Adopted Levels, Gammas

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Janos Timar and Zoltan Elekes, Balraj Singh	NDS 121, 143 (2014)	31-May-2014

Q(β^-)=−1197 *5*; S(n)=6907.1 *11*; S(p)=8246 *4*; Q(α)=−2098.0 *15* 2012Wa38
S(2n)=16517 *4*, S(2p)=14992.3 *15* (2012Wa38).

Measurements (NMR, hyperfine structure, radii, etc.) related to nuclear moments: 2013In03, 2007Ki06, 2005Wo04, 2003Sa20, 2002Ku15, 2001Br28, 2000Da33, 1999Da22, 1998Ja14, 1997To10, 1996Br22, 1996Ma27, 1994Da35, 1994Ge03, 1993Bo21, 1993Ga03, 1993Wa26, 1991Ze02, 1989Pl03, 1988Ge05, 1984Ab03, 1984It02, 1982Bi11, 1981Bo07, 1981Ge06, 1979Hu07, 1976Sc17, 1974VaYZ, 1972Pr02, 1969Le02, 1968Br12, 1964Pe06.

^{129}Xe isotope was identified through mass spectrographic technique by Aston, Nature 106, 468 (1920).

Precise mass measurements: 2009Re03, 2006He29, 2005Sh38, 1990Me08.

^{129}Xe Levels

Cross Reference (XREF) Flags

A	^{129}I β^- decay (1.57×10^7 y)	E	^{128}Xe(n,γ),(n,n):resonances
B	^{129}Xe IT decay (8.88 d)	F	^{129}Xe(γ,γ')
C	^{129}Cs ε decay (32.06 h)	G	Coulomb excitation
D	^{126}Te(α,nγ)		

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	XREF	Comments
0.0[@]	1/2$^+$	stable	ABCD FG	μ=−0.7779763 *84* (1968Br12,2014StZZ) μ: NMR (1968Br12). Evaluated rms charge radius=4.7775 fm *50* (2013An02). Charge radius measurement: 1989Bo03. J$^\pi$: spin from optical spectroscopy (1950Ko09,1934Ko02,1934Jo01); parity from comparison of measured μ with predicted values. Experimental search for atomic electric-dipole moment (EDM) using optical-detection nuclear spin maser technique (2014As03,2013In03).
39.5774[a] *19*	3/2$^+$	0.97 ns *2*	ABCD G	μ=+0.58 *8* (1974VaYZ,2014StZZ) Q=−0.393 *10* (1964Pe06,2001Ke15,2014StZZ) MOME1: Mossbauer effect (1974VaYZ). MOMM2: Mossbauer effect (1964Pe06), 2001Ke15 re-evaluated data of −0.41 *4* from 1964Pe06. J$^\pi$: M1+E2 γ to 1/2$^+$, $\gamma\gamma(\theta)$ (1974Ma24). $T_{1/2}$: weighted average of 0.95 ns *3* (1979Be54), 1.01 ns *4* (1965Ge04) and 0.96 ns *5* (1965Ki01).
236.14[c] *3*	11/2$^-$	8.88 d *2*	B D	%IT=100 μ=−0.891223 *4* (1986Ki18,1974Si07,2014StZZ) Q=+0.63 *2* (1990NeZY,2013StZZ,2014StZZ) μ: NMR and nuclear orientation (1986Ki18,1974Si07). Others: −0.8906 *12* (1990NeZY, collinear fast-beam laser spectroscopy), 0.8911 *5* (1987Ed01,NMR). Q: collinear fast-beam laser spectroscopy (1990NeZY); original value of 0.64 *2* evaluated by 2013StZZ. J$^\pi$: M4 − M1+E2 γ cascade to 1/2$^+$. Shell model systematics in odd Xe isotopes. $T_{1/2}$: weighted average of 8.89 d *2* (1973Mi08), 8.87 d *3* (1975Ho18) and 8.85 d *4* (1990Ta18).
274.29[d] *18*	(9/2$^-$)		D	J$^\pi$: shell model systematics in odd Xe isotopes.
318.1787[e] *16*	3/2$^+$	67.5 ps *20*	CD G	J$^\pi$: M1+E2 γ to 1/2$^+$. $T_{1/2}$: recoil-distance method (1990Na18).
321.711[&] *4*	5/2$^+$	44.0 ps *19*	CD G	J$^\pi$: M1+E2 γ to 3/2$^+$, E2 γ to 1/2$^+$ and linear pol in (HI,xnγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{129}Xe Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
				$T_{1/2}$: recoil-distance method (1990Na18).
411.4959 *16*	1/2$^+$	81 ps *26*	CD G	Jπ: log *ft*=5.6 from 1/2$^+$, M1+E2 γ to 3/2$^+$, M1 γ to 1/2$^+$; γγ(θ) from 1974Ma24. $T_{1/2}$: delayed coin (1979Be54).
442.20 *14*	(5/2$^+$)		D F	Jπ: ΔJ=1 γ to 3/2$^+$; band structure.
518.70[a] *12*	7/2$^+$		D G	Jπ: stretched E2 γ to 3/2$^+$.
525.26 *17*	(5/2$^+$)		D	Jπ: ΔJ=1, (M1+E2) γ to 3/2$^+$.
572.68[@] *3*	(5/2)$^+$	2.0 ps *2*	CD G	Jπ: strongly Coulomb excited from 1/2$^+$. $T_{1/2}$: recoil-distance method (1990Na18).
588.533 *3*	3/2$^+$	≤65 ps	CD G	Jπ: M1+E2 γ to 1/2$^+$, log *ft*=6.4 from 1/2$^+$. $T_{1/2}$: delayed coin (1979Be54).
624.332 *25*			C	
665.43[b] *11*	7/2$^+$		D G	Jπ: stretched E2 γ to 3/2$^+$.
692.96 *18*	(1/2$^+$ to 7/2$^+$)		D F	Jπ: gammas to 3/2$^+$ and (5/2$^+$).
771.17 *15*	(13/2$^-$)		D	Jπ: ΔJ=1, (M1+E2) γ to 11/2$^-$; band structure.
822.16[&] *10*	9/2$^+$		D G	Jπ: stretched E2 γ to 5/2$^+$; ΔJ=1, M1+E2 γ to 7/2$^+$.
823.00 *17*	(5/2$^+$)		D G	Jπ: ΔJ=1, (M1+E2) γ to 3/2$^+$.
823.29[c] *16*	(15/2$^-$)		D	Jπ: ΔJ=(2) γ to 11/2$^-$; band structure.
868.06[e] *13*	7/2$^+$		D G	Jπ: ΔJ=2 γ to 3/2$^+$; ΔJ=1, M1+E2 γ to 5/2$^+$.
904.318 *8*	3/2$^+$		C G	Jπ: Coulomb excited. log *ft*=7.4 from 1/2$^+$.
908.63 *20*	(9/2,11/2,13/2$^-$)		D	Jπ: gammas to (9/2$^-$) and 11/2$^-$.
946.028 *4*	1/2$^+$,3/2$^+$		C G	Jπ: log *ft*=6.5 from 1/2$^+$; gammas to 3/2$^+$ and 1/2$^+$.
985.7 *4*			D G	
995.7 *3*	(1/2,3/2)		G	Jπ: γ to 1/2$^+$ only.
1022.30 *25*	(7/2$^+$)		D	Jπ: ΔJ=1, (M1+E2) γ to (5/2$^+$).
1032.02[d] *18*	(13/2$^-$)		D	Jπ: odd Xe systematics and band structure.
1059.58 *20*	(9/2$^+$)		D G	Jπ: ΔJ=1, D+Q γ to 7/2$^+$; γ to (9/2$^-$).
1089.48[a] *16*	11/2$^+$		D G	Jπ: stretched E2 to 7/2$^+$; ΔJ=1 γ to 9/2$^+$; band structure.
1194.5 *3*			D	
1194.6[@] *3*	(9/2$^+$)		D	Jπ: γ to (5/2)$^+$; possible band structure.
1197.11 *21*	(5/2,7/2,9/2$^+$)		D	Jπ: γ to (5/2)$^+$.
1229.9 *3*	7/2$^+$		D G	Jπ: ΔJ=0, M1 γ to 7/2$^+$.
1239.0 *10*	1/2,3/2[#]		F	
1241.2 *3*	(1/2,3/2,5/2$^+$)		D	Jπ: γ to 1/2$^+$.
1336.12[b] *23*	(11/2$^+$)		D	Jπ: γ to 7/2$^+$; band structure.
1395.57 *21*	(15/2$^-$)		D	Jπ: ΔJ=1,(M1+E2) γ to (13/2)$^-$.
1414.27[&] *19*	13/2$^{(+)}$		D G	Jπ: stretched Q to 9/2$^+$; γ to 11/2$^+$; band structure.
1430.28 *22*	(13/2,15/2,17/2$^-$)		D	Jπ: γ to (13/2$^-$).
1497.1[e] *3*	(11/2$^+$)		D	Jπ: γ to (7/2)$^+$; band structure.
1507.19 *22*	(17/2$^-$)		D	Jπ: ΔJ=1,(M1+E2) γ to (15/2$^-$); γ to (13/2$^-$).
1539.4 *3*	(15/2,17/2,19/2$^-$)		D	Jπ: γ to (15/2$^-$).
1570.0 *10*	1/2,3/2[#]		F	
1576.0[c] *3*	(19/2$^-$)		D	Jπ: γ to (15/2$^-$); band structure.
1748.7 *4*	(9/2 to 13/2$^+$)		D	Jπ: γ to (9/2$^+$).
1755.3 *4*	(7/2 to 11/2$^+$)		D	Jπ: γ to (7/2$^+$).
1762.28[a] *22*	(15/2$^+$)		D G	Jπ: ΔJ=(2) γ to 11/2$^+$; γ to 13$^{(+)}$; band structure.
1816.06[d] *21*	(17/2$^-$)		D	Jπ: gammas to (15/2$^-$) and (13/2$^-$); band structure.
1884.0 *10*	1/2,3/2[#]		F	
1888.5? *4*	(9/2 to 13/2$^+$)		D	Jπ: γ to (9/2$^+$).
1972.3 *3*	(17/2$^-$)		D	Jπ: ΔJ=1,(M1+E2) γ to (15/2$^-$).
2036.3 *3*	(13/2 to 17/2$^-$)		D	Jπ: gammas to (13/2$^-$) and (15/2$^-$).
2048.2[b] *4*	(15/2$^+$)		D	Jπ: γ to (11/2$^+$); band structure.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{129}Xe Levels (continued)

E(level)[†]	Jπ[‡]	XREF	Comments
2064.7[&] *3*	(17/2$^+$)	D	Jπ: stretched Q to 13/2$^{(+)}$; band structure.
2172.2 *3*	(15/2 to 19/2$^-$)	D	Jπ: γ to (15/2$^-$).
2180.0 *3*	(19/2$^-$)	D	Jπ: ΔJ=0,(M1+E2) γ to (19/2$^-$).
2186.0 *10*	1/2,3/2[#]	F	
2289.0 *10*	1/2,3/2[#]	F	
2293.1 *3*	(21/2$^-$)	D	Jπ: ΔJ=1, (M1+E2) γ to (19/2$^-$).
2307.3 *4*		D	
2343.0 *10*	1/2,3/2[#]	F	
2355.0 *10*	1/2,3/2[#]	F	
2383.0 *10*	1/2,3/2[#]	F	
2394.0 *10*	1/2,3/2[#]	F	
2425.1 *7*	1/2,3/2[#]	F	
2433.5[a] *4*	(19/2$^+$)	D	Jπ: γ to (15/2$^+$); possible band member.
2446.3[c] *3*	(23/2$^-$)	D	Jπ: γ to (19/2$^-$); band structure.
2499.0 *10*	1/2,3/2[#]	F	
2554.0 *10*	1/2,3/2[#]	F	
2586.2 *4*	(19/2 to 23/2$^-$)	D	Jπ: γ to (19/2$^-$).
2592.0 *10*	1/2,3/2[#]	F	
2674.0 *10*	1/2,3/2[#]	F	
2724.0 *10*	1/2,3/2[#]	F	
2744.0 *7*	1/2,3/2[#]	F	
2767.0 *10*	1/2,3/2[#]	F	
2776.0 *10*	1/2,3/2[#]	F	
2793.0 *10*	1/2,3/2[#]	F	
2854.0 *10*	1/2,3/2[#]	F	
2917.0 *10*	1/2,3/2[#]	F	
2972.0 *10*	1/2,3/2[#]	F	
3015.0 *10*	1/2,3/2[#]	F	
3023.0 *10*	1/2,3/2[#]	F	
3215.0 *10*	1/2,3/2[#]	F	
3783.1 *10*	1/2,3/2[#]	F	
3805.1 *10*	1/2,3/2[#]	F	
3829.1 *10*	1/2,3/2[#]	F	
6907.1 *14*		E	
6907.2 *14*		E	
6907.3 *14*		E	
6907.4 *14*		E	
6907.5 *14*		E	
6907.6 *14*		E	
6907.7 *14*		E	
6908.4 *14*		E	
6908.4 *14*		E	
6908.6 *14*		E	
6909.2 *14*		E	
6909.7 *14*		E	
6909.7 *14*		E	
6910.4 *14*		E	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{129}Xe Levels (continued)

† From a least-squares fit to the adopted Eγ values, 1 keV uncertainty for Eγ assumed when not stated.
‡ For levels populated in high-spin studies, ascending order of spins with excitation energy is assumed based on yrast pattern of population.
# From dipole excitation in ^{129}Xe(γ,γ′) from 1/2$^+$ target.
@ Band(A): $\nu s_{1/2}$ α=+1/2.
& Band(B): $\nu d_{3/2}$ α=+1/2.
a Band(C): $\nu d_{3/2}$ α=−1/2.
b Band(D): $\nu g_{7/2}$ α=−1/2.
c Band(E): $\nu h_{11/2}$ α=−1/2. Possible projection=j In triaxial-rotor model.
d Band(F): $\nu h_{11/2}$ α=+1/2. Possible projection=j−1 In triaxial-rotor model.
e Band(G): $\nu d_{5/2}$.

Adopted Levels, Gammas (continued)

γ(^{129}Xe)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ[#]	α[@]	Comments
39.5774	3/2$^+$	39.578 *4*	100	0.0	1/2$^+$	M1+E2	−0.027 *5*	12.03	α(K)=10.27 *15*; α(L)=1.408 *23*; α(M)=0.286 *5* α(N)=0.0591 *10*; α(O)=0.00732 *11* B(M1)(W.u.)=0.0281 *7*; B(E2)(W.u.)=9 *4* δ: from L subshell ratios and γγ(θ) in ^{129}Xe IT decay.
236.14	11/2$^-$	196.56 *3*	100	39.5774	3/2$^+$	M4		20.3	α(K)=13.65 *20*; α(L)=5.23 *8*; α(M)=1.181 *17* α(N)=0.242 *4*; α(O)=0.0268 *4* B(M4)(W.u.)=1.777 *25* Mult.: L subshell ratios in ^{129}Xe IT decay.
274.29	(9/2$^-$)	(38.1)	100	236.14	11/2$^-$				E_γ: γ not observed. Expected from odd Xe systematics. Eγ calculated from E(level) values.
318.1787	3/2$^+$	278.614 *4*	54 *11*	39.5774	3/2$^+$	M1+E2	+0.8 *+10−5*	0.0509 *16*	α(K)=0.0429 *7*; α(L)=0.0063 *9*; α(M)=0.00130 *18* α(N)=0.00027 *4*; α(O)=3.2×10^{-5} *3* B(M1)(W.u.)=0.003 *3*; B(E2)(W.u.)=17 *+27−17*
		318.180 *2*	100 *1*	0.0	1/2$^+$	M1+E2	−1.1 *+13−22*	0.0348 *6*	α(K)=0.0293 *9*; α(L)=0.0044 *5*; α(M)=0.00090 *11* α(N)=0.000183 *20*; α(O)=2.19×10^{-5} *15* B(M1)(W.u.)=0.003 *+4−3*; B(E2)(W.u.)=23 *+25−23*
321.711	5/2$^+$	282.131 *6*	100 *13*	39.5774	3/2$^+$	M1+E2	−0.7 *+4−7*	0.0489 *13*	α(K)=0.0414 *7*; α(L)=0.0060 *7*; α(M)=0.00122 *15* α(N)=0.00025 *3*; α(O)=3.03×10^{-5} *25* B(M1)(W.u.)=0.011 *5*; B(E2)(W.u.)=(5.E+1 *4*)
		321.700 *25*	29 *3*	0.0	1/2$^+$	E2		0.0335	α(K)=0.0277 *4*; α(L)=0.00461 *7*; α(M)=0.000952 *14* α(N)=0.000193 *3*; α(O)=2.24×10^{-5} *4* B(E2)(W.u.)=21 *4*
411.4959	1/2$^+$	89.79 *8*	0.008 *2*	321.711	5/2$^+$	[E2]		2.65	α(K)=1.675 *24*; α(L)=0.776 *12*; α(M)=0.1664 *25* α(N)=0.0329 *5*; α(O)=0.00330 *5* B(E2)(W.u.)=1.4 *6*
		93.329 *3*	2.13 *6*	318.1787	3/2$^+$	[M1,E2][‡]		1.7 *7*	B(M1)(W.u.)=0.0039 *13* α(K)=1.2 *4*; α(L)=0.4 *3*; α(M)=0.08 *6* α(N)=0.016 *12*; α(O)=0.0017 *11*
		371.918 *2*	100.0 *3*	39.5774	3/2$^+$	M1+E2	+0.97 *9*	0.0224	α(K)=0.0190 *3*; α(L)=0.00269 *4*; α(M)=0.000549 *9* α(N)=0.0001129 *17*; α(O)=1.368×10^{-5} *20* B(M1)(W.u.)=0.0015 *5*; B(E2)(W.u.)=6.7 *23* δ: from 1974Ma24.
		411.490 *2*	72.9 *3*	0.0	1/2$^+$	M1		0.0181	B(M1)(W.u.)=0.0016 *5* α(K)=0.01563 *22*; α(L)=0.00199 *3*; α(M)=0.000402 *6* α(N)=8.34×10^{-5} *12*; α(O)=1.046×10^{-5} *15*
442.20	(5/2$^+$)	402.6 *2* 442.2 *3*	100 *10*	39.5774 0.0	3/2$^+$ 1/2$^+$	D(+Q)	0.0 *+3−4*		
518.70	7/2$^+$	196.9 *5*	10 *1*	321.711	5/2$^+$	M1(+E2)	−0.03 *11*	0.1248 *22*	α(K)=0.1073 *18*; α(L)=0.0140 *4*; α(M)=0.00284 *8* α(N)=0.000587 *15*; α(O)=7.34×10^{-5} *16*
		479.1 *2*	100 *10*	39.5774	3/2$^+$	E2		0.01012	α(K)=0.00855 *12*; α(L)=0.001254 *18*; α(M)=0.000257 *4* α(N)=5.25×10^{-5} *8*; α(O)=6.28×10^{-6} *9* I_γ: from (1981He04).

$^{129}_{54}Xe_{75}$-5

Adopted Levels, Gammas (continued)

γ(^{129}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ[#]	α[@]	Comments
525.26	(5/2$^+$)	485.7 *2*	100 *10*	39.5774	3/2$^+$	(M1+E2)	−0.14 *7*	0.01192 *18*	α(K)=0.01029 *16*; α(L)=0.001305 *19*; α(M)=0.000264 *4* α(N)=5.47×10^{-5} *8*; α(O)=6.86×10^{-6} *10*
572.68	(5/2)$^+$	250.9 *2*	4.9 *12*	321.711	5/2$^+$				
		254.5 *2*	2.5 *12*	318.1787	3/2$^+$				
		533.10 *4*	100 *3*	39.5774	3/2$^+$				
		572.73 *11*	16 *1*	0.0	1/2$^+$	[E2]		0.00620 *9*	α=0.00620 *9*; α(K)=0.00528 *8*; α(L)=0.000741 *11*; α(M)=0.0001512 *22* α(N)=3.10×10^{-5} *5*; α(O)=3.75×10^{-6} *6* B(E2)(W.u.)=15.4 *19*
588.533	3/2$^+$	177.036 *10*	7.9 *1*	411.4959	1/2$^+$	M1+E2	+0.44 *13*	0.179 *7*	α(K)=0.151 *5*; α(L)=0.0227 *21*; α(M)=0.0047 *5* α(N)=0.00095 *9*; α(O)=0.000114 *9* B(M1)(W.u.)>0.0026; B(E2)(W.u.)>5.9 δ: from 1974Ma24.
		266.820 *7*	8.0 *1*	321.711	5/2$^+$	(M1+E2)[‡]		0.058 *3*	B(E2)(W.u.)>4.6; B(M1)(W.u.)>0.0005 α(K)=0.0488 *13*; α(L)=0.0076 *15*; α(M)=0.0016 *3* α(N)=0.00032 *6*; α(O)=3.8×10^{-5} *6* Mult.: K/L in ^{129}Cs ε decay.
		270.352 *5*	5.9 *8*	318.1787	3/2$^+$	(M1+E2)[‡]		0.056 *3*	B(E2)(W.u.)>3.4; B(M1)(W.u.)>0.00037 α(K)=0.0470 *12*; α(L)=0.0073 *14*; α(M)=0.0015 *3* α(N)=0.00030 *6*; α(O)=3.6×10^{-5} *5* Mult.: K/L in ^{129}Cs ε decay.
		548.945 *8*	100 *1*	39.5774	3/2$^+$	(M1+E2)[‡]		0.0079 *10*	B(E2)↓>1.6; B(M1)(W.u.)>0.00071 α=0.0079 *10*; α(K)=0.0068 *9*; α(L)=0.00090 *7*; α(M)=0.000183 *13* α(N)=3.8×10^{-5} *3*; α(O)=4.6×10^{-6} *5* Mult.: K/L in ^{129}Cs ε decay.
		588.549 *8*	17.7 *4*	0.0	1/2$^+$	(M1+E2)[‡]		0.0066 *9*	B(E2)(W.u.)>0.2; B(M1)(W.u.)>0.0001 α=0.0066 *9*; α(K)=0.0057 *8*; α(L)=0.00075 *7*; α(M)=0.000152 *13* α(N)=3.1×10^{-5} *3*; α(O)=3.9×10^{-6} *4* Mult.: K/L in ^{129}Cs ε decay.
624.332		302.6[&] *2*	≤67	321.711	5/2$^+$				
		585.0[&] *2*	100	39.5774	3/2$^+$				
665.43	7/2$^+$	146.8 *3*		518.70	7/2$^+$				
		343.7 *2*	74 *22*	321.711	5/2$^+$	M1+E2	+3.1 *+13−9*	0.0273	α(K)=0.0228 *4*; α(L)=0.00362 *7*; α(M)=0.000746 *14* α(N)=0.000152 *3*; α(O)=1.78×10^{-5} *3*
		347.3 *2*	100 *10*	318.1787	3/2$^+$	E2		0.0263	α(K)=0.0219 *3*; α(L)=0.00354 *5*; α(M)=0.000730 *11* α(N)=0.0001485 *21*; α(O)=1.730×10^{-5} *25*
		391.1 *3*		274.29	(9/2$^-$)				

Adopted Levels, Gammas (continued)

γ(^{129}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.	δ[#]	α[@]	Comments
692.96	(1/2$^+$ to 7/2$^+$)	167.7 *3*		525.26	(5/2$^+$)				
		250.8 *3*		442.20	(5/2$^+$)				
		653.4 *3*		39.5774	3/2$^+$				
771.17	(13/2$^-$)	535.1 *2*	100	236.14	11/2$^-$	(M1+E2)	−0.5 *+2−16*	0.0090 *13*	α=0.0090 *13*; α(K)=0.0078 *12*; α(L)=0.00100 *8*; α(M)=0.000203 *15* α(N)=4.2×10^{-5} *4*; α(O)=5.2×10^{-6} *6*
822.16	9/2$^+$	156.7 *2*	2.1 *7*	665.43	7/2$^+$				
		249.5 *2*		572.68	(5/2)$^+$				
		303.5 *2*	21.8 *21*	518.70	7/2$^+$	M1+E2	−0.25 *+9−10*	0.0396	α(K)=0.0340 *5*; α(L)=0.00445 *9*; α(M)=0.000903 *19* α(N)=0.000187 *4*; α(O)=2.33×10^{-5} *4*
		500.4 *2*	100 *10*	321.711	5/2$^+$	E2		0.00896 *13*	α=0.00896 *13*; α(K)=0.00758 *11*; α(L)=0.001100 *16*; α(M)=0.000225 *4* α(N)=4.61×10^{-5} *7*; α(O)=5.52×10^{-6} *8* δ(M3/E2)=+0.09 *2* from (α,nγ).
823.00	(5/2$^+$)	234.3 *3*		588.533	3/2$^+$				
		411.6 *3*		411.4959	1/2$^+$				
		504.4 *3*		318.1787	3/2$^+$	(M1+E2)			
823.29	(15/2$^-$)	587.2 *2*	100	236.14	11/2$^-$	(Q)			
868.06	7/2$^+$	546.2 *2*	76.1 *23*	321.711	5/2$^+$	M1+E2			
		550.0 *2*	100 *37*	318.1787	3/2$^+$	Q			
904.318	3/2$^+$	492.78 *4*	35 *3*	411.4959	1/2$^+$				
		582.60 *11*	3 *2*	321.711	5/2$^+$				
		586.11 *4*	40 *4*	318.1787	3/2$^+$				
		864.740 *8*	100 *3*	39.5774	3/2$^+$				
		904.31 *6*	26 *2*	0.0	1/2$^+$				
908.63	(9/2,11/2,13/2$^-$)	634.2 *3*		274.29	(9/2$^-$)				
		672.3 *3*		236.14	11/2$^-$				
946.028	1/2$^+$,3/2$^+$	321.700[&] *25*	4 *3*	624.332					
		357.52 *6*	2.6 *4*	588.533	3/2$^+$				
		373.36 *15*	6 *6*	572.68	(5/2)$^+$				
		534.546 *15*	9.6 *4*	411.4959	1/2$^+$				
		624.312 *9*	12.8 *3*	321.711	5/2$^+$				
		627.88 *9*	0.78 *16*	318.1787	3/2$^+$				
		906.425 *6*	100.0 *7*	39.5774	3/2$^+$				
		946.046 *6*	31.6 *3*	0.0	1/2$^+$				
985.7		664.0 *4*	100	321.711	5/2$^+$				
995.7	(1/2,3/2)	584.2 *3*	100	411.4959	1/2$^+$				
1022.30	(7/2$^+$)	580.1 *2*	100	442.20	(5/2$^+$)	(M1+E2)	−1.2 *+9−7*	0.0067 *9*	α=0.0067 *9*; α(K)=0.0058 *8*; α(L)=0.00077 *7*; α(M)=0.000156 *13* α(N)=3.2×10^{-5} *3*; α(O)=4.0×10^{-6} *5*
1032.02	(13/2$^-$)	757.8 *3*		274.29	(9/2$^-$)				
		795.9 *3*		236.14	11/2$^-$				

$^{129}_{54}Xe_{75}$-7

Adopted Levels, Gammas (continued)

γ(^{129}Xe) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ #	α @	Comments
1059.58	(9/2$^+$)	394.1 *2*		665.43	7/2$^+$	D+Q			
		785.4 *3*		274.29	(9/2$^-$)				
1089.48	11/2$^+$	267.3 *2*	5.5 *16*	822.16	9/2$^+$	D			
		570.8 *2*	100 *10*	518.70	7/2$^+$	E2		0.00626 *9*	α=0.00626 *9*; α(K)=0.00532 *8*; α(L)=0.000749 *11*; α(M)=0.0001527 *22* α(N)=3.13×10^{-5} *5*; α(O)=3.79×10^{-6} *6*
1194.5		675.8 *3*	100	518.70	7/2$^+$				
1194.6	(9/2$^+$)	621.9 *3*	100	572.68	(5/2)$^+$				
1197.11	(5/2,7/2,9/2$^+$)	504.2 *3*		692.96	(1/2$^+$ to 7/2$^+$)				
		671.9 *3*		525.26	(5/2$^+$)				
		754.8 *3*		442.20	(5/2$^+$)				
1229.9	7/2$^+$	711.2 *3*	100	518.70	7/2$^+$	M1			
1239.0	1/2,3/2	1239		0.0	1/2$^+$				
1241.2	(1/2,3/2,5/2$^+$)	829.7 *3*	100	411.4959	1/2$^+$				
1336.12	(11/2$^+$)	671.0 *3*		665.43	7/2$^+$				
		817.1 *3*		518.70	7/2$^+$				
1395.57	(15/2$^-$)	624.4 *2*	100 *10*	771.17	(13/2$^-$)	(M1+E2)	−1.2 *+7−5*	0.0056 *6*	α=0.0056 *6*; α(K)=0.0048 *6*; α(L)=0.00063 *5*; α(M)=0.000128 *10* α(N)=2.64×10^{-5} *20*; α(O)=3.3×10^{-6} *3*
1414.27	13/2$^{(+)}$	324.8 *3*		1089.48	11/2$^+$				
		592.1 *2*		822.16	9/2$^+$	Q			
1430.28	(13/2,15/2,17/2$^-$)	398.4 *3*		1032.02	(13/2$^-$)				
		521.3 *3*		908.63	(9/2,11/2,13/2$^-$)				
		659.3 *3*		771.17	(13/2$^-$)				
1497.1	(11/2$^+$)	629.0 *3*	100	868.06	7/2$^+$				
1507.19	(17/2$^-$)	683.9 *2*		823.29	(15/2$^-$)	(M1+E2)	−1.5 *3*		
		736.0 *3*		771.17	(13/2$^-$)				
1539.4	(15/2,17/2,19/2$^-$)	716.1 *3*	100	823.29	(15/2$^-$)				
1570.0	1/2,3/2	1570		0.0	1/2$^+$				
1576.0	(19/2$^-$)	752.7 *2*	100	823.29	(15/2$^-$)				
1748.7	(9/2 to 13/2$^+$)	689.1 *3*	100	1059.58	(9/2$^+$)				
1755.3	(7/2 to 11/2$^+$)	733.0 *3*	100	1022.30	(7/2$^+$)				
1762.28	(15/2$^+$)	348.0 *3*		1414.27	13/2$^{(+)}$				
		672.8 *2*		1089.48	11/2$^+$	(Q)			
1816.06	(17/2$^-$)	420.5 *2*		1395.57	(15/2$^-$)				
		784.0 *3*		1032.02	(13/2$^-$)				
		992.8 *3*		823.29	(15/2$^-$)				
1884.0	1/2,3/2	1884		0.0	1/2$^+$				
1888.5?	(9/2 to 13/2$^+$)	694.0 & *3*	100	1194.5					
1972.3	(17/2$^-$)	576.7 *2*	100	1395.57	(15/2$^-$)	(M1+E2)	−2.6 *+17−45*	0.0063 *8*	α=0.0063 *8*; α(K)=0.0054 *7*; α(L)=0.00074 *6*; α(M)=0.000151 *11* α(N)=3.11×10^{-5} *23*; α(O)=3.8×10^{-6} *4*

$^{129}_{54}Xe_{75}$-8

Adopted Levels, Gammas (continued)

γ(^{129}Xe) (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult.	δ #	α @	Comments
2036.3	(13/2 to 17/2$^-$)	1213.1 *3*		823.29	(15/2$^-$)				
		1265.1 *3*		771.17	(13/2$^-$)				
2048.2	(15/2$^+$)	712.1 *3*	100	1336.12	(11/2$^+$)				
2064.7	(17/2$^+$)	650.4 *2*	100	1414.27	13/2$^{(+)}$	Q			
2172.2	(15/2 to 19/2$^-$)	1348.9 *3*	100	823.29	(15/2$^-$)				
2180.0	(19/2$^-$)	604.0 *2*	100	1576.0	(19/2$^-$)	(M1+E2)	−0.14 *+9−7*	0.00698 *11*	α=0.00698 *11*; α(K)=0.00604 *10*; α(L)=0.000759 *11*; α(M)=0.0001534 *23* α(N)=3.18×10^{-5} *5*; α(O)=3.99×10^{-6} *6*
2186.0	1/2,3/2	2186		0.0	1/2$^+$				
2289.0	1/2,3/2	2289		0.0	1/2$^+$				
2293.1	(21/2$^-$)	717.1 *2*	100	1576.0	(19/2$^-$)	(M1+E2)	−1.9 *5*		
2307.3		1110.2 *3*	100	1197.11	(5/2,7/2,9/2$^+$)				
2343.0	1/2,3/2	2343		0.0	1/2$^+$				
2355.0	1/2,3/2	2355		0.0	1/2$^+$				
2383.0	1/2,3/2	2383		0.0	1/2$^+$				
2394.0	1/2,3/2	2394		0.0	1/2$^+$				
2425.1	1/2,3/2	1983	100 *28*	442.20	(5/2$^+$)				
		2425	93	0.0	1/2$^+$				
2433.5	(19/2$^+$)	671.2 *3*	100	1762.28	(15/2$^+$)				
2446.3	(23/2$^-$)	870.3 *2*	100	1576.0	(19/2$^-$)				
2499.0	1/2,3/2	2499		0.0	1/2$^+$				
2554.0	1/2,3/2	2554		0.0	1/2$^+$				
2586.2	(19/2 to 23/2$^-$)	406.2 *2*	100	2180.0	(19/2$^-$)				
2592.0	1/2,3/2	2592		0.0	1/2$^+$				
2674.0	1/2,3/2	2674		0.0	1/2$^+$				
2724.0	1/2,3/2	2724		0.0	1/2$^+$				
2744.0	1/2,3/2	2051	100 *3*	692.96	(1/2$^+$ to 7/2$^+$)				
		2744	26	0.0	1/2$^+$				
2767.0	1/2,3/2	2767		0.0	1/2$^+$				
2776.0	1/2,3/2	2776		0.0	1/2$^+$				
2793.0	1/2,3/2	2793		0.0	1/2$^+$				
2854.0	1/2,3/2	2854		0.0	1/2$^+$				
2917.0	1/2,3/2	2917		0.0	1/2$^+$				
2972.0	1/2,3/2	2972		0.0	1/2$^+$				
3015.0	1/2,3/2	3015		0.0	1/2$^+$				
3023.0	1/2,3/2	3023		0.0	1/2$^+$				
3215.0	1/2,3/2	3215		0.0	1/2$^+$				
3783.1	1/2,3/2	3783		0.0	1/2$^+$				
3805.1	1/2,3/2	3805		0.0	1/2$^+$				
3829.1	1/2,3/2	3829		0.0	1/2$^+$				

$^{129}_{54}Xe_{75}$-9

Adopted Levels, Gammas (continued)

$\gamma(^{129}Xe)$ (continued)

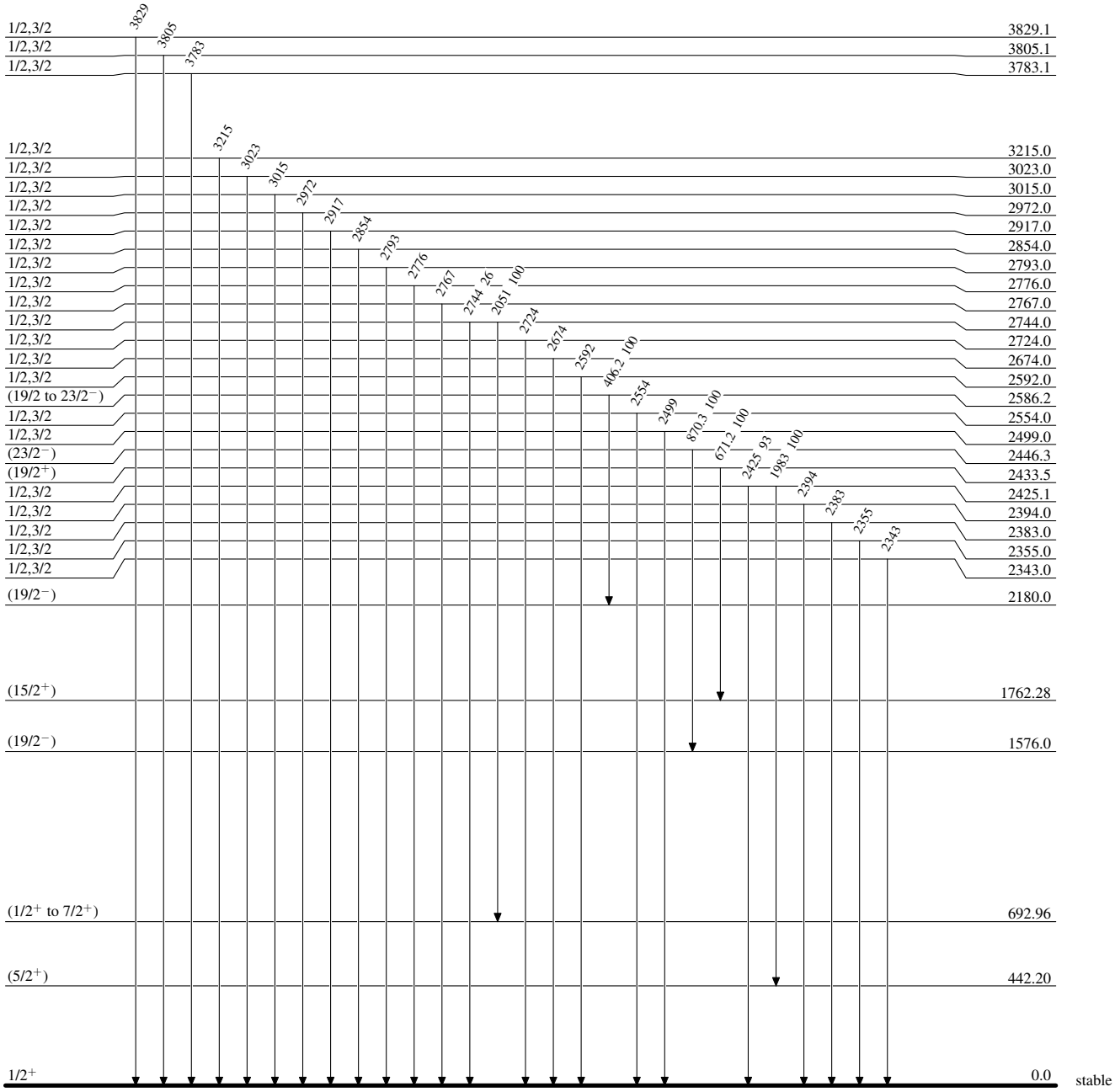
† Mainly from ε decay and high-spin levels, gammas.
‡ M1+E2 and δ=1.0 *10* was assumed by the evaluators.
# From (HI,xnγ), unless otherwise noted.
@ Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
& Placement of transition in the level scheme is uncertain.

$^{129}_{54}Xe_{75}$-10

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level



$^{129}_{54}Xe_{75}$

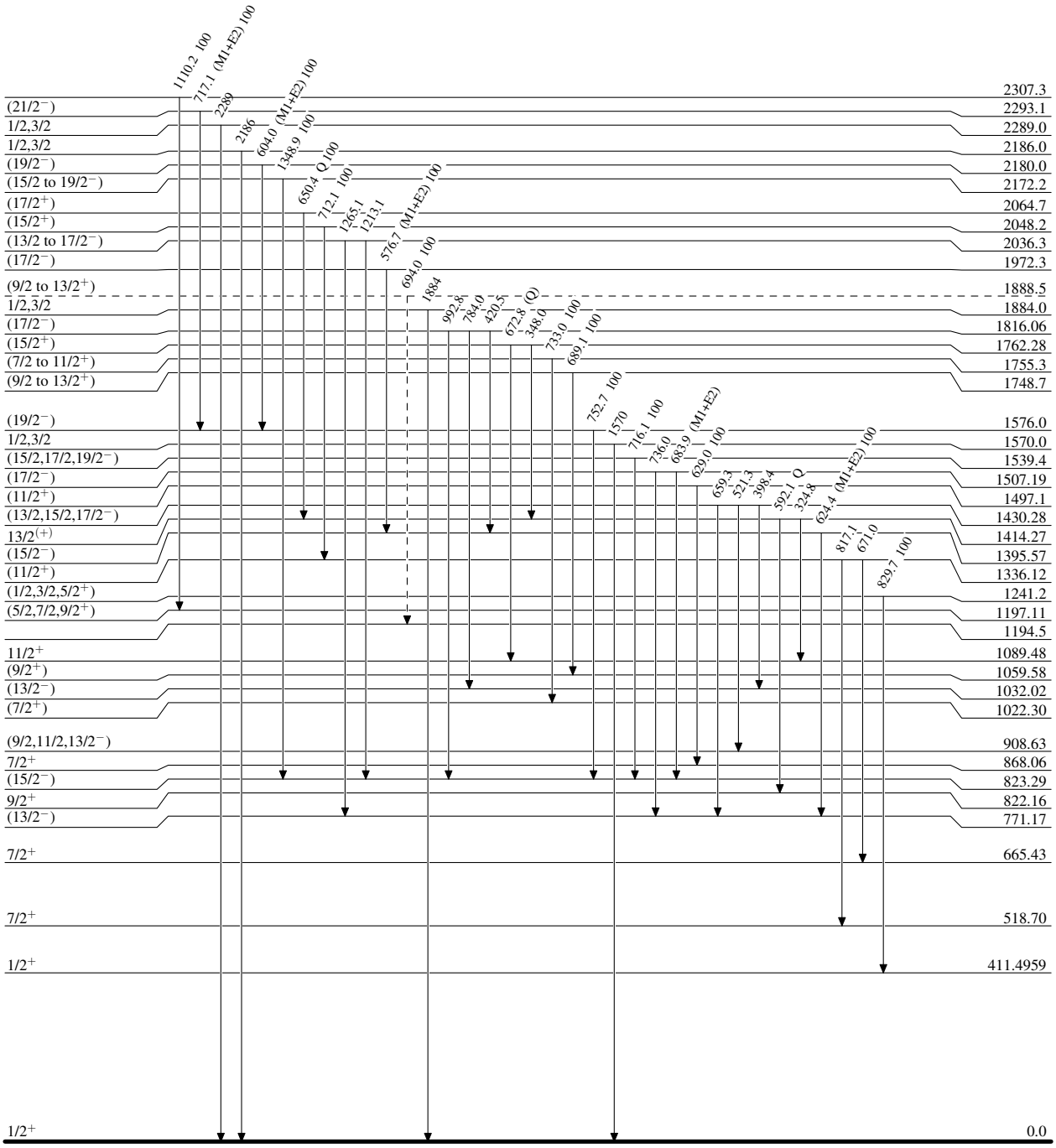
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{129}_{54}Xe_{75}$

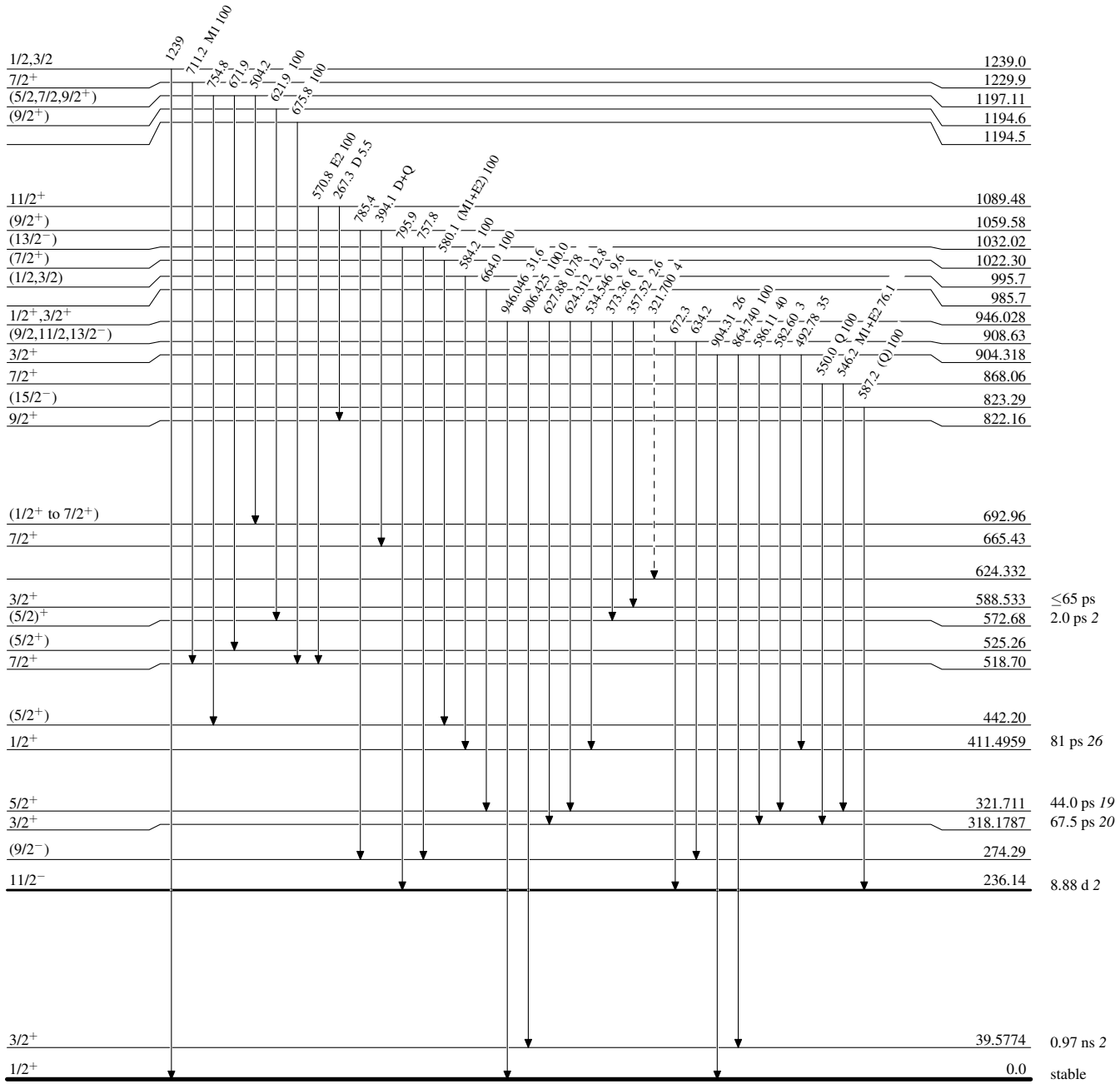
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{129}_{54}Xe_{75}$

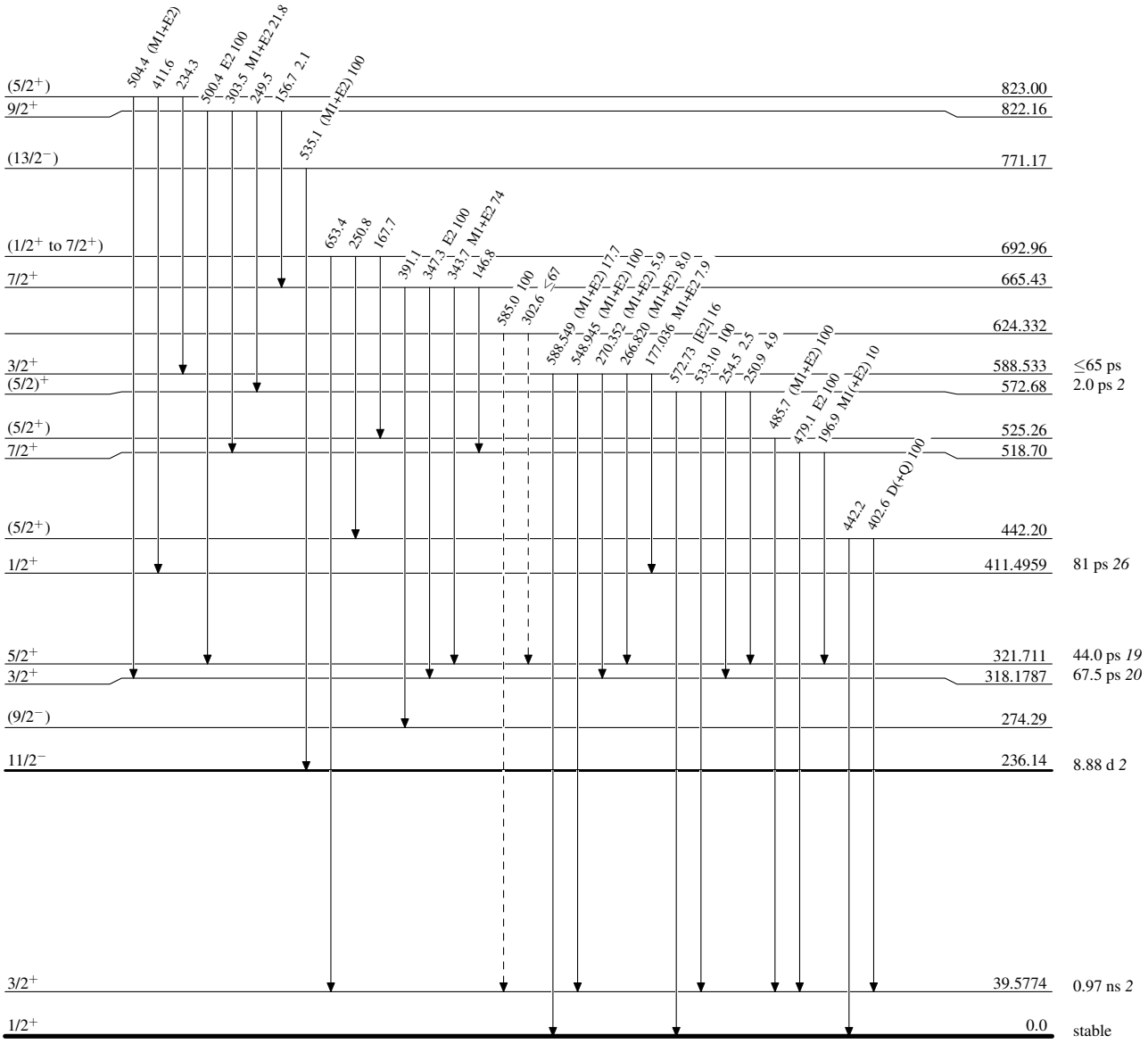
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{129}_{54}Xe_{75}$

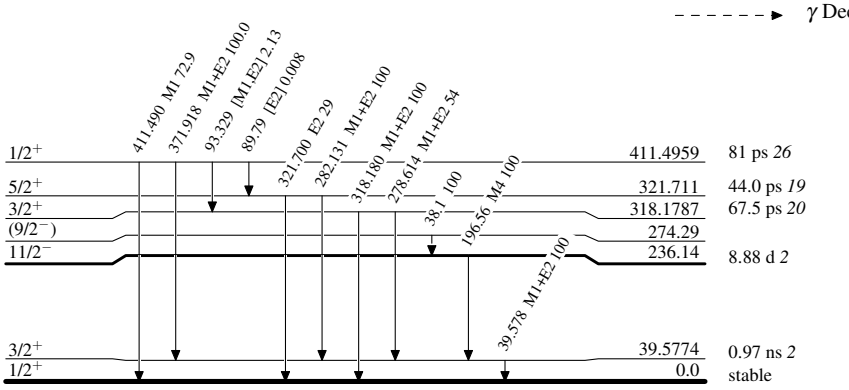
Adopted Levels, Gammas

Legend

Level Scheme (continued)

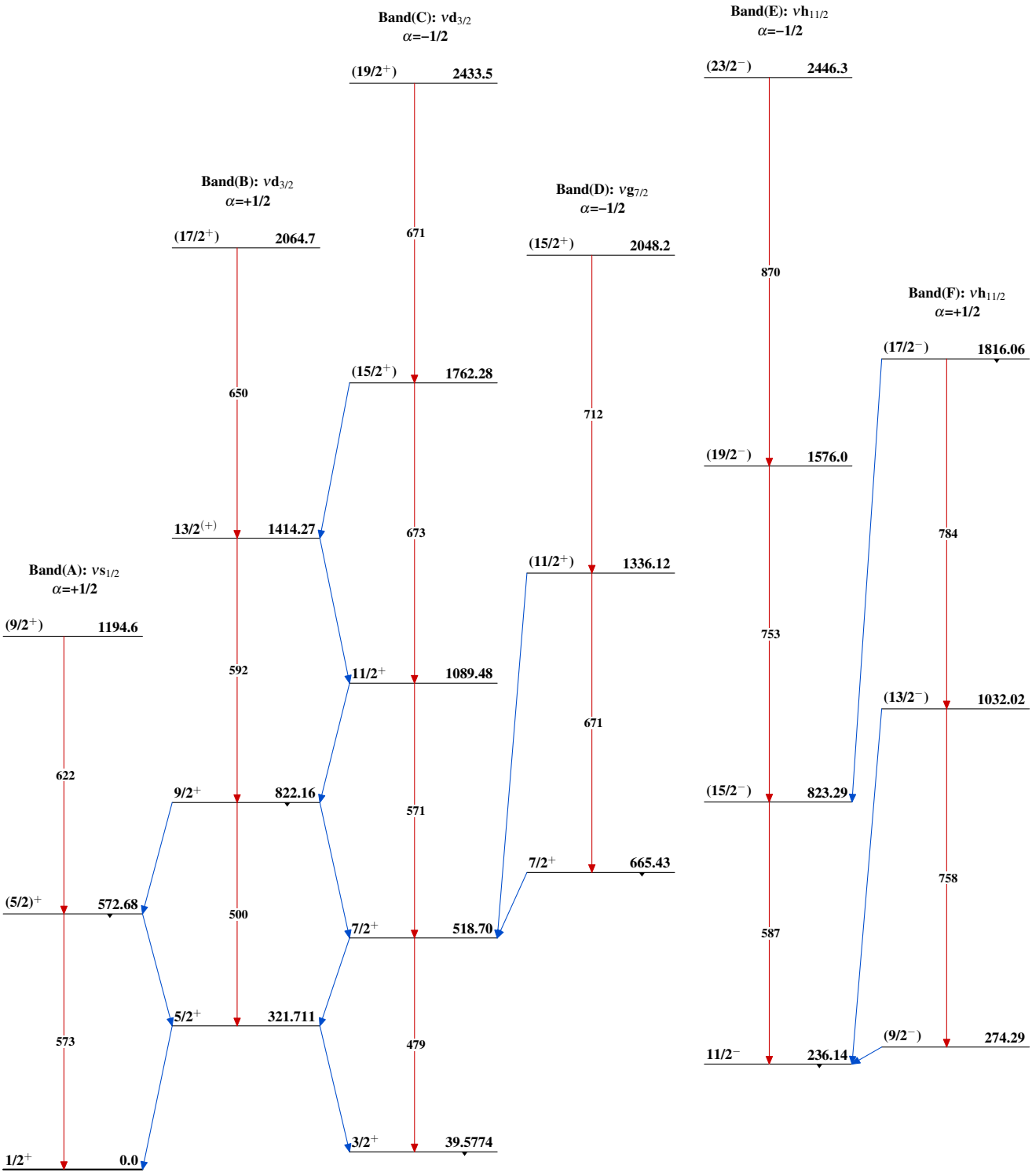
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



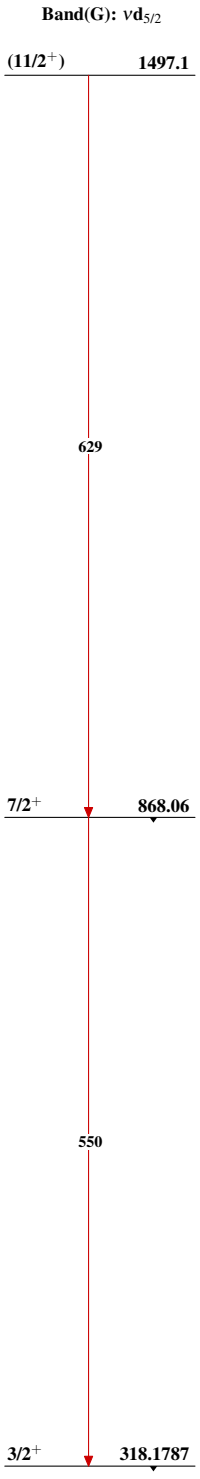
$^{129}_{54}Xe_{75}$

Adopted Levels, Gammas



$^{129}_{54}Xe_{75}$

Adopted Levels, Gammas (continued)



$^{129}_{54}Xe_{75}$