078.91	(6−)			
4068.7	10+	979.7 *2*	100	3088.97	8+	E2		B(E2)(W.u.)=80 *7*
4137.6	9+	935.4 *3*	100	3202.3	7+	Q		
4378.70	(9−)	656 *1*	≈12	3722.6	(7−)			
		826.9 *3*	20 *4*	3552.0	(7−)	Q		
		884.8 *1*	100 *5*	3493.89	(7−)	Q		
		1289.6 *4*	10 *3*	3088.97	8+			
4587.6	(10+)	518.9 *3*	100 *16*	4068.7	10+	D		
		1499 *1*	60 *16*	3088.97	8+			
4869.39	(10−)	490.6 *3*	11.0 *17*	4378.70	(9−)			
		832.5 *1*	100 *6*	4036.88	(8−)	Q		
5135.9	12+	1067.2 *1*	100	4068.7	10+	E2		B(E2)(W.u.)=75 *7*
5150.3	11+	1012.7 *5*	100	4137.6	9+	Q		
5316.39	(11−)	449#		4869.39	(10−)			
		937.7 *1*	100 *9*	4378.70	(9−)	E2		
5616.1	(12+)	481		5135.9	12+			
		1028 *1*	100	4587.6	(10+)			
5785.3	(12−)	470 *1*	16 *4*	5316.39	(11−)			
		915.8 *2*	100 *10*	4869.39	(10−)	Q		
6248.3	(13+)	1098.1 *4*	100	5150.3	11+	Q		
6302.4	14+	1166.5 *1*	100	5135.9	12+	E2		B(E2)(W.u.)=76 *8*
6324.5	(13−)	1008.1 *3*	100	5316.39	(11−)	E2		B(E2)(W.u.)=54 *12*
6643.6	(14+)	1028 *1*	≈37	5616.1	(12+)			
		1507.6 *3*	100 *11*	5135.9	12+			
6796.9	(14−)	1011.6 *2*	100	5785.3	(12−)	E2		B(E2)(W.u.)=48 *8*
7300.1	(15+)	656.4 *4*	100 *13*	6643.6	(14+)	D		
		1051.9 *6*	65 *20*	6248.3	(13+)	Q		
7411.1	(15−)	615		6796.9	(14−)			
		1086.6 *2*	100	6324.5	(13−)	E2		B(E2)(W.u.)=57 *16*
7498.0	16+	1195.6 *1*	100	6302.4	14+	E2		B(E2)(W.u.)=64 *6*
7857.4	(16+)	557		7300.1	(15+)			
		1213 *1*	≈83	6643.6	(14+)			
		1555 *1*	100 *27*	6302.4	14+			
7929.0	(16−)	521		7411.1	(15−)			
		1131.9 *5*	100	6796.9	(14−)	(E2)		B(E2)(W.u.)=60 *5*
8499.1	(17+)	1199 *1*	100	7300.1	(15+)			
8608.1	(17−)	677		7929.0	(16−)			
		1197 *1*	100	7411.1	(15−)	[E2]		B(E2)(W.u.)=66 *21*

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Adopted Levels, Gammas (continued)

$\gamma(^{84}Zr)$ (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Mult.	Comments
8743.6	18+	1245.7 2	100	7498.0	16+	E2	B(E2)(W.u.)=66 6
9196.7	(18−)	589		8608.1	(17−)		
		1267 1	100	7929.0	(16−)	[E2]	B(E2)(W.u.)=74 16
9220.5	(18+)	1362		7857.4	(16+)		
		1723		7498.0	16+		
9917.2	(19+)	1418		8499.1	(17+)		
9936.2	(19−)	740		9196.7	(18−)		
		1328.1 3		8608.1	(17−)	[E2]	B(E2)(W.u.)=42 12
10175.5	20+	1431.9 3	100	8743.6	18+	E2	B(E2)(W.u.)=67 9
10445.0	(20+)	1224		9220.5	(18+)		
		1702		8743.6	18+		
10597.6	(20−)	664		9936.2	(19−)		
		1400.9 3		9196.7	(18−)	[E2]	B(E2)(W.u.)=83 25
11413.2	(21−)	813		10597.6	(20−)		
		1477 1		9936.2	(19−)	[E2]	B(E2)(W.u.)=41 19
11552.2	(21+)	1635 1		9917.2	(19+)		
11821.1	22+	1645.7 3	100	10175.5	20+	E2	B(E2)(W.u.)=72 17
12165.3	(22−)	754		11413.2	(21−)		
		1567 1		10597.6	(20−)	[E2]	B(E2)(W.u.)=7.E+1 3
12257.9	(22+)	1813		10445.0	(20+)		
13078.3	(23−)	912		12165.3	(22−)		
		1665 1		11413.2	(21−)	[E2]	B(E2)(W.u.)=46 17
13666.3	24+	1845.3 6	100	11821.1	22+	E2	B(E2)(W.u.)=9.E+1 7
13974.0	(24−)	1808 1		12165.3	(22−)	[E2]	B(E2)(W.u.)=6.E+1 6
14253.8	(24+)	1996		12257.9	(22+)		
14938.3	(25−)	1860 1		13078.3	(23−)	[E2]	B(E2)(W.u.)=14 4
15659.9	26+	1993.5 6	100	13666.3	24+	E2	B(E2)(W.u.)=43 21
15947.8	(26+)	2282 1		13666.3	24+		
16060.1	(26−)	2086 1		13974.0	(24−)	[E2]	B(E2)(W.u.)=3.E+1 +4−3
17013.3	(27−)	2075		14938.3	(25−)		
17717.8	(25−)	3464	0.004‡	14253.8	(24+)		
		3743	0.007‡	13974.0	(24−)	D+Q	Mult.: from ΔJ=1, D+Q (most likely M1+E2) from γ(θ) (2006Ch09).
		4052	0.009‡	13666.3	24+	D	Mult.: ΔJ=1, dipole from γ(θ) (2006Ch09).
17806.0	(28+)	2146 1		15659.9	26+	[E2]	B(E2)(W.u.)=6.E+1 5
18032.4	(28+)	2085 1		15947.8	(26+)		
		2372 1		15659.9	26+		
18465.1	(28−)	2405 1		16060.1	(26−)	[E2]	B(E2)(W.u.)=5.7 15
19244.8	(27−)	1527 1	0.55‡ 5	17717.8	(25−)		
19551	(29−)	2538		17013.3	(27−)	[E2]	B(E2)(W.u.)=7.5 23
20283.0	(30+)	2477 1		17806.0	(28+)		
20618.5	(30+)	2586 1		18032.4	(28+)		
20907.8	(29−)	1663 1	1.00‡ 5	19244.8	(27−)		
21293.1	(30−)	2828		18465.1	(28−)		
22420	(31−)	2869		19551	(29−)		
22717.9	(31−)	1810 1	1.00‡ 5	20907.8	(29−)		
23180.0	(32+)	2897		20283.0	(30+)		
23235.5	(32+)	2617 1		20618.5	(30+)		
24676.9	(33−)	1959 1	1.00‡ 5	22717.9	(31−)		
26790.9	(35−)	2114 1	1.00‡ 5	24676.9	(33−)		
26830.1	(34+)	3650		23180.0	(32+)		
29062	(37−)	2271 1	0.90‡ 5	26790.9	(35−)		
31497	(39−)	2435 1	0.5‡ 1	29062	(37−)		

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{84}Zr)$ (continued)

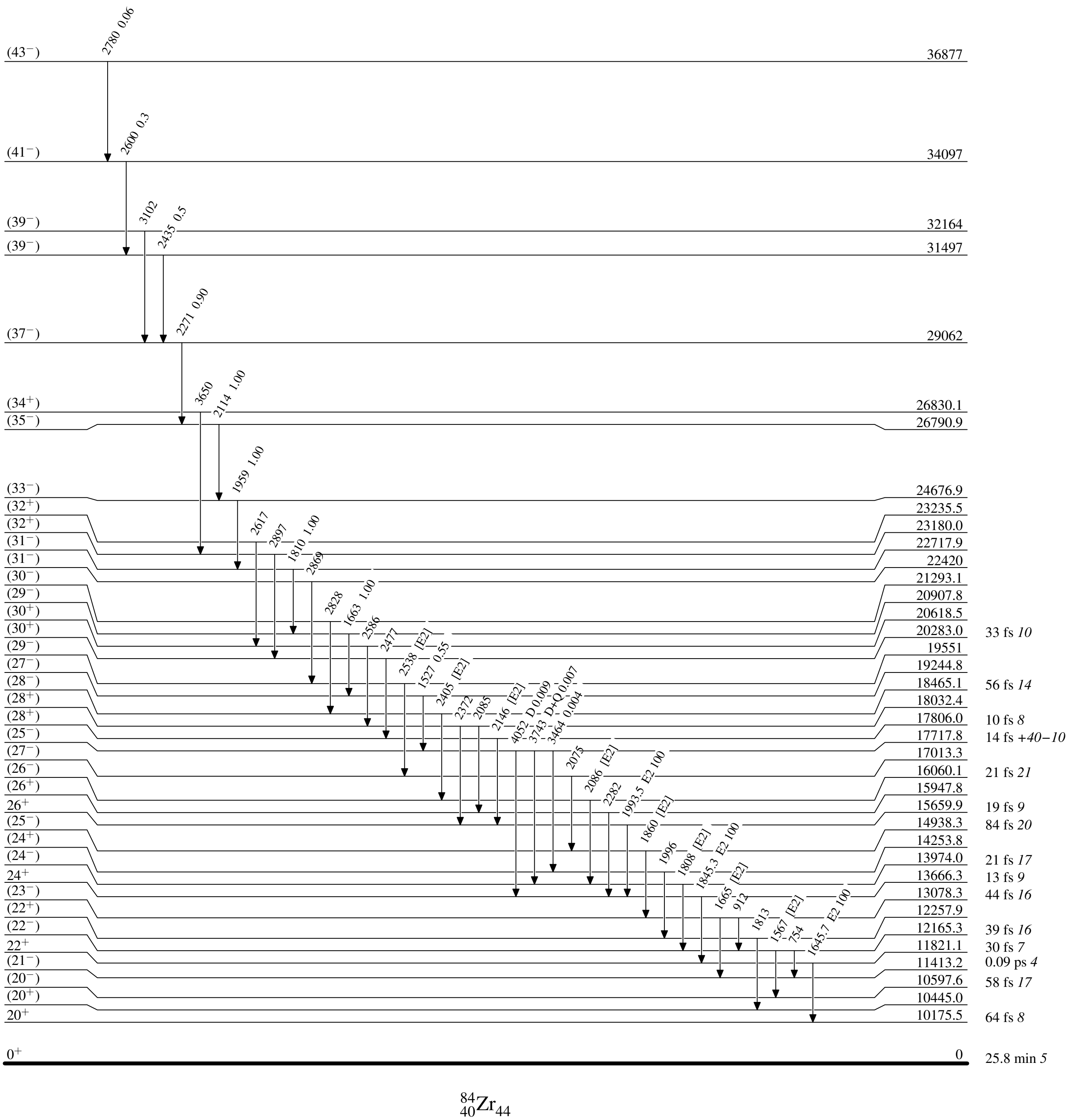
E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f
32164	(39^-)	3102		29062	(37^-)
34097	(41^-)	2600 *1*	0.3‡ *1*	31497	(39^-)
36877	(43^-)	2780	0.06‡ *5*	34097	(41^-)

† From weighted averages of all available data.
‡ Relative intensities within the SD band.
# Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



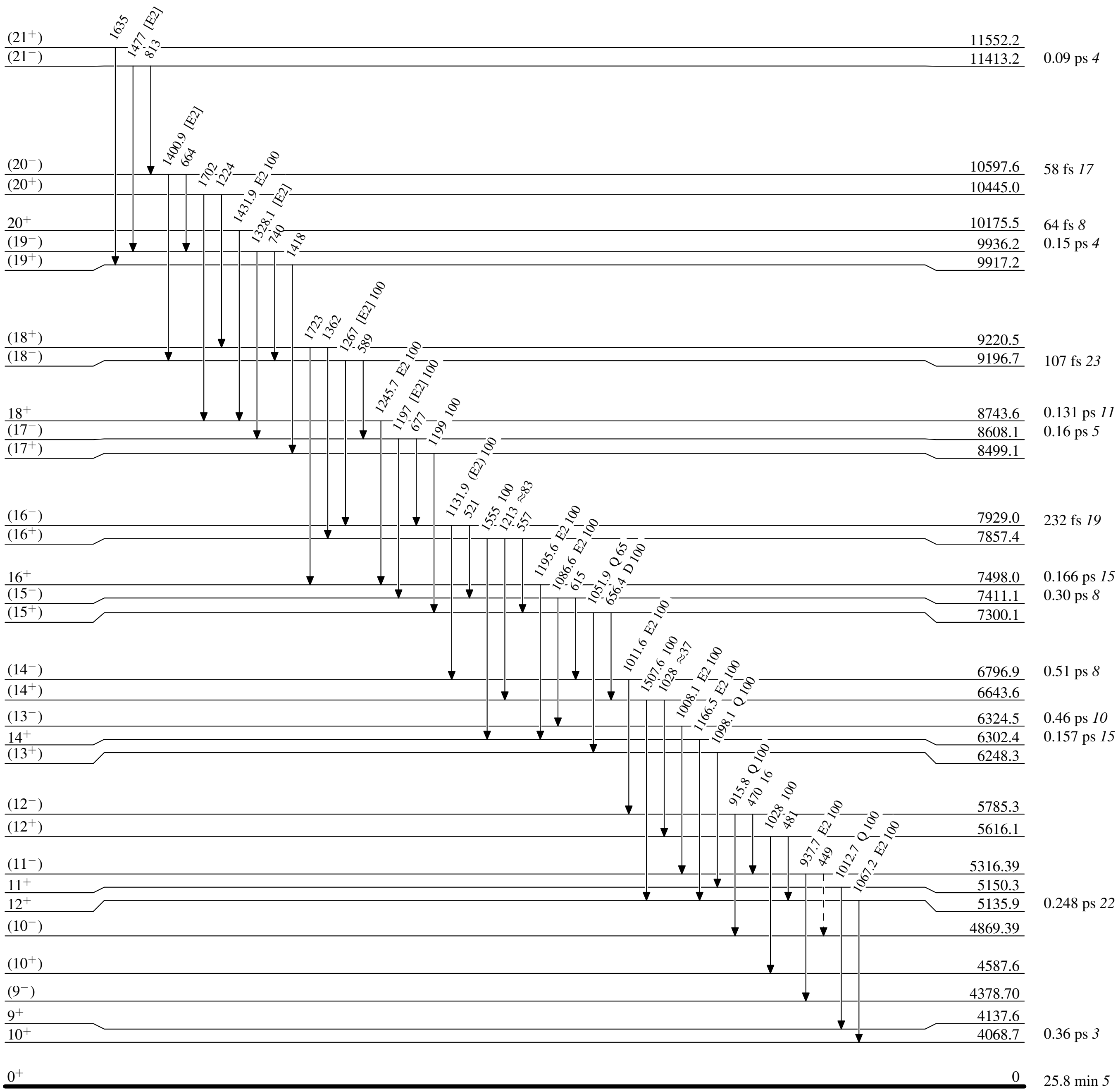
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

Legend

γ Decay (Uncertain)

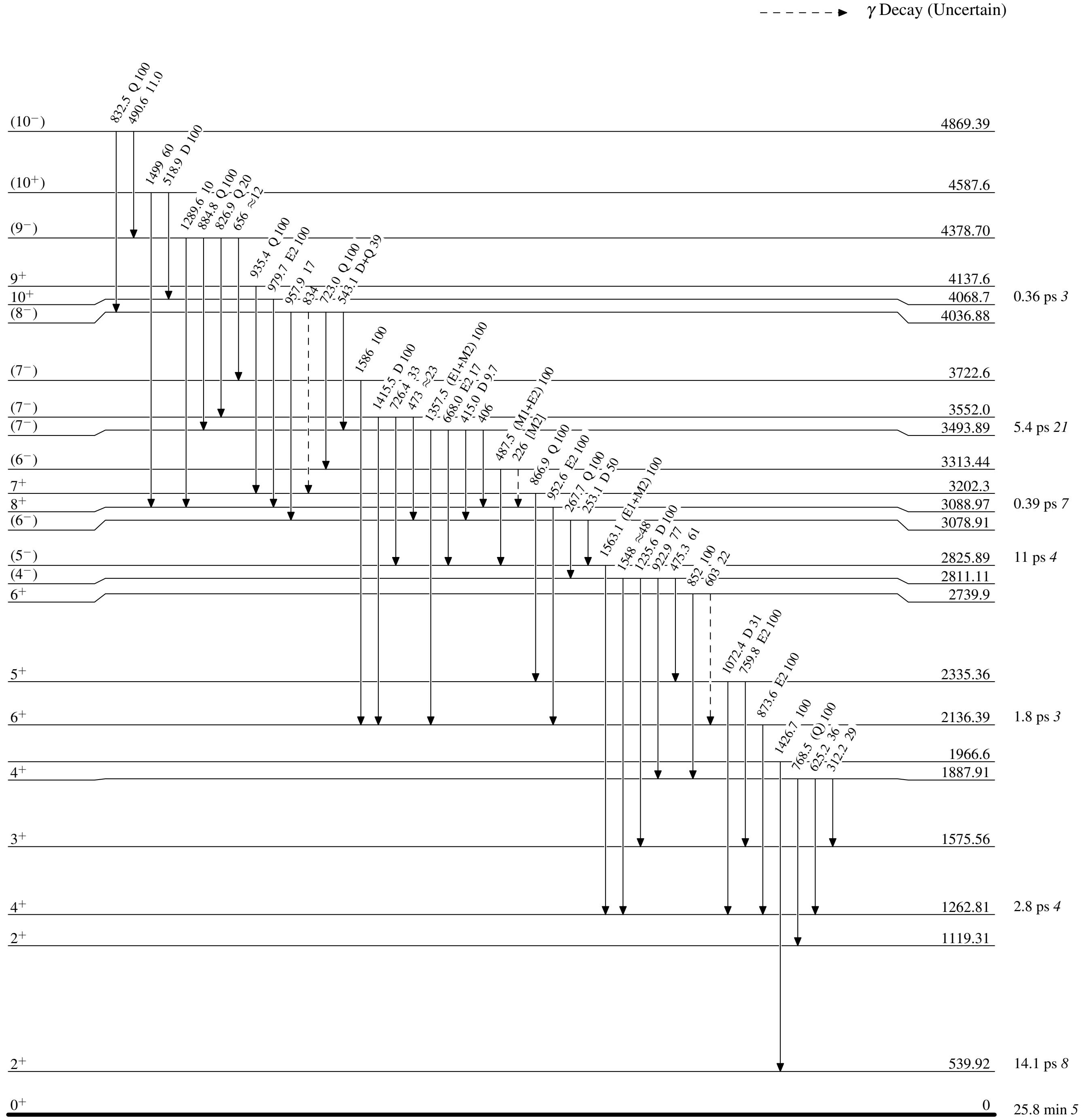


$^{84}_{40}Zr_{44}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{84}_{40}Zr_{44}$

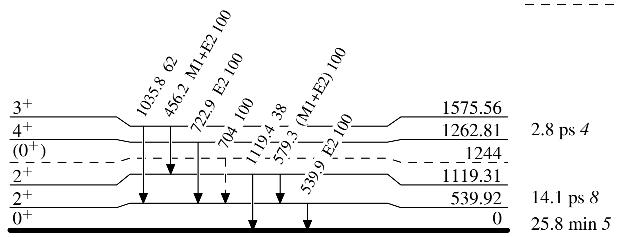
Adopted Levels, Gammas

Legend

Level Scheme (continued)

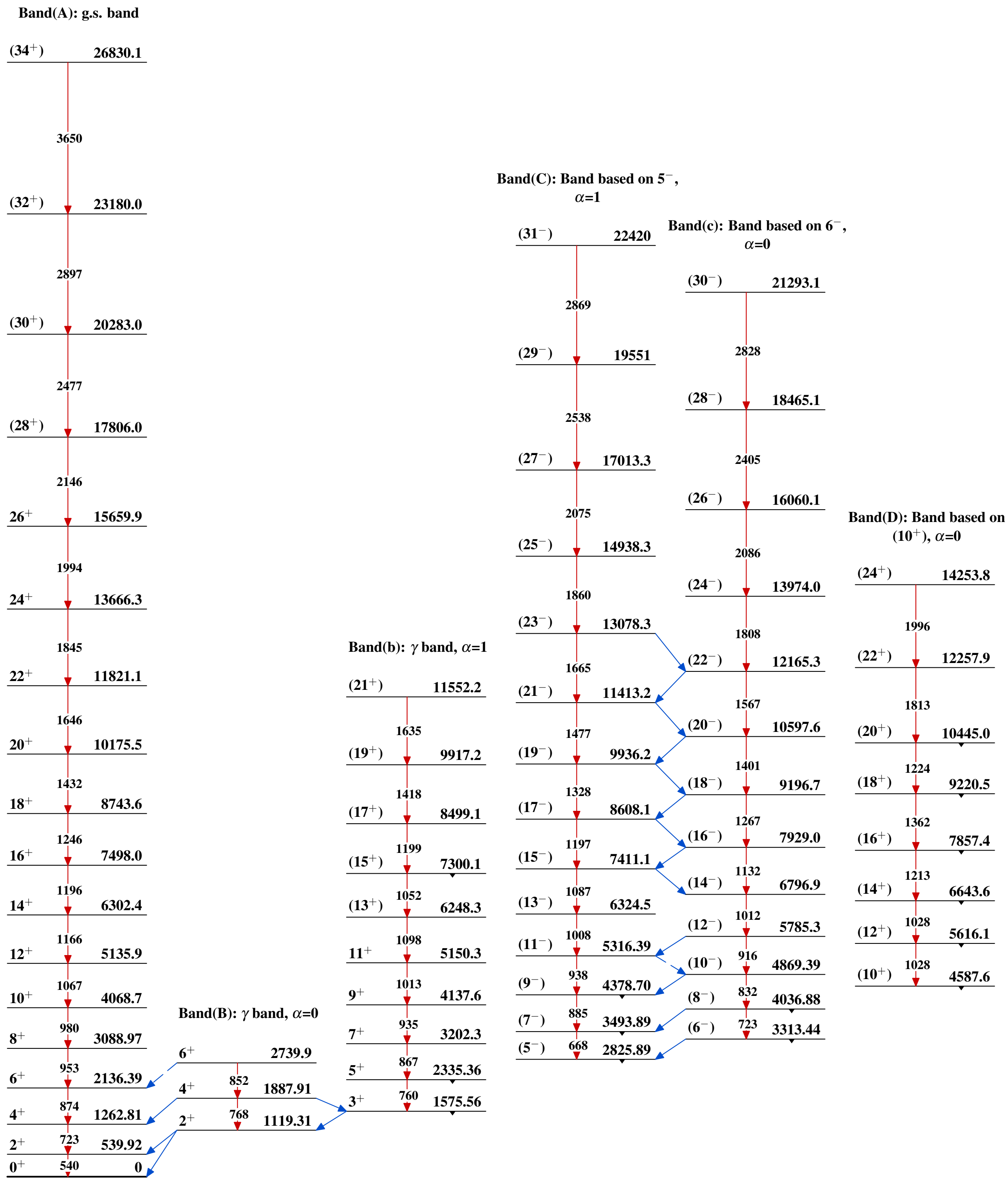
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



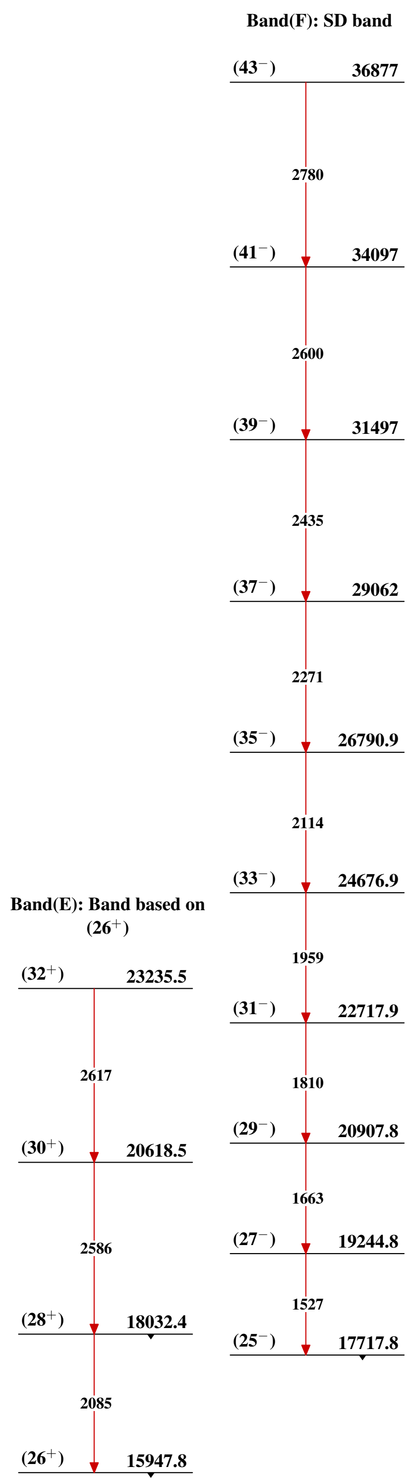
$^{84}_{40}Zr_{44}$

Adopted Levels, Gammas



$^{84}_{40}Zr_{44}$

Adopted Levels, Gammas (continued)



$^{84}_{40}Zr_{44}$