Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 191,1 (2023)	22-Aug-2023

Q(β^-)=−746.1 *13*; S(n)=6436.43 *18*; S(p)=7507.9 *8*; Q(α)=666.7 *7* 2021Wa16
S(2n)=14910.5 *9*, S(2p)=14254.9 *7* (2021Wa16).
^{167}Er identified by 1934As02 in atomic mass spectrography.
1987Ok03, 1986Ch07, 1985Be34, 1967Ca21: isotope-shift measurements for the g.s. of ^{167}Er.
1993Kr22, 1987Ni03, 1986Ni10, 1986Ch07, 1983Ch49, 1983Ch14, 1972De38, 1968Br03: hyperfine structure and hyperfine field measurements for the g.s. of ^{167}Er.
1994Ca11, 1993Br09: $\gamma(\theta)$ measurement for high energy gamma rays emitted from the giant-dipole resonance (GDR) using ^{150}Nd+^{17}O reaction.
Theoretical structure calculations:
2021Al30: calculated levels, J^π, bands, low-energy constants (LECs) for K=1/2, 3/2, 5/2 and 7/2 bands using effective field theory approach for rotational bands.
2020Pa42: calculated pairing gap, binding energy, shape phase transitions using mean-field plus various pairing interactions.
2012Ya08: calculated intrinsic magnetic moment, g factor using quasiparticle phonon model with Tamm-Dancoff approximation and QRPA.
2011Gu18: calculated binding energy, levels, J^π, mass differences using Nilsson mean-field plus the extended pairing model.
2006Fr21: analyzed resonance energies, J^π, configurations, level density parameters in the chaotic domain.
2006Sh08, 2003Sh38, 2002Sh13: calculated high-spin levels, J^π, B(E2), quadrupole moments, collective and single-particle states.
2002Hi24: calculated rotational bands levels, J^π, B(E2) pseudo-SU(3) scheme.
2001Pu02, 1998Pu05: calculated ground-state energy, neutron pairing effects. using Monte Carlo method.
1997Gi05: calculated total B(M1) strength, sum rules using geometric interpretation.
1997So02: calculated levels, J^π, B(λ), reduced widths using quasiparticle-phonon model.
1996Du06: calculated levels, J^π, E2 matrix elements using multi-phonon method.
1996Su14: calculated levels, J^π using projected shell model.
1990Ra14: calculated collective M1 levels, B(λ) using particle-core coupling model.
1987Al17: calculated levels, B(λ) using interacting boson model.
1985Ik01: calculated levels, J^π, B(λ) ratios using particle-symmetric rotor, and γ-vibrational degree of freedom.
1977Im01: calculated levels, J^π, splitting of K0±2 states, intruder states using self-Consistent quasiparticle-phonon coupling model.
1971Ka01: calculated positive-parity states, J^π using rotational model.
Other theory references for structure: 68 references retrieved from the NSR database are listed in this dataset as 'document' records.
Additional information 1.

^{167}Er Levels

Cross Reference (XREF) Flags

A	^{167}Ho β^- decay (2.98 h)	F	^{166}Er(d,p)	K	Coulomb excitation
B	^{167}Er IT decay (2.269 s)	G	^{166}Er(^{16}O,^{15}Oγ),(^{12}C,^{11}C)	L	^{167}Er(^{209}Bi,^{209}Bi′γ)
C	^{167}Tm ε decay (9.25 d)	H	^{167}Er(γ,γ'),(e,γ)	M	^{168}Er(d,t)
D	^{166}Er(n,γ) E=thermal	I	^{167}Er(n,n′γ)	N	^{168}Er(^{3}He,α)
E	^{166}Er(n,γ),(n,n):resonances	J	^{167}Er(d,d′)	O	^{166}Er(n,γ) E=th:primary

E(level)[†]	J^π[‡]	$T_{1/2}$[#]	XREF	Comments
0.0[f]	7/2+	stable	ABCD F HIJKLMN	μ=−0.5623 *4* (1984Fo02,2019StZV) Q=+3.565 *29* (1984Ta04,2021StZZ) Evaluated rms charge radius=5.2560 fm *31* (2013An02). Evaluated δ<r^2>(^{170}Er,^{167}Er)=−0.218 fm^2 *1* (2013An02). Octupole moment=−0.10 *38*, hexadecapole moment=+0.92 *58* (atomic beam, 1984Fo02). Measured Δ<r^2>(^{166}Er,^{167}Er)=0.041 fm^2 *4*; Δ<r^2>(^{167}Er,^{170}Er)=0.199 fm^2

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

E(level)[†]	J^π[‡]	$T_{1/2}$[#]	XREF	Comments
				18 (1985Be34). Other: 1987Ok03. J^π: spin from EPR (1951Bl09) and atomic beam (1962Sp03). Parity from L(d,t)=4 from 0^+ target. μ: atomic beam (1984Fo02; value of −0.56385 *12* re-evaluated by 2019StZV). Other: −0.565 *2* (1965Sm04, atomic beam). Q: muonic hfs (1983Ta14,1984Ta04,1985St28). Other measurements (not corrected for polarization): +2.827 *12* (atomic beam, 1965Sm04), +3.0 *4* (hfs, 1966Be25), +2.944 (atomic beam, 1984Fo02).
79.3221[e] *13*	$(9/2)^+$	119 ps *9*	A D F IJKLMN	J^π: L=4 in ^{166}Er(d,p); band assignment. $T_{1/2}$: from (α)(ce)(t) (microwave method) in Coulomb excitation (1971Da17). $T_{1/2}$=118 ps *5* from B(E2)=2.51 *6* in Coulomb excitation if $\delta(79\gamma)$=−0.32.
177.971[f] *7*	$(11/2)^+$	55 ps *6*	D F IJKLMN	J^π: M1+E2 99γ to $(9/2)^+$, 178γ to $7/2^+$, band assignment. $T_{1/2}$: from B(E2)=0.629 *6* (from Coulomb excitation) and adopted properties for 178.0γ.
207.801[g] *5*	$1/2^-$	2.269 s *6*	ABCD F HI LM	%IT=100 J^π: fed by primary γ in ^{166}Er(n,γ) E=thermal; E3 γ to $7/2^+$. $T_{1/2}$: from ^{167}Er IT decay (1986Ne05). Other $T_{1/2}$: 2.28 s *3* in (γ,γ'); 2.23 s *12* in (n,n$'\gamma$).
264.874[h] *6*	$3/2^-$	1.47 ns *5*	A CD F I LM	J^π: M1+E2 γ to $1/2^-$. $T_{1/2}$: from (x ray)(ce)(t) in ^{167}Tm ε decay (1968Fu09).
281.574[g] *6*	$5/2^-$		A CD F I LM	J^π: E2 γ to $1/2^-$; L=3 in ^{166}Er(d,p).
294.954[e] *8*	$(13/2)^+$[&]	29 ps *6*	FG IJKLMN	
346.549[i] *15*	$5/2^-$	1.0 ns *1*	A CD F IJ LM	J^π: E1 347γ to $7/2^+$; log $f^{1u}t$=9.44 ε branch from $1/2^+$ parent. $T_{1/2}$: from $\gamma\gamma$(t), $\beta\gamma$(t) in ^{167}Ho β^- decay (1968Fu09).
413.272[h] *7*	$(7/2)^-$		A D FG IJ LM	J^π: L=3 in ^{166}Er(d,p); band assignment.
430.023[j] *15*	$(7/2)^-$		A D FG Ij LMN	J^π: L=3 in ^{166}Er(d,p); 351γ to $(9/2)^+$.
434.447[f] *10*	$(15/2)^+$[&]	22 ps *6*	G IjKL N	
441.979[g] *12*	$(9/2)^-$		A D I LM	XREF: M(439). J^π: L=5 in ^{168}Er(d,t); γ to $5/2^-$.
531.54[k] *4*	$3/2^+$	19.3 ps *23*	A CD IjK M	J^π: E2 γ to $7/2^+$; log *ft*=7.28 from $1/2^+$ parent. $T_{1/2}$: from B(E2)=0.034 *4* (from Coulomb excitation) and adopted properties for 531.5γ.
535.79[i] *9*	$(9/2^-)$		A F Ij L	J^π: γs to $5/2^-$ and $11/2^+$; $9/2^-$ consistent with band assignment.
573.74[k] *6*	$(5/2)^+$	36 ps *12*	D F IJK M	J^π: L=2 in ^{168}Er(d,t); 494γ to $(9/2)^+$. $T_{1/2}$: from Coulomb excitation.
587.376[e] *11*	$(17/2)^+$[&]	11.1 ps *21*	IJKL N	
591.79 *15*			D	J^π: γ to $7/2^+$.
598 *3*			F	
640.05[k] *11*	$(7/2)^+$[c]		IJK	
645.21[h] *14*	$(11/2^-)$		F I LM	XREF: M(643). J^π: L=(5) in ^{168}Er(d,t); $11/2^-$ consistent with band assignment.
662.48[j] *24*	$(11/2^-)$		f I L	J^π: γs to $(9/2^-)$ and $(13/2)^+$; $11/2^-$ consistent with band assignment.
667.894[l] *20*	$(5/2)^-$		A D f I M	J^π: log *ft*=4.68 from $7/2^-$; M1+E2 321γ to $5/2^-$ 347; 460γ to $1/2^-$ 208.
683.31[g] *15*	$(13/2^-)$[b]		I L	
710.98[n] *9*	$(11/2^+)$[c]		IjKL	
711.11[k] *12*	$(9/2^+)$[b]		F Ij M	
730 *2*			J	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	XREF	Comments
745.24[l] 12	(7/2)⁻		A D I	Jπ: allowed β transition (log ft=5.49) from 7/2⁻; 745.0γ to 7/2⁺; 480.0γ to 3/2⁻; Alaga rule for γ transitions to 5/2[512] and 1/2[521] band members.
752.69[o] 9	(3/2)⁻		D F I M	Jπ: L=1 in ^{166}Er(d,p); 3/2⁻ consistent with band assignment.
763.47[p] 8	(1/2)⁻		D F I	XREF: F(767). Jπ: fed by primary γ in ^{166}Er(n,γ) E=thermal; π from Iγ/Eγ^3 values in average-resonance capture (1970Bo29); 1/2⁻ consistent with band assignment.
772.688[f] 14	(19/2)⁺[&]	6.9 ps 14	IJKL N	
790.97[k] 20	(11/2⁺)[b]		IJ	
801.64[p] 9	(3/2)⁻		D F I M	Jπ: L=1 in ^{166}Er(d,p); 371γ to (7/2)⁻ 430.
810.1? 5			I	Jπ: tentative γ to (15/2)⁺, 434.
810.52[q] 8	(5/2)⁺[c]		D IJK MN	
812.0[i] 7	(13/2⁻)		L	
812.48[o] 15	(5/2⁻)[b]		I	
828.27[m] 14	(13/2)⁺[c]		IJ L	
845.26[l] 22	(9/2)⁻		I MN	XREF: M(843). Jπ: L=5 in ^{168}Er(d,t); 9/2⁻ consistent with band assignment.
856.47[p] 20	(5/2)⁻		F I M	XREF: M(854). Jπ: L=3 in ^{168}Er(d,t); 5/2⁻ consistent with band assignment.
873.06[q] 14	(7/2)⁺[c]		IJK	
878.4[k] 3	(13/2⁺)[b]		I	
894.69[o] 12	(7/2)⁻		F I MN	Jπ: L=3 in ^{166}Er(d,p); 7/2⁻ consistent with band assignment.
910 2			J M	E(level): from (d,d′).
932.97[q] 12	(9/2)⁺[c]		F IJ MN	XREF: F(927).
942.95[p] 20	(7/2)⁻		F I M	Jπ: L=3 in ^{168}Er(d,t); 7/2⁻ consistent with band assignment.
954.53[h] 25	(15/2⁻)[b]		F I L	XREF: F(953).
955.00[e] 4	(21/2)⁺[&]	3.5 ps 7	KL	
966.10[n] 16	(15/2)⁺[c]		IJ L	
968.4[l] 11	(11/2⁻)		M	Jπ: L=(5) in ^{168}Er(d,t); 11/2⁻ consistent with band assignment.
979.8[j] 8	(15/2⁻)		L	
998.73[g] 21	(17/2⁻)[b]		I L	
1002[o] 2	(9/2⁻)		M	Jπ: L=(5) in ^{168}Er(d,t); 9/2⁻ consistent with band assignment.
1012[q] 4	(11/2⁺)		J	
1041.4[p] 3	(9/2⁻)[b]		IJ	
1053.1[r] 4	(11/2⁻)		F I MN	Jπ: L=(5) in ^{168}Er(d,t); 11/2⁻ consistent with band assignment.
1058.24 17	(11/2⁺)[b]		Ij	
1058.96 13			D j	
1086.27 16	3/2⁺		D F I MN	Jπ: fed by primary γ in ^{166}Er(n,γ) E=thermal; L=2 in ^{166}Er(d,p).
1110.4[q] 3	(13/2)⁺		IJ MN	Jπ: L=6 in ^{168}Er(d,t); 13/2⁺ consistent with band assignment.
1121 2			J	
1125.2[m] 3	(17/2⁺)[b]		I L	
1135.32 23	1/2⁺		D F MN	Jπ: L=0 in ^{166}Er(d,p).
1165.9[i] 9	(17/2⁻)		L	
1171.1 8	(9/2⁻)		F IJ M	Jπ: L=(5) in ^{168}Er(d,t); γ to 7/2⁺ g.s.
1178.91 22	1/2,3/2[a]		D	
1190 5			M	
1194.20[f] 10	(23/2)⁺[&]	2.4 ps 5	KL	
1198.6[v] 6	(19/2⁺)		L	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
1205 *5*	1/2^{+}	M	J^{π}: L=0 in ^{168}Er(d,t).
1206.0 *3*	(≤7/2)	D	J^{π}: gammas to 3/2^{-} and 5/2^{-}.
1216.8?[r] *5*	(13/2^{-})[b]	I	
1221 *2*		J M	E(level): from (d,d′).
1227.17 *17*	1/2,3/2[a]	D	
1253[t] *2*	(9/2^{+})	F J M	J^{π}: from analysis of (d,d′) data by 1978Kv01. E(level): from (d,d′).
1254.4 *3*		D	
1283 *2*		F J M	E(level): from (d,d′).
1299.6[n] *5*	(19/2^{+})	L	
1302 *2*	5/2^{-},7/2^{-}	f M	XREF: f(1309). J^{π}: L=3 in ^{168}Er(d,t).
1320 *20*	(9/2^{-})	fG	XREF: f(1309). J^{π}: from relative population strengths in heavy-ion transfer reactions; 9/2^{-} consistent with systematics for position of 9/2^{-} 7/2[514] state in Er isotopes.
1332 *5*		F	
1336.9[h] *4*	(19/2^{-})[b]	I L	
1352 *5*		M	
1368.8[j] *11*	(19/2^{-})	L	
1377 *2*	3/2^{+},5/2^{+}	M	J^{π}: L=2 in ^{168}Er(d,t).
1379.5[g] *9*	(21/2^{-})	L	
1382[t] *2*	(11/2^{+})	J	J^{π}: from analysis of (d,d′) data by 1978Kv01.
1384.40[s] *12*	(3/2)$^{-}$	D F	J^{π}: L=1 in ^{166}Er(d,p); 3/2^{-} consistent with band assignment.
1394.0[e] *6*	(25/2^{+})[&]	KL	
1410 *2*		F J	E(level): from (d,d′).
1422.7[u] *5*	(21/2^{+})	L	
1426 *2*	1/2^{+}	M	J^{π}: L=0 in ^{168}Er(d,t).
1440[s] *5*	(5/2)$^{-}$	F	J^{π}: L(d,p)=3; 5/2^{-} consistent with band assignment.
1440 *5*	1/2^{+}	M	J^{π}: L=0 in ^{168}Er(d,t).
1496.5[m] *5*	(21/2^{+})	L	
1519 *15*		mN	E(level): from ^{168}Er(^{3}He,α).
1526[s] *5*	(7/2^{-})[d]	F m	E(level): from (d,p).
1530[t] *20*	(13/2^{+})	G	J^{π} and band assignment from relative populations in (^{16}O,^{15}O) and (^{12}C,^{11}C) reactions; consistent with similar states in ^{169}Er and ^{171}Er (cf. level-scheme Fig. 3 in 1981Bo16).
1536 *5*		M	
1545.4 *5*	1/2,3/2[a]	D	
1550 *2*		F J M	E(level): from (d,d′).
1553.5[v] *6*	(23/2^{+})	L	
1558 *5*		M	
1565.2 *16*	1/2,3/2[a]	D	
1590 *5*		M	
1596 *5*		F	
1607 *2*		J	
1625 *5*		M	
1634[s] *2*	(9/2^{-})[d]	F J	E(level): from (d,d′).
1641.2 *5*	1/2^{-},3/2	D M	J^{π}: fed by primary γ in ^{166}Er(n,γ) E=thermal; γ to 5/2^{-}.
1645 *5*		F	
1649.3 *5*	1/2,3/2[a]	D	
1657 *5*		M	
1661.8 *3*	1/2,3/2[a]	D	
1681 *2*		F J	E(level): from (d,d′).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
1698.6[f] 8	(27/2+)	L	
1712.2[n] 6	(23/2+)	L	
1719.6 10	1/2,3/2[a]	D F J	
1738 2		J	
1747 5		F M	E(level): from (d,p).
1754.8 3	1/2,3/2[a]	D N	
1775 2		F J	E(level): from (d,d′).
1782.2[h] 9	(23/2−)	L	
1789 2		J	
1792.2 11	1/2,3/2[a]	D	
1800 5		F	
1810.3 13	1/2,3/2[a]	D m	
1815 5		F m	E(level): from (d,p).
1816.5[g] 13	(25/2−)	L	
1818.8[j] 15	(23/2−)	L	
1837.0[u] 6	(25/2+)	L	
1843 2		F J	E(level): from (d,d′).
1853 5		M	
1868.9 11	1/2,3/2[a]	D F	
1893 5		M	
1901.9[e] 9	(29/2+)	L	
1911 2		F J	E(level): from (d,d′).
1923 3	1/2,3/2[a]	D	
1928 2		J	
1940 5		M	
1948.2[m] 6	(25/2+)	L	
1949.5 12	1/2,3/2[a]	D	
1961 15		F	
1976 15		F	
1994.7[v] 8	(27/2+)	L	
1995 15		F	
2016 15		F	
2050 15		F	
2064.2 16	1/2,3/2[a]	D F	XREF: F(2067).
2095 5	1/2,3/2[a]	D	
2105 5	1/2,3/2[a]	D	
2113 15		F	
2129 15		F	
2138 15		F	
2156 15		F	
2169 15		F	
2190 15		F	
2201 15		F	
2202.1[n] 8	(27/2+)	L	
2225 15		F	
2238 15		F	
2249 15		F	
2269 15		F	
2283.3[f] 10	(31/2+)	L	
2285.2[h] 14	(27/2−)	L	
2305.5[g] 17	(29/2−)	L	
2319 15		F H	E(level): from (d,p).
2320.8[j] 18	(27/2−)	L	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
2327.0[u] *9*	(29/2$^+$)	L	
2336 *15*		F	
2361 *15*		F	
2384 *15*		F	
2408 *15*		F	
2422 *15*		F	
2447 *15*		F	
2462 *15*		F	
2476.9[e] *14*	(33/2$^+$)	L	
2477.2[m] *9*	(29/2$^+$)	L	
2489 *15*		F	
2518 *15*		F	
2528.4[v] *11*	(31/2$^+$)	L	
2530 *15*	+[@]	F H	E(level): from (d,p).
2552 *15*		F	
2562 *15*		F	
2576 *15*		F N	E(level): from (d,p).
2610 *15*		F	
2633 *15*		F	
2656 *15*		F	
2725 *15*	+[@]	H	
2766.1[n] *13*	(31/2$^+$)	L	
2833.2[h] *17*	31/2$^-$	L	
2842.5[g] *20*	(33/2$^-$)	L	
2946.3[f] *15*	(35/2$^+$)	L	
2950 *15*	+[@]	H	
3080 *15*	+[@]	H	
3081.2[m] *14*	(33/2$^+$)	L	
3119.0[e] *17*	(37/2$^+$)	L	
3152.4[v] *15*	(35/2$^+$)	L	
3255 *15*	+[@]	H	
3355 *15*	+[@]	H	
3426.5[g] *22*	(37/2$^-$)	L	
3475 *15*		H	
3756.2[m] *17*	(37/2$^+$)	L	
(6436.30 *20*)	1/2$^+$	D	S(n)(^{167}Er)=6436.43 *18* (2021Wa16). J^{π}: s-wave capture in ^{166}Er g.s.

[†] From a least-squares fit to Eγ data for levels connected with γ transitions, and from transfer reactions for other levels, unless otherwise noted.

[‡] Values given without comment are from ^{167}Er(^{209}Bi,^{209}Bi$'\gamma$), based on observed band structure.

[#] From Doppler-broadened γ-ray line shapes in Coulomb excitation (1985Oh03), except where noted.

[@] Level excited by M1+E2 transition from 7/2$^+$ in ^{167}Er(γ,γ'), (e,γ).

[&] Continuing J^{π} for g.s. band established by band structure and coincident cascades of stretched Q and D+Q γ transitions.

[a] Fed by primary γ in ^{166}Er(n,γ) E=thermal.

[b] From rotational-band assignments based on combined analysis of γ-ray energy fits and intensity patterns in ^{167}Er(n,γ) E=thermal and ^{167}Er(n,n$'\gamma$) (1979Bo44).

[c] From analysis of cross-section ratios and $\sigma(\theta)$ in ^{167}Er(d,d$'$).

[d] (7/2$^-$) for 1526 level and (9/2$^-$) for 1634 level established by combined analysis of the relative populations of band members,

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{167}Er Levels (continued)

absolute cross sections, and angular distributions in ^{166}Er(d,p) and ^{168}Er(d,t).

[e] Band(A): ν7/2[633],α=+1/2. Band assignment from 1997Ge07. A=8.9, B=+3 (J=9/2, 13/2, 17/2 levels).

[f] Band(a): ν7/2[633],α=−1/2. Band assignment from 1997Ge07. A=8.8, B=+5 (J=7/2, 11/2, 15/2 levels).

[g] Band(B): ν1/2[521],α=+1/2. Band assignment from 1997Ge07. A=11.3, B=−10.5, a=+0.69 (J=1/2, 3/2, 5/2, 7/2 members of 1/2[521] band).

[h] Band(b): ν1/2[521],α=−1/2. Band assignment from 1997Ge07.

[i] Band(C): ν5/2[512],α=+1/2. Band assignment from 1997Ge07. A=12.0, B=−8 (J=5/2, 9/2, 13/2 levels).

[j] Band(c): ν5/2[512],α=−1/2. Band assignment from 1997Ge07. A=11.9, B=−6 (J=7/2, 11/2, 15/2 levels).

[k] Band(D): γ-vibrational band based on 3/2$^+$. A=7.7, B=+95 (J=3/2, 5/2, 7/2 levels).

[l] Band(E): ν5/2[523]. A=11.0, B=+3 (J=5/2, 7/2, 9/2 levels).

[m] Band(F): 11/2$^+$,α=+1/2, γ-vibrational band. Band assignment from 1997Ge07. A=9.3, B=−0.1 (J=13/2, 17/2, 21/2 levels).

[n] Band(f): 11/2$^+$,α=−1/2, γ−vibrational band. Band assignment from 1997Ge07. A=8.9, B=+2 (J=11/2, 15/2, 19/2 levels).

[o] Band(G): ν3/2[521]. A=12.0 (J=3/2 and 5/2 levels).

[p] Band(H): ν1/2[510]. A=11.8, a=+0.07 (J=1/2, 3/2, 5/2 levels).

[q] Band(I): ν5/2[642]. Coriolis perturbed level spacing.

[r] Band(J): ν11/2[505]. A=12.6.

[s] Band(K): ν3/2[512]. A=11.1 (J=3/2, 5/2 levels).

[t] Band(L): ν9/2[624]. A=11.7 (J=9/2 and 11/2 levels).

[u] Band(M): Band based on (21/2$^+$),α=+1/2. Band assignment from 1997Ge07.

[v] Band(m): Band based on (19/2$^+$),α=−1/2. Band assignment from 1997Ge07.

$\gamma(^{167}$Er)

E_i(level)	J^{π}_i	E_γ[†]	I_γ[‡]	E_f	J^{π}_f	Mult.[#]	δ[#]	α[e]	Comments
79.3221	(9/2)$^+$	79.3219 13	100	0.0	7/2$^+$	M1+E2[a]	−0.32[a] 3	5.70 9	B(M1)(W.u.)=0.0502 +42−37; B(E2)(W.u.)=3.8×10^2 +8−7
177.971	(11/2)$^+$	98.633 15	100[a] 10	79.3221	(9/2)$^+$	M1+E2[a]	−0.28[a] 3	2.97 4	B(M1)(W.u.)=0.088 +11−9; B(E2)(W.u.)=3.3×10^2 +8−7
		177.98[a] 1	32.8[a] 16	0.0	7/2$^+$	[E2]		0.373 5	B(E2)(W.u.)=78 +14−10
207.801	1/2$^-$	207.801 5	100	0.0	7/2$^+$	E3		1.380 19	B(E3)(W.u.)=8.12×10^{-3} 7
264.874	3/2$^-$	57.0723 12	100 17	207.801	1/2$^-$	M1+E2	0.352 16	5.02 23	B(M1)(W.u.)=0.0119 6; B(E2)(W.u.)=213 20 I_γ: from ε decay.
		264.9[b]	<1.6[b]	0.0	7/2$^+$	[M2]		0.833 12	B(M2)(W.u.)<1.8
281.574	5/2$^-$	(16.700 9)		264.874	3/2$^-$	[M1]		89.0 13	E_γ: from level energy difference. I(γ+ce)≈250 from intensity balance at 264.9 level in β^- decay.
		73.775 4	100 38	207.801	1/2$^-$	E2[@]		9.66 14	I_γ: from β^- decay.
294.954	(13/2)$^+$	116.99[a] 1	100[a] 10	177.971	(11/2)$^+$	M1+E2[a]	−0.23[a] 11	1.81 3	B(M1)(W.u.)=0.117 +31−22; B(E2)(W.u.)=2.1×10^2 +26−15 Other Eγ: 116.77 8 in (n,n′γ).
		215.63[a] 1	86[a] 5	79.3221	(9/2)$^+$	E2[a]		0.196 3	B(E2)(W.u.)=172 +49−32 Other Eγ: 215.48 15 in (n,n′γ). Other Iγ: 48 3 in (n,n′γ).
346.549	5/2$^-$	346.547 15	100	0.0	7/2$^+$	E1[@]		0.01304 18	B(E1)(W.u.)=5.3×10^{-6} +6−5
413.272	(7/2)$^-$	131.700 4	87 6	281.574	5/2$^-$				I_γ: weighted average from (n,γ) and (n,n′γ).
		148.394 6	100 6	264.874	3/2$^-$				I_γ: weighted average from (n,γ) and (n,n′γ).
430.023	(7/2)$^-$	83.4733 25	100 22	346.549	5/2$^-$	M1+E2[@]	0.40[@] +50−13	4.9 4	I_γ: from β^- decay.
		351.31 25	50 40	79.3221	(9/2)$^+$	[E1]			I_γ: from Iγ=10.3 19 based on I(351γ):I(430γ)=3.3 6:2.6 4 in (n,n′γ) and Iγ=91 27 in (n,γ). Eγ(430) is a little high in (n,n′γ); this may perhaps indicate the presence of a contaminant, resulting in an overestimate of I(430γ) and an underestimate of 351γ branching. Iγ(351)Iγ(430)=3.3 6/2.6 4 in (n,n′γ), where 83γ was masked by an impurity.
		430.0 3	8.1 22	0.0	7/2$^+$				E_γ: weighted average of 430.0 3 in (n,γ) and 430.0 5 in β^- decay. Other Eγ: 430.8 2 in (n,n′γ). I_γ: from β^- decay. Other Iγ: ≈25 in (n,γ) after large correction for contaminant. Iγ(430)Iγ(351)=2.6 4/3.3 6 in (n,n′γ), where 83γ was masked by an impurity.

$^{167}_{68}$Er$_{99}$-8

Adopted Levels, Gammas (continued)

$\gamma(^{167}Er)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[#]	α[e]	Comments
434.447	(15/2)+	139.50[a] *1*	62[a] *7*	294.954	(13/2)+	M1+E2[a]	−0.25[a] *9*	1.088 *19*	B(M1)(W.u.)=0.089 *+34−21*; B(E2)(W.u.)=1.4×10² *+13−8*
		256.47[a] *1*	100[a] *5*	177.971	(11/2)+	E2[a]		0.1122 *16*	B(E2)(W.u.)=1.8×10² *+7−4* Other Eγ: 256.25 *15* in (n,n′γ).
441.979	(9/2)−	148[&]		294.954	(13/2)+				
		160.406 *10*	100[d] *15*	281.574	5/2−				
531.54	3/2+	250.2[b] *5*	0.14[b] *3*	281.574	5/2−	[E1]		0.0292 *5*	B(E1)(W.u.)=1.01×10⁻⁶ *+27−24*
		266.5[b] *5*	0.14[b] *3*	264.874	3/2−	E1		0.0249 *4*	B(E1)(W.u.)=8.4×10⁻⁷ *+22−20*
		323.7[b] *5*	0.13[b] *3*	207.801	1/2−	E1		0.01538 *22*	B(E1)(W.u.)=4.4×10⁻⁷ *+12−11*
		531.54 *4*	100	0.0	7/2+	E2		0.01407 *20*	B(E2)(W.u.)=12.4 *+17−13* Iγ: from ε decay.
535.79	(9/2−)	105.75[c] *10*	100 *16*	430.023	(7/2)−				
		189.3[c] *3*	32 *3*	346.549	5/2−				
		358.0[c] *4*	33 *3*	177.971	(11/2)+				
		456.4[c] *3*	<8.2	79.3221	(9/2)+				Iγ: 8.2 *25* for doublet.
573.74	(5/2)+	494.39 *8*	45 *5*	79.3221	(9/2)+	[E2]		0.01693 *24*	B(E2)(W.u.)=3.0 *+16−8* Iγ: average from (n,γ) and (n,n′γ).
		573.78 *9*	100 *5*	0.0	7/2+				
587.376	(17/2)+	152.93[a] *1*	51 *14*	434.447	(15/2)+	M1+E2[a]	−0.31[a] *8*	0.831 *16*	B(M1)(W.u.)=0.129 *+34−32*; B(E2)(W.u.)=2.5×10² *+15−12* Other I(153γ):I(292γ)=36 *3*:100 *50* in Coulomb excitation.
		292.42[a] *1*	100 *11*	294.954	(13/2)+	E2[a]		0.0747 *11*	B(E2)(W.u.)=2.2×10² *+7−4*
591.79		591.82 *15*	100	0.0	7/2+				
640.05	(7/2)+	463.0[a]		177.971	(11/2)+				
		560.67[c] *15*	100 *6*	79.3221	(9/2)+				
		640.08[c] *16*	43 *3*	0.0	7/2+				
645.21	(11/2−)	203.2[c] *2*	55 *4*	441.979	(9/2)−				
		232.0[c] *2*	100 *6*	413.272	(7/2)−				
662.48	(11/2−)	127.0[c] *3*	100 *16*	535.79	(9/2−)				
		234[&]		430.023	(7/2)−				
		366.6[c] *4*	19 *4*	294.954	(13/2)+				
667.894	(5/2)−	131[@g] *1*	≈0.19[@]	535.79	(9/2−)				
		136.46[g] *4*	1.8[d]	531.54	3/2+				
		237.873 *15*	19.6 *16*	430.023	(7/2)−	M1[@]		0.250 *4*	Iγ: weighted average from β− decay, (n,γ) and (n,n′γ).
		254.7[@] *2*	0.88[@] *24*	413.272	(7/2)−				

From ENSDF

Adopted Levels, Gammas (continued)

$\gamma(^{167}Er)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[e]	Comments
667.894	(5/2)⁻	321.336 25	100 4	346.549	5/2⁻	M1(+E2)[@]	<0.8[@]	0.100 11	I_γ: weighted average from β^- decay, (n,γ) and (n,n′γ).
		386.41 15	13.9 7	281.574	5/2⁻	M1[@]		0.0681 10	E_γ,I_γ: weighted average from β^- decay, (n,γ) and (n,n′γ).
		403.02 15	13.8 7	264.874	3/2⁻				E_γ: weighted average from β^- decay, (n,γ) and (n,n′γ). I_γ: from β^- decay. Others: 16.7 24 in (n,γ), 31 6 in (n,n′γ).
		460.0[@] 2	8.8[@] 10	207.801	1/2⁻				
		668.0[@] 5	1.0[@] 5	0.0	7/2⁺				Other Iγ: 7.1 36 in (n,γ) for complex line.
683.31	(13/2⁻)	241.32[c] 15	100	441.979	(9/2)⁻				
710.98	(11/2⁺)	533.5[ag]		177.971	(11/2)⁺				
		631.79[c] 12		79.3221	(9/2)⁺				
		710.84[c] 13		0.0	7/2⁺				
711.11	(9/2⁺)	631.79[c] 12	100	79.3221	(9/2)⁺				
745.24	(7/2)⁻	208.7[@] 4	19[@] 9	535.79	(9/2⁻)				
		303[@g] 1	≤3.8[@]	441.979	(9/2)⁻				
		315.0[@] 5	81[@] 19	430.023	(7/2)⁻				Other Iγ: ≈20 from (n,γ) E=thermal for Eγ=315.57 20 contaminated line.
		332[@] 1	19[@] 9	413.272	(7/2)⁻				
		398.86 14	100 19	346.549	5/2⁻				E_γ: weighted average from β^- decay and (n,γ). Complex line at 398.85 10 in (n,n′γ). I_γ: from β^- decay.
		463[@] 1	50[@] 19	281.574	5/2⁻				E_γ: Complex line at 462.4 2 in (n,n′γ).
		480.0[@] 5	16[@] 3	264.874	3/2⁻				
		745.0[@] 5	19[@] 6	0.0	7/2⁺				
752.69	(3/2)⁻	471.4 3	31 13	281.574	5/2⁻				I_γ: from (n,γ).
		487.88 12	72 12	264.874	3/2⁻				E_γ,I_γ: weighted average from (n,γ) and (n,n′γ).
		544.75 15	100 15	207.801	1/2⁻				E_γ: weighted average from (n,γ) and (n,n′γ).
763.47	(1/2)⁻	416.99 18	≈26[d]	346.549	5/2⁻				
		498.57 9	100[d] 6	264.874	3/2⁻				
772.688	(19/2)⁺	185.3[a] 2	17[a] 3	587.376	(17/2)⁺	M1+E2[a]	−0.35[a] 15	0.478 17	B(M1)(W.u.)=0.059 +17−14; B(E2)(W.u.)=1.0×10^2 +9−7
		338.24[a] 1	100[a] 6	434.447	(15/2)⁺	E2[a]		0.0483 7	B(E2)(W.u.)=2.6×10^2 +7−5
790.97	(11/2⁺)	613.0[fc] 2	100[f]	177.971	(11/2)⁺				
801.64	(3/2)⁻	371.35 18	8.8[d] 19	430.023	(7/2)⁻				
		455.32 25	≈9[d]	346.549	5/2⁻				

$^{167}_{68}Er_{99}$-10

γ(^{167}Er) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[#]	α[e]	Comments
801.64	(3/2)$^-$	520.6 *5*	≈14[d]	281.574	5/2$^-$				
		593.87 *12*	100[d] *15*	207.801	1/2$^-$				
810.1?		375.7[cg] *5*	100	434.447	(15/2)$^+$				
810.52	(5/2)$^+$	528.7[g] *4*	46[d]	281.574	5/2$^-$				
		810.53 *8*	100[d] *10*	0.0	7/2$^+$				E_γ: weighted average of 810.53 *12* in (n,γ) and 810.53 *11* in (n,n′γ). Other Eγ: 812.5 in Coulomb excitation.
812.0	(13/2$^-$)	149[&]		662.48	(11/2$^-$)				
		277[&]		535.79	(9/2$^-$)				
812.48	(5/2$^-$)	547.61[c] *15*	100	264.874	3/2$^-$				
828.27	(13/2)$^+$	650.23[c] *20*	76 *7*	177.971	(11/2)$^+$				
		748.90[c] *19*	100 *9*	79.3221	(9/2)$^+$				
845.26	(9/2)$^-$	415.24[c] *22*	100	430.023	(7/2)$^-$				E_γ: for complex line.
856.47	(5/2)$^-$	444.0[cg] *2*	≈24	413.272	(7/2)$^-$				
		591.6[c] *2*	100 *12*	264.874	3/2$^-$				
873.06	(7/2)$^+$	793.59[c] *18*	100 *9*	79.3221	(9/2)$^+$				E_γ: other Eγ: 794.5 in Coulomb excitation.
		873.24[c] *20*	80 *9*	0.0	7/2$^+$				
878.4	(13/2$^+$)	583.4[c] *3*	100	294.954	(13/2)$^+$				
894.69	(7/2)$^-$	453.1[c] *2*	33 *8*	441.979	(9/2)$^-$				
		481.13[c] *20*	100 *10*	413.272	(7/2)$^-$				
		613.0[fc] *2*	<68[f]	281.574	5/2$^-$				I_γ: 68 *10* for doublet.
		628.1[fcg] *3*	<70[f]	264.874	3/2$^-$				I_γ: 70 *15* for doublet.
932.97	(9/2)$^+$	755.16[c] *18*	100 *9*	177.971	(11/2)$^+$				
		853.53[c] *15*	≈58	79.3221	(9/2)$^+$				
942.95	(7/2)$^-$	661.37[c] *20*	100	281.574	5/2$^-$				
954.53	(15/2$^-$)	272[&]		683.31	(13/2$^-$)				
		309.35[c] *24*	100 *13*	645.21	(11/2$^-$)				
955.00	(21/2)$^+$	182.3[a] *2*	23[a] *4*	772.688	(19/2)$^+$	M1(+E2)[a]	−0.15 *45*	0.52 *5*	B(M1)(W.u.)=0.15 *+5−4*; B(E2)(W.u.)=2.0×10^2 *+30−20*
		367.62[a] *4*	100[a] *11*	587.376	(17/2)$^+$	E2[a]		0.0379 *5*	B(E2)(W.u.)=3.2×10^2 *+8−6*
966.10	(15/2)$^+$	256[&]		710.98	(11/2$^+$)				
		531[&]		434.447	(15/2)$^+$				
		670.9[c] *2*	100 *18*	294.954	(13/2)$^+$				
		788.5[c] *3*	91 *18*	177.971	(11/2)$^+$				
979.8	(15/2$^-$)	168[&]		812.0	(13/2$^-$)				
		317[&]		662.48	(11/2$^-$)				
998.73	(17/2$^-$)	315.38 *16*	100	683.31	(13/2$^-$)				E_γ: for doublet in (n,n′γ).
1041.4	(9/2$^-$)	600.4[cg] *4*	100 *50*	441.979	(9/2)$^-$				

γ(^{167}Er) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	δ[#]	α[e]	Comments
1041.4	(9/2⁻)	628.1[fc] *3*	<350[f]	413.272	(7/2)⁻				I_γ: 350 *75* for doublet.
1053.1	(11/2⁻)	342.1[c] *4*	100	710.98	(11/2⁺)				
1058.24	(11/2⁺)	763.8[c] *3*	68 *11*	294.954	(13/2)⁺				
		880.04[c] *20*	100 *11*	177.971	(11/2)⁺				
1058.96		645.74 *15*	<207[d]	413.272	(7/2)⁻				
		777.0 *7*	39[d] *14*	281.574	5/2⁻				
		794.00 *25*	100[d] *14*	264.874	3/2⁻				
1086.27	3/2⁺	554.7[c] *3*	96[d] *15*	531.54	3/2⁺				
		878.52 *18*	100[d] *13*	207.801	1/2⁻				
1110.4	(13/2)⁺	676.0[c] *3*	100	434.447	(15/2)⁺				
1125.2	(17/2⁺)	157[&]		966.10	(15/2)⁺				
		294[&]		828.27	(13/2)⁺				
		535[&]		587.376	(17/2)⁺				
		688[&]		434.447	(15/2)⁺				
		831.0[c] *3*	100 *21*	294.954	(13/2)⁺				
1135.32	1/2⁺	603.76 *25*	100[d] *10*	531.54	3/2⁺				
		870.5 *5*	23[d] *5*	264.874	3/2⁻				
1165.9	(17/2⁻)	186[&]		979.8	(15/2⁻)				
		354[&]		812.0	(13/2⁻)				
1171.1	(9/2⁻)	1171.1[c] *8*	100	0.0	7/2⁺				E_γ: complex line.
1178.91	1/2,3/2	426.28 *22*	31[d] *4*	752.69	(3/2)⁻				
		971.0 *7*	100[d] *26*	207.801	1/2⁻				
1194.20	(23/2)⁺	239.4[a] *6*	24[a] *3*	955.00	(21/2)⁺	M1+E2[a]	−0.20 *10*	0.241 *6*	B(M1)(W.u.)=0.117 *+35−26*; B(E2)(W.u.)=38 *+49−28*
		421.5[a] *1*	100[a] *13*	772.688	(19/2)⁺	E2[a]		0.0259 *4*	B(E2)(W.u.)=2.5×10^2 *+7−5*
1198.6	(19/2⁺)	426[&]		772.688	(19/2)⁺				
		611[&]		587.376	(17/2)⁺				
1206.0	(≤7/2)	924.56 *35*	100[d] *20*	281.574	5/2⁻				
		940.8 *5*	52[d] *12*	264.874	3/2⁻				
1216.8?	(13/2⁻)	388.5[cg] *4*	100	828.27	(13/2)⁺				
1227.17	1/2,3/2	962.7 *6*	≈43[d]	264.874	3/2⁻				
		1019.37 *18*	100[d] *19*	207.801	1/2⁻				
1254.4		444.0 *3*	56[d] *8*	810.52	(5/2)⁺				
		840.8 *5*	100[d] *30*	413.272	(7/2)⁻				
		989.1[g] *18*	48[d] *22*	264.874	3/2⁻				

$^{167}_{68}$Er$_{99}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{167}Er)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.[#]	α[e]	Comments
1299.6	$(19/2^+)$	334[&]		966.10	$(15/2)^+$			
		527[&]		772.688	$(19/2)^+$			
		712[&]		587.376	$(17/2)^+$			
		865[&]		434.447	$(15/2)^+$			
1336.9	$(19/2^-)$	338.1[c] *4*	<92	998.73	$(17/2^-)$			E_γ,I_γ: for doubly-placed γ; $I\gamma$=92 *25* for doublet.
		382.6[c] *4*	100 *25*	954.53	$(15/2^-)$			
1368.8	$(19/2^-)$	203[&]		1165.9	$(17/2^-)$			
		389[&]		979.8	$(15/2^-)$			
1379.5	$(21/2^-)$	380[&]		998.73	$(17/2^-)$			
1384.40	$(3/2)^-$	1037.83 *12*	100	346.549	$5/2^-$			
1394.0	$(25/2^+)$	200[&]		1194.20	$(23/2)^+$			
		439[&]		955.00	$(21/2)^+$	(E2)[a]	0.0232 *3*	
1422.7	$(21/2^+)$	224[&]		1198.6	$(19/2^+)$			
		468[&]		955.00	$(21/2)^+$			
		650[&]		772.688	$(19/2)^+$			
		835[&]		587.376	$(17/2)^+$			
1496.5	$(21/2^+)$	197[&]		1299.6	$(19/2^+)$			
		373[&]		1125.2	$(17/2^+)$			
		541[&]		955.00	$(21/2)^+$			
		723[&]		772.688	$(19/2)^+$			
		909[&]		587.376	$(17/2)^+$			
1545.4	1/2,3/2	1280.5 *5*	100[d]	264.874	$3/2^-$			
1553.5	$(23/2^+)$	355[&]		1198.6	$(19/2^+)$			
		359[&]		1194.20	$(23/2)^+$			
		599[&]		955.00	$(21/2)^+$			
1641.2	$1/2^-$,3/2	1294.5 *5*	100[d]	346.549	$5/2^-$			
1649.3	1/2,3/2	1384.4 *9*	58[d] *21*	264.874	$3/2^-$			
		1441.5 *6*	≈100[d]	207.801	$1/2^-$			
1661.8	1/2,3/2	909.37 *42*	20[d] *4*	752.69	$(3/2)^-$			
		1453.9 *5*	100[d] *20*	207.801	$1/2^-$			
1698.6	$(27/2^+)$	305[&]		1394.0	$(25/2^+)$			
		504[&]		1194.20	$(23/2)^+$			
1712.2	$(23/2^+)$	413[&]		1299.6	$(19/2^+)$			

$^{167}_{68}Er_{99}$-13

Adopted Levels, Gammas (continued)

$\gamma(^{167}Er)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f
1712.2	(23/2$^+$)	757[&]		955.00	(21/2)$^+$
1754.8	1/2,3/2	1223.35 *30*	100[d]	531.54	3/2$^+$
1782.2	(23/2$^-$)	402[&]		1379.5	(21/2$^-$)
		446[&]		1336.9	(19/2$^-$)
1816.5	(25/2$^-$)	437[&]		1379.5	(21/2$^-$)
1818.8	(23/2$^-$)	450[&]		1368.8	(19/2$^-$)
1837.0	(25/2$^+$)	284[&]		1553.5	(23/2$^+$)
		414[&]		1422.7	(21/2$^+$)
		882[&]		955.00	(21/2)$^+$
1901.9	(29/2$^+$)	203[&]		1698.6	(27/2$^+$)
		508[&]		1394.0	(25/2$^+$)
1948.2	(25/2$^+$)	236[&]		1712.2	(23/2$^+$)
		452[&]		1496.5	(21/2$^+$)
		754[&]		1194.20	(23/2)$^+$
		993[&]		955.00	(21/2)$^+$
1994.7	(27/2$^+$)	158[&]		1837.0	(25/2$^+$)
		441[&]		1553.5	(23/2$^+$)
2202.1	(27/2$^+$)	490[&]		1712.2	(23/2$^+$)
		808[&]		1394.0	(25/2$^+$)
2283.3	(31/2$^+$)	381[&]		1901.9	(29/2$^+$)
		585[&]		1698.6	(27/2$^+$)
2285.2	(27/2$^-$)	503[&]		1782.2	(23/2$^-$)
2305.5	(29/2$^-$)	489[&]		1816.5	(25/2$^-$)
2320.8	(27/2$^-$)	502[&]		1818.8	(23/2$^-$)
2327.0	(29/2$^+$)	332[&]		1994.7	(27/2$^+$)
		490[&]		1837.0	(25/2$^+$)
2476.9	(33/2$^+$)	575[&]		1901.9	(29/2$^+$)
2477.2	(29/2$^+$)	275[&]		2202.1	(27/2$^+$)
		529[&]		1948.2	(25/2$^+$)
2528.4	(31/2$^+$)	201[&]		2327.0	(29/2$^+$)
		534[&]		1994.7	(27/2$^+$)
2766.1	(31/2$^+$)	564[&]		2202.1	(27/2$^+$)
2833.2	31/2$^-$	548[&]		2285.2	(27/2$^-$)
2842.5	(33/2$^-$)	537[&]		2305.5	(29/2$^-$)
2946.3	(35/2$^+$)	663[&]		2283.3	(31/2$^+$)
3081.2	(33/2$^+$)	604[&]		2477.2	(29/2$^+$)
3119.0	(37/2$^+$)	642[&]		2476.9	(33/2$^+$)
3152.4	(35/2$^+$)	624[&]		2528.4	(31/2$^+$)
3426.5	(37/2$^-$)	584[&]		2842.5	(33/2$^-$)
3756.2	(37/2$^+$)	675[&]		3081.2	(33/2$^+$)
(6436.30)	1/2$^+$	4331 *5*	2.5 *8*	2105	1/2,3/2
		4341 *5*	<2.0	2095	1/2,3/2
		4372.0 *15*	2.5 *6*	2064.2	1/2,3/2
		4486.7 *11*	<4.3	1949.5	1/2,3/2
		4513 *3*	0.81 *8*	1923	1/2,3/2
		4567.3 *10*	2.0 *6*	1868.9	1/2,3/2
		4625.9 *12*	≈1.3	1810.3	1/2,3/2
		4644.0 *10*	≈0.7	1792.2	1/2,3/2
		4682.0 *9*	4.5 *10*	1754.8	1/2,3/2
		4716.6 *9*	7.0 *13*	1719.6	1/2,3/2
		4775.3 *9*	6.4 *13*	1661.8	1/2,3/2
		4787.0 *15*	4.3 *8*	1649.3	1/2,3/2
		4792.8 *20*	1.5 *6*	1641.2	1/2$^-$,3/2
		4871.0 *15*	1.77 *25*	1565.2	1/2,3/2
		4891 *3*	1.04 *11*	1545.4	1/2,3/2
		5051.3 *7*	4.1 *10*	1384.40	(3/2)$^-$
		5210.2 *9*	≈12.4	1227.17	1/2,3/2
		5257.7 *6*	4.8 *10*	1178.91	1/2,3/2
		5351.0 *9*	≈4.3	1086.27	3/2$^+$
		5634.2 *7*	<2.5	801.64	(3/2)$^-$
		5670 *3*	0.64 *7*	763.47	(1/2)$^-$
		5682.8 *7*	≈2.5	752.69	(3/2)$^-$
		5904 *3*	0.96 *10*	531.54	3/2$^+$
		6171.2 *5*	25.3 *25*	264.874	3/2$^-$
		6228.23 *35*	100 *10*	207.801	1/2$^-$

$^{167}_{68}Er_{99}$-14

$\gamma(^{167}Er)$ (continued)

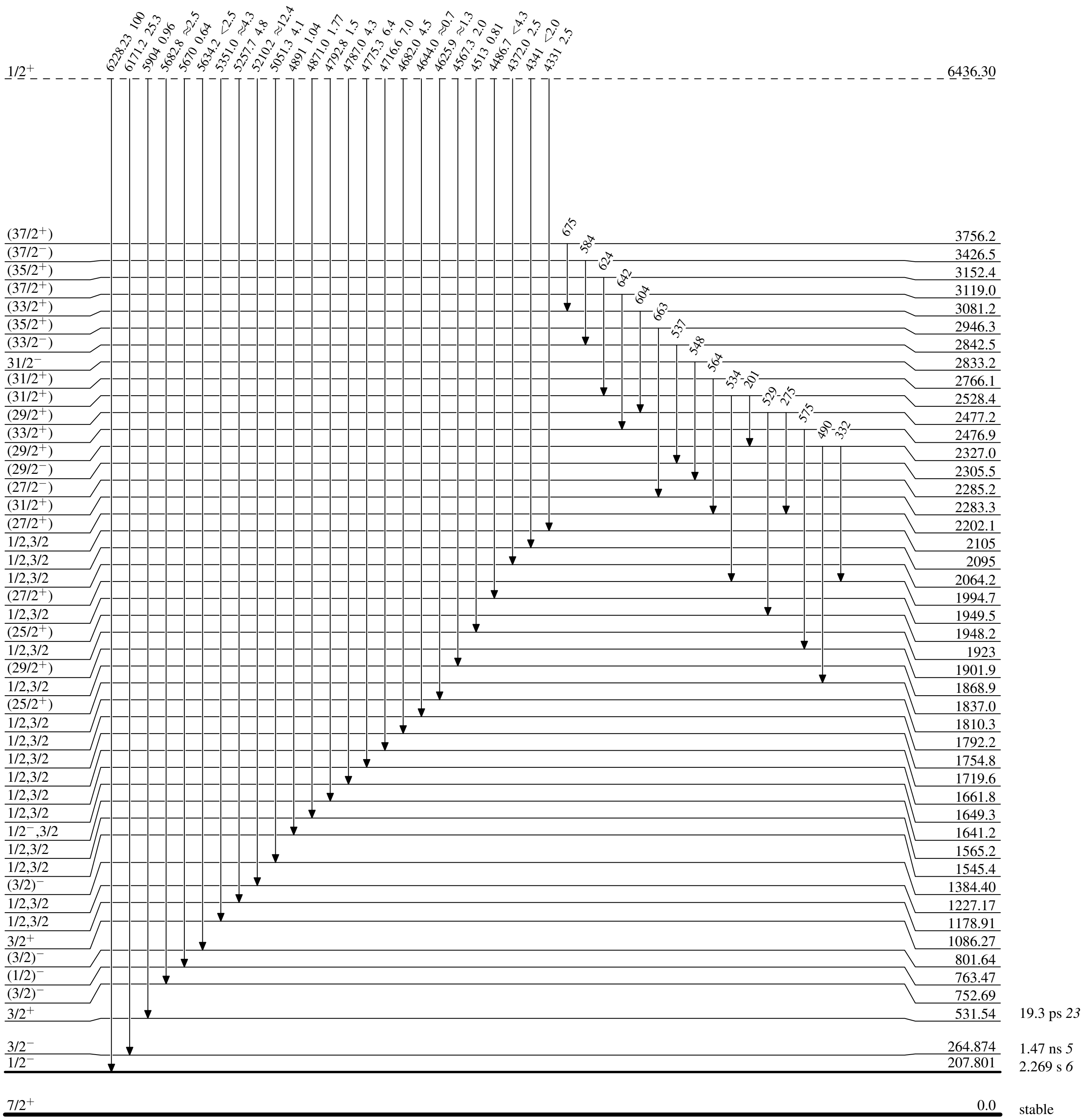
[†] From $^{166}Er(n,\gamma)$ E=thermal, except where noted.
[‡] Relative photon branching from each level from $(n,n'\gamma)$, except where noted. Upper limits are given for photon branchings for multiply-placed transitions.
[#] From ^{167}Tm ε decay, except where noted.
[@] From ^{167}Ho β^- decay.
[&] From $(Bi,Bi'\gamma)$; uncertainty unstated by authors.
[a] From Coulomb excitation.
[b] From ^{167}Tm ε decay.
[c] From $^{167}Er(n,n'\gamma)$.
[d] From $^{166}Er(n,\gamma)$ E=thermal.
[e] 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.
[f] Multiply placed with undivided intensity.
[g] Placement of transition in the level scheme is uncertain.

$^{167}_{68}Er_{99}$-15

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

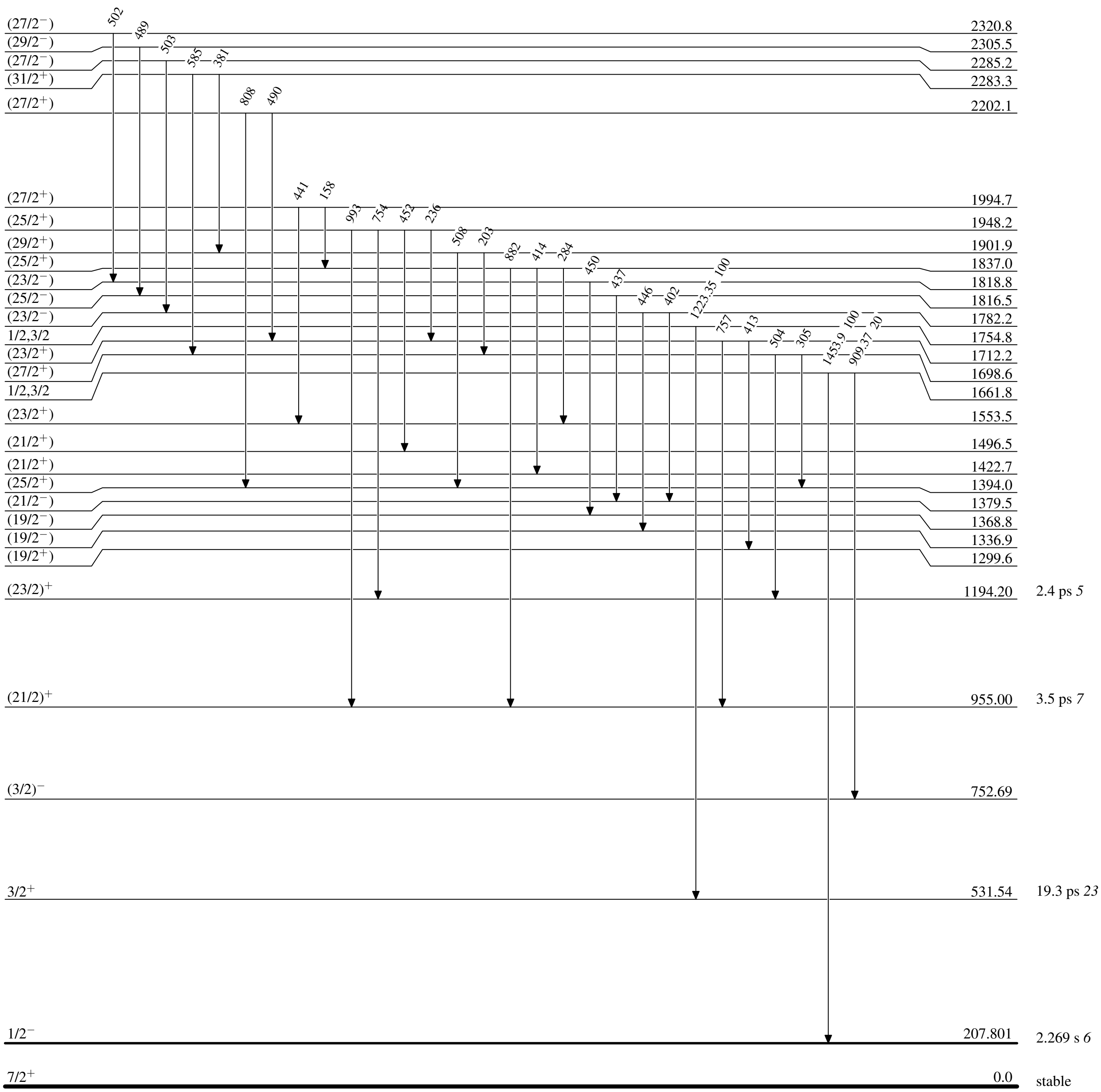


$^{167}_{68}Er_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

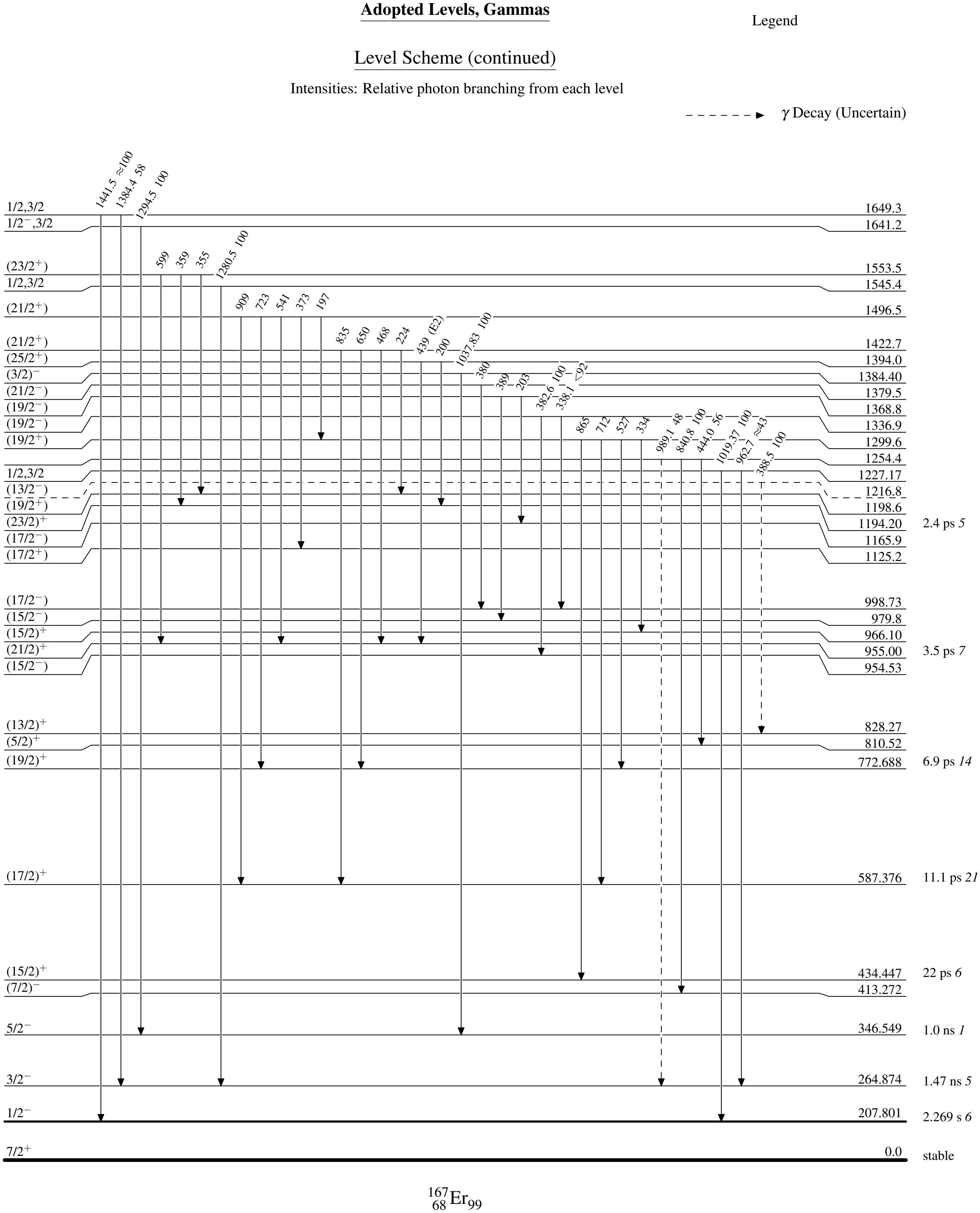


$^{167}_{68}Er_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

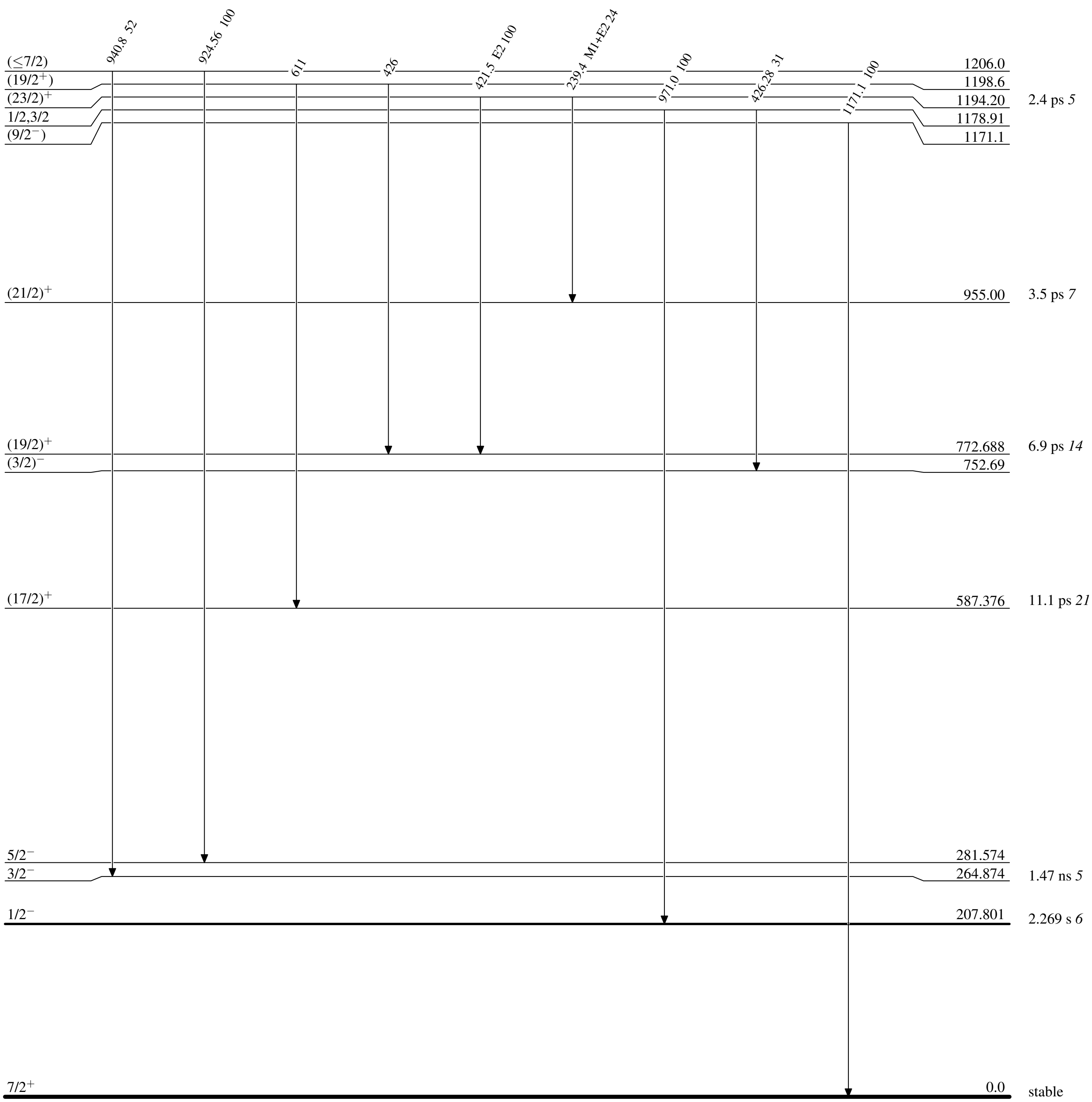
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{167}_{68}Er_{99}$

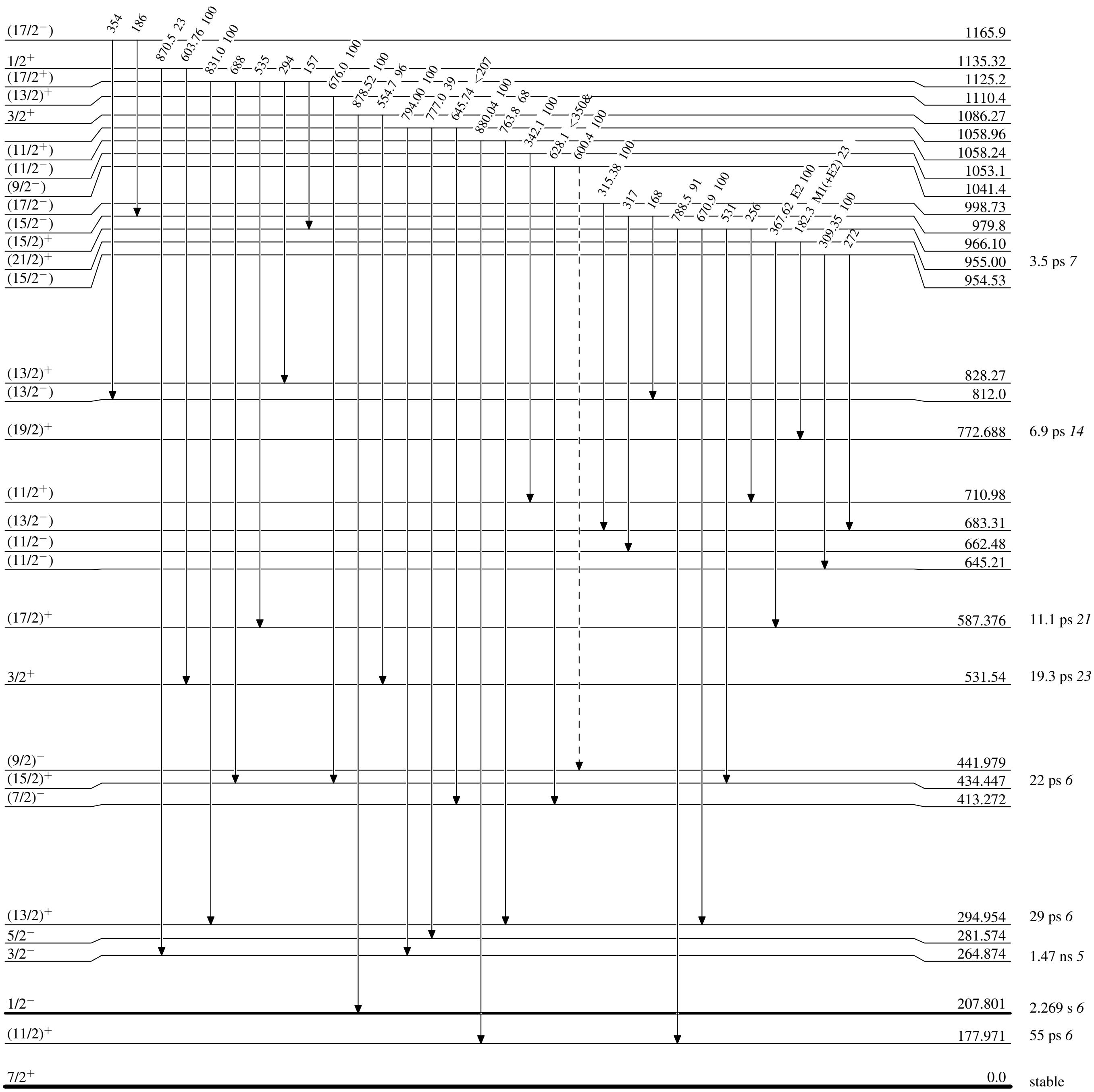
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

- - - - - -► γ Decay (Uncertain)

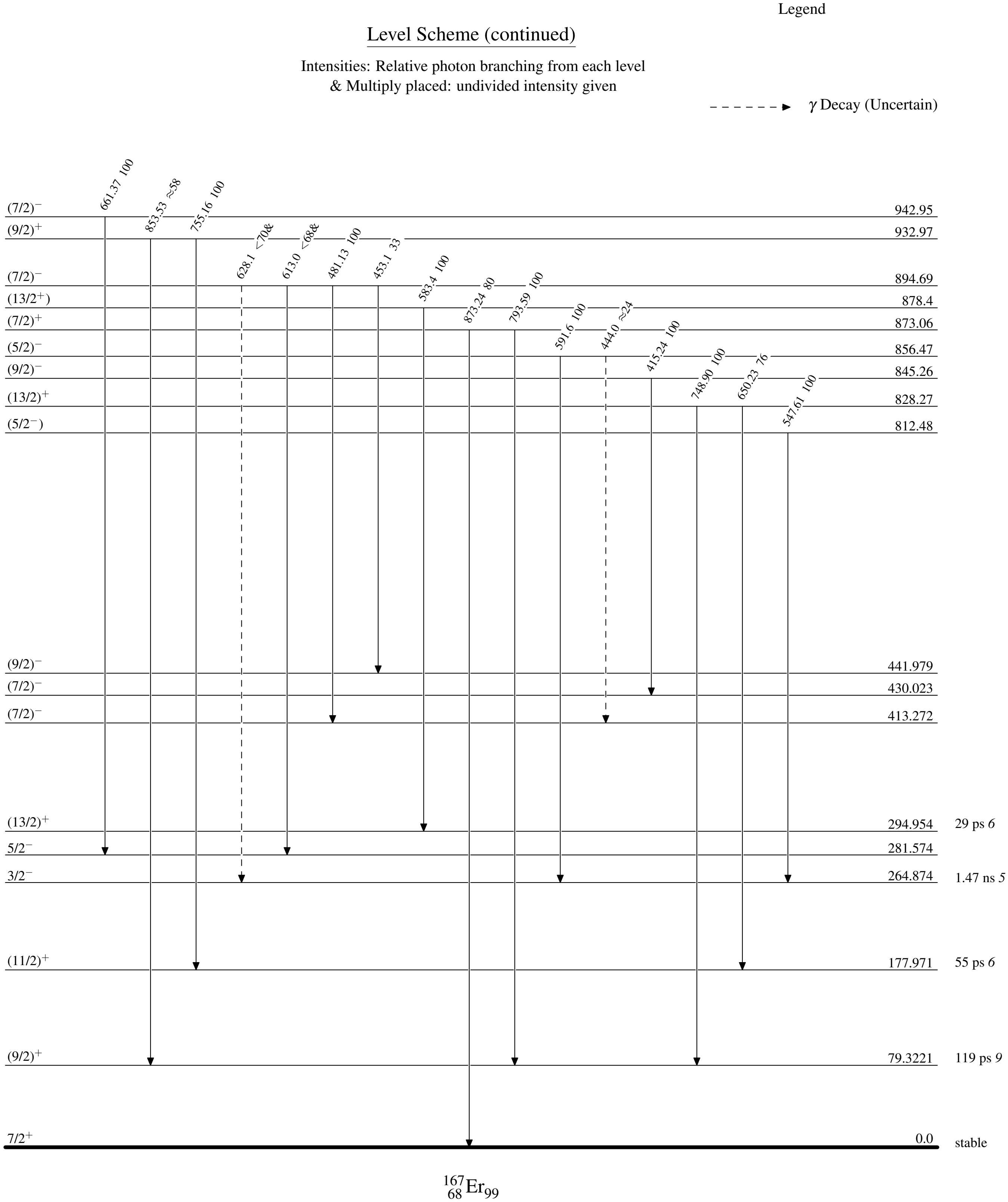


$^{167}_{68}Er_{99}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



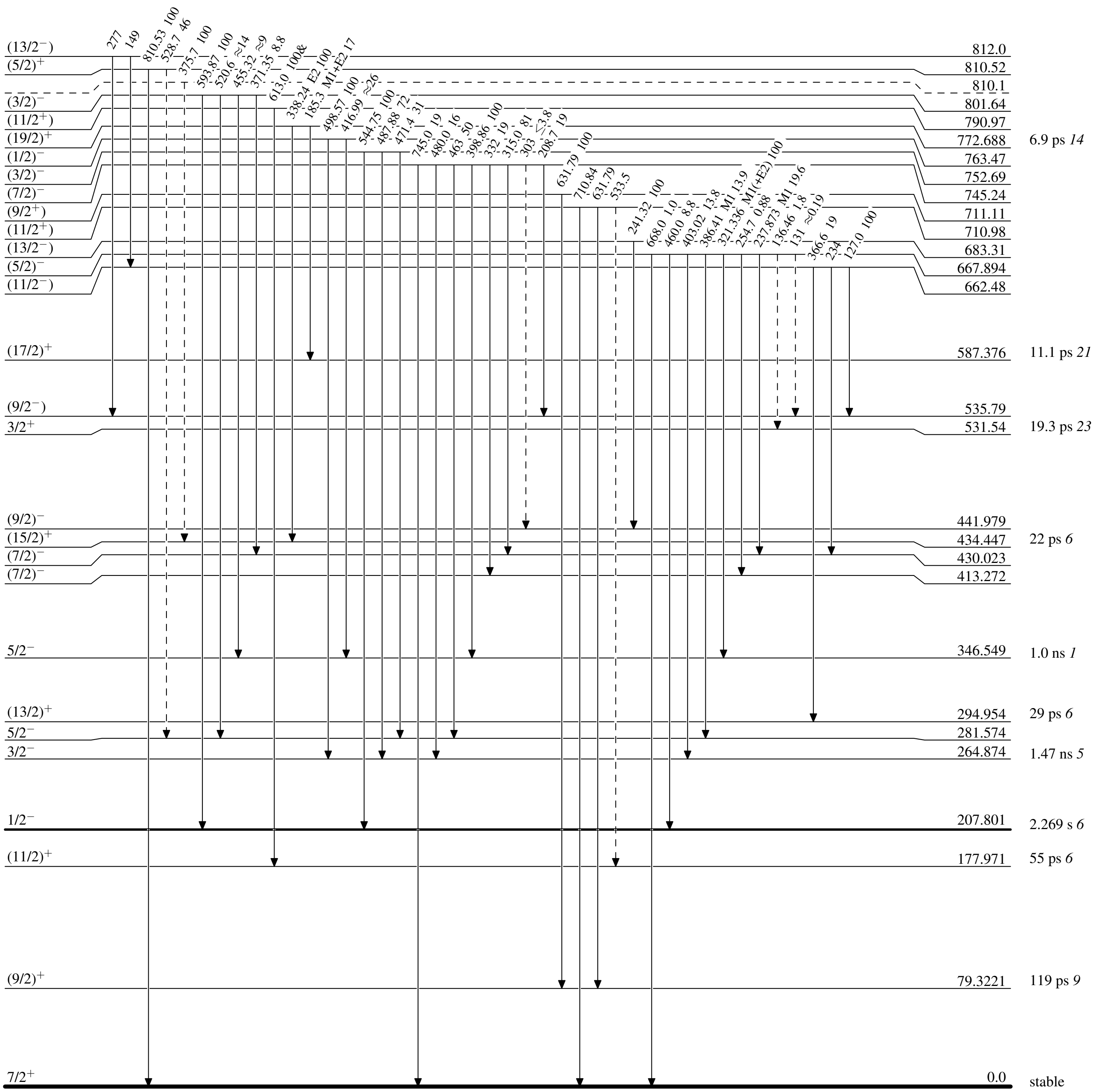
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given

Legend

γ Decay (Uncertain)



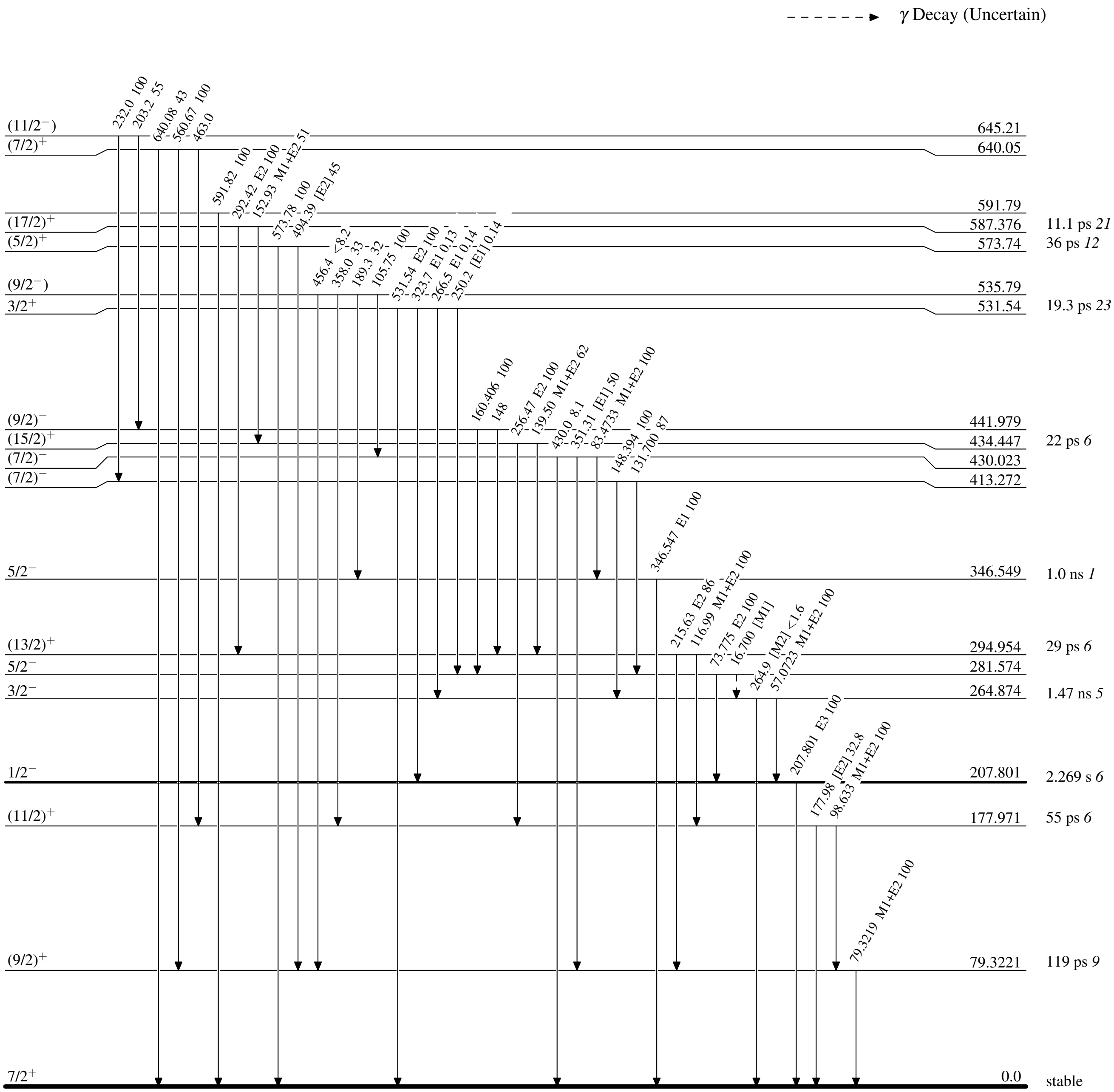
$^{167}_{68}Er_{99}$

Adopted Levels, Gammas

Legend

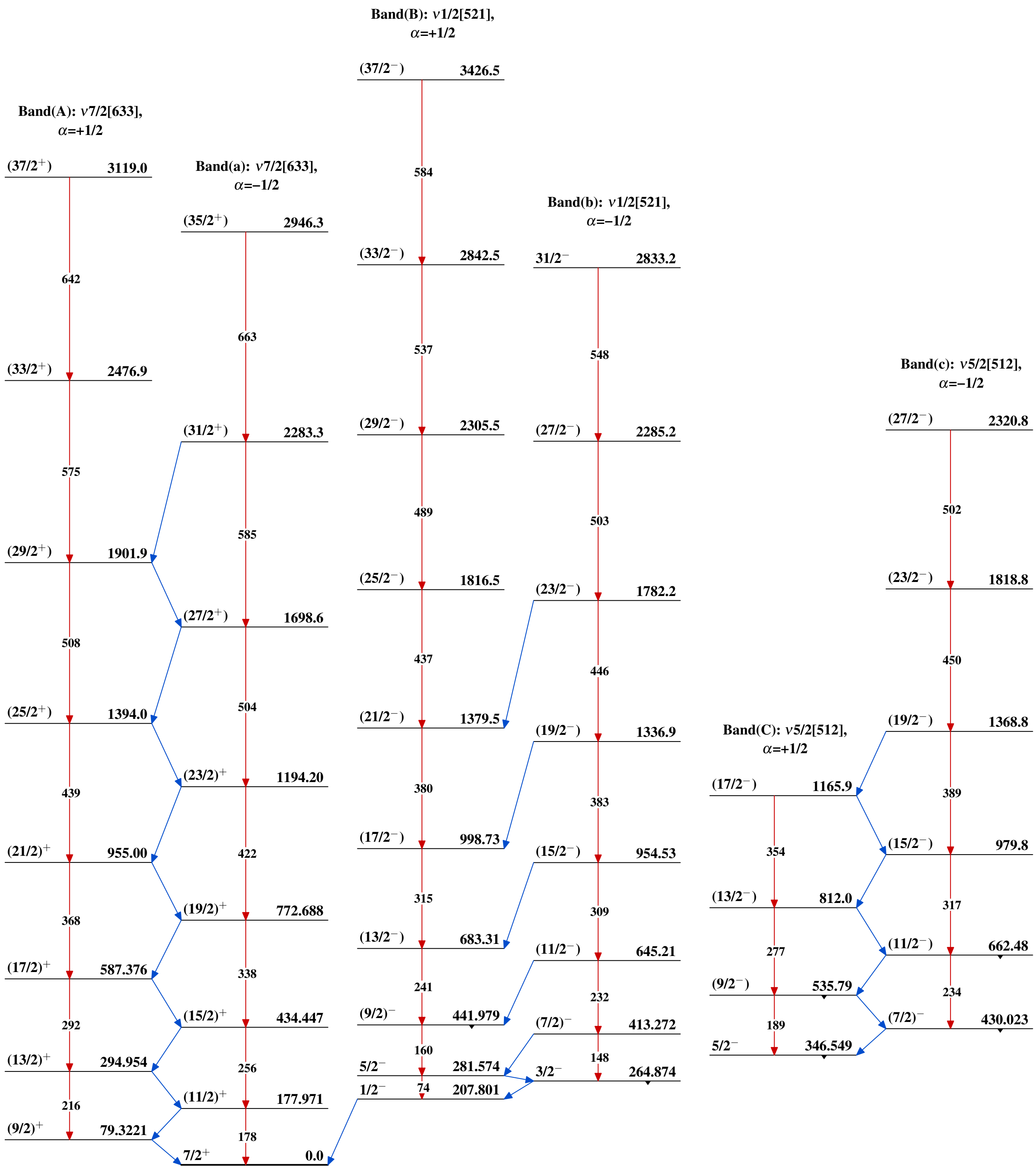
Level Scheme (continued)

Intensities: Relative photon branching from each level
& Multiply placed: undivided intensity given



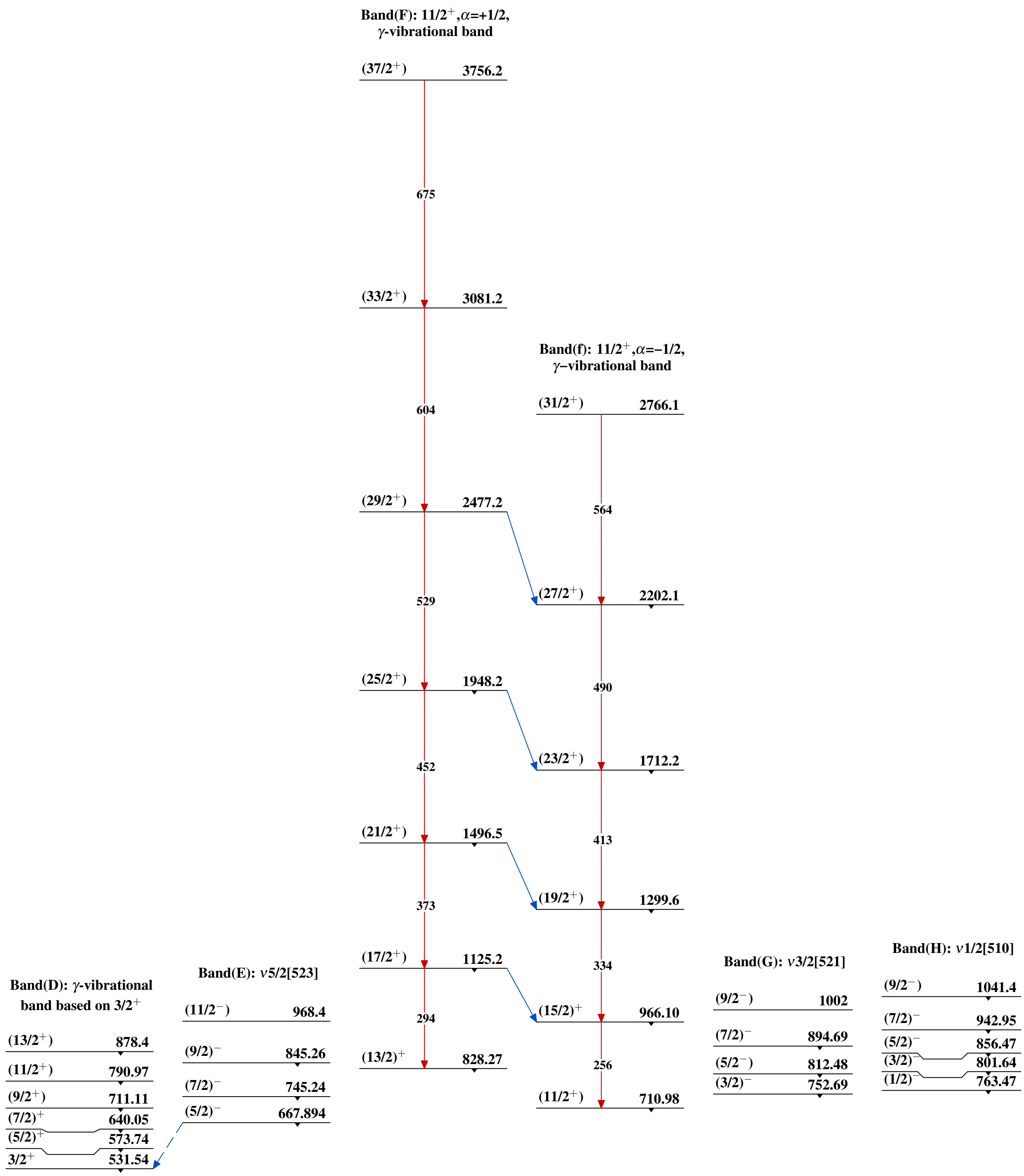
$^{167}_{68}$Er$_{99}$

Adopted Levels, Gammas



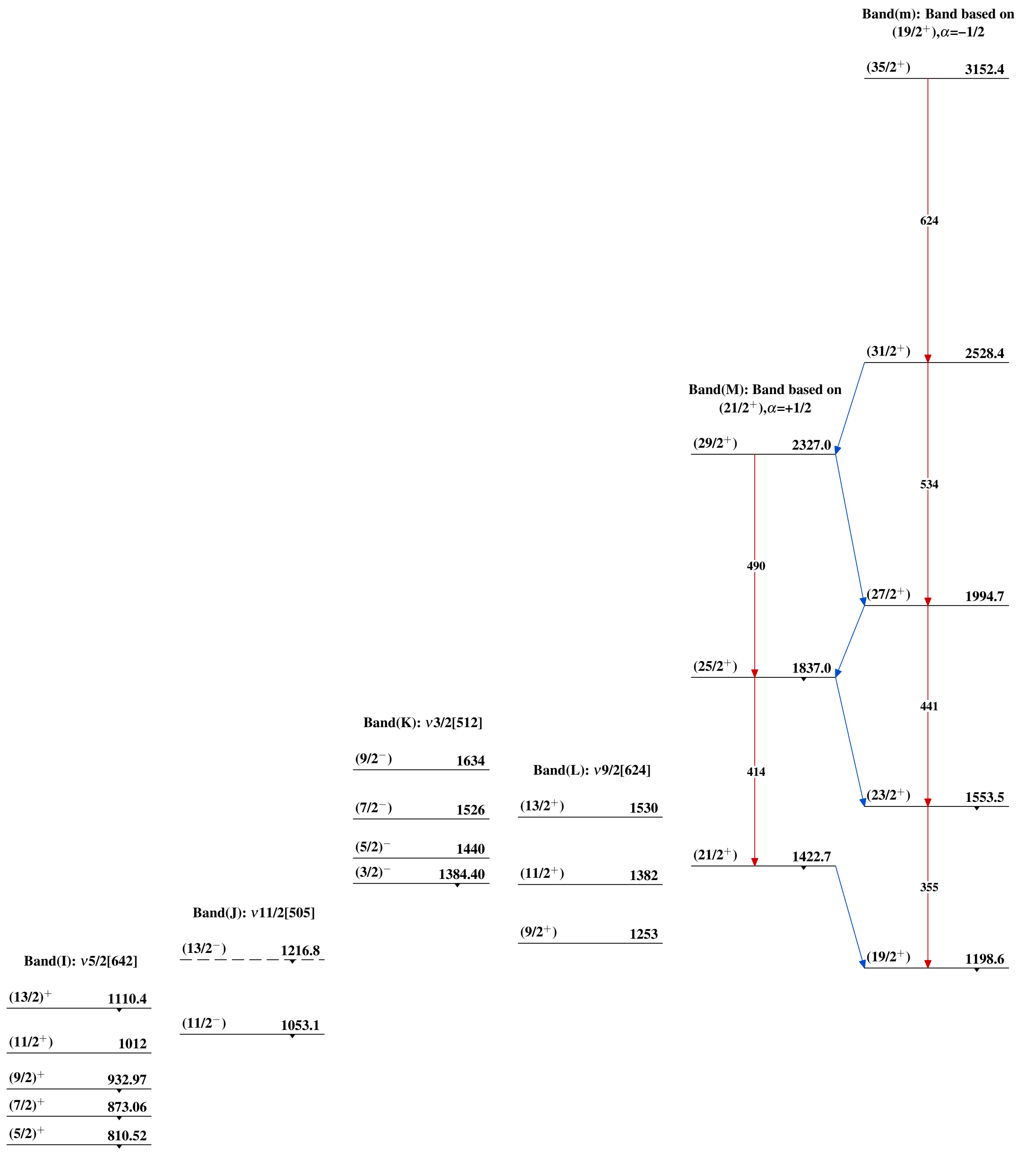
$^{167}_{68}Er_{99}$

Adopted Levels, Gammas (continued)



$^{167}_{68}Er_{99}$

Adopted Levels, Gammas (continued)



$^{167}_{68}Er_{99}$