Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	N. Nica	NDS 154, 1 (2018)	20-Nov-2018

Q(β^-)=4064 *9*; S(n)=5413 *3*; S(p)=11804 *5*; Q(α)=−986 *3* 2017Wa10
Fission yields: 2005Ga25, 2005Ga50, 2004Ga60, 2004GaZV, 2004GaZZ, 2004GaZY, 2003Ga21, 2003St03, 2002Ib01, 2000Lh02, 2000Ka02, 2000JoZZ, 2000Ga60, 1998Ph04.
Angular momenta of ^{252}Cf fission fragments: 2005Ja12.

^{140}Xe Levels

Disagreement comment (reproduced from ^{252}Cf SF decay dataset): Although there is a general good agreement in between the experimental work of 2016Ur01 (^{248}Cm SF decay), 2016Hu10, and 2017Na15 (^{252}Cf SF decay; 2017Na15, same group of authors as 2016Ur01) there is disagreement as concern the parity of band D leading to quite different theoretical interpretations. Thus while 2016Ur01 argue for the γ collectivity of band C and D (with π=+ assigned for band C and no parity assigned for band D), 2016Hu10 later argue for s=±1 doublet octupole bands based essentially on assigned π=− for band D. This indeed is based on tentative (E1) assignments for all five ΔJ=1 transitions linking band D to C. However 2017Na15 based on the relatively high quadrupole mixing ratio of 821γ, one of these ΔJ=1 transitions, concluded that this is rather a (M1+E2) transition which qualifies band D as π=+, which contradicts the interpretation of 2016Hu10 and sustains that of 2016Ur01. However 2017Na15 did not report measurement on any of the other four (E1) linking transitions. Based on these experimental findings the evaluator adopts no parity for band D and no E1 or M1 character for the linking transitions before more extensive and precise measurements are going to be published.

Cross Reference (XREF) Flags

A	^{140}I β^- decay	D	^{235}U(n,Fγ) E=thermal
B	^{248}Cm SF decay	E	^{235}U(n,Fγ),^{238}U(n,Fγ) E=3 MeV
C	^{252}Cf SF decay	F	Coulomb excitation

E(level)†	Jπ‡	$T_{1/2}$	XREF	Comments
0.0#	0+	13.60 s *10*	ABCDEF	%β^-=100 $T_{1/2}$: from 1969Ca03. Others: 15.4 s *3* (1974Gr29), 14.3 s *13* (1968Al06), 13.70 s *15* (1966Ar08), 13.33 s *27* (1965Pa14). RMS charge radius <r^2>$^{1/2}$=4.8566 fm *125* (2013An02).
376.658# *15*	2+	70.5 ps *20*	ABCDEF	μ=1.1 *3* $T_{1/2}$: weighted average of 70.5 ps *22* (β- decay (1999Li18)) and 70.7 ps *49* ($\gamma\gamma$(t) (2016Il01), ^{235}U(n,Fγ) E=thermal). Others: 68.6 ps *125* (using ^{241}Pu(n,Fγ) reaction also from 2016Il01), 70 ps *14* (2007Kr19, Coulex), 113 ps *5* (1980ChZM, γ(t) in ^{252}Cf SF decay). 2016Il01 deduce g factor=0.56 *19* using their lifetime and measured gτ from 2009Go09, as compared to g factor=0.35 *12* in 2009Go09. Jπ: E2 γ to g.s. μ: based on 2009Go09 measured g factor by the method of correlation attenuations in randomly oriented magnetic fields (IPAC) (^{252}Cf SF decay dataset). The value g=0.35 *12* reported by 2009Go09 was based on $T_{1/2}$=0.113 ns *5* (1980ChZM) from which 2011StZZ deduced μ=0.7 *2*. Based on the adopted $T_{1/2}$=70.5 ps *20* one gets g=0.56 *19* (also deduced by 2016Il01 in ^{235}U(n,Fγ) E=thermal) which gives the μ value adopted here.
834.295# *24*	4+	14.2 ps *23*	ABCDEF	Jπ: E2 γ to 2+. $T_{1/2}$: weighted average of 16 ps *3* (β- decay (1999Li18)) and 11.8 ps *35* (($\gamma\gamma$(t) (2016Il01), ^{235}U(n,Fγ) E=thermal).
1304.41& *6*	3+		BC	Jπ: M1+E2 γ's to 2+ and 4+.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{140}Xe Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	XREF	Comments
1416.67[#] *5*	6^+	<8.6 ps	ABCD	Jπ: E2 γ to 4^+. $T_{1/2}$: from β- decay (1999Li18).
1443.0 *3*			B	
1512.86[@] *20*	3^-	<7.7 ps	ABC	$T_{1/2}$: from β- decay (1999Li18). Jπ: ΔJ=1 D γ to 2^+; E2 γ from 5^-.
1572.94[&] *5*	5^+		BCD	Jπ: E2 γ to 3^+.
1725.70[b] *5*	6^+		BC	Jπ: stretch E2 γ to 4^+.
1771.33[@] *5*	5^-	11 ps *3*	ABCD	Jπ: E1 γ to 6^+; E1 γ to 4^+. $T_{1/2}$: from β- decay (1999Li18).
1954.38[&] *5*	7^+		BCD	Jπ: E2 γ to 5^+.
1983.33[#] *6*	8^+		BCD	Jπ: E2 γ to 6^+.
2184.53[@] *6*	7^-		BCD	Jπ: E2 γ to 5^-; E1 γ to 6^+; γ to 8^+.
2256.51[b] *6*	8^+		BC	
2282.1[a] *8*	(4)		C	Jπ: ΔJ=1 D γ to 3^+.
2488.9[a] *7*	(6)		C	Jπ: (E2) γ to (4) and ΔJ=1 γ to 5^+.
2588.86[&] *7*	9^+		BC	Jπ: E2 γ to 7^+.
2590.59[#] *7*	10^+		BCD	Jπ: E2 γ to 8^+.
2736.12[@] *6*	9^-		BCD	Jπ: E1(+M2) γ to 8^+.
2775.07[a] *9*	(8)		BC	Jπ: D(+Q) γ to 7^+.
2933.11 *8*			BC	
2965.63[b] *11*	10^+		BC	Jπ: E2 γ to 8^+.
3159.61[a] *15*	(10)		BC	Jπ: (E2) γ to (8).
3246.41[@] *8*	11^-		BC	Jπ: E2 γ to 9^-.
3269.72[#] *9*	12^+		BCD	Jπ: E2 γ to 10^+.
3283.12[&] *8*	(11^+)		BC	Jπ: (E2) γ to 9^+.
3704.3[b] *4*			B	
3729.68[a] *12*	(12)		BC	Jπ: (E2) γ to (10).
3812.67[@] *11*	(13^-)		BC	Jπ: (E2) γ to 11^-.
3997.97[#] *11*	14^+		BC	Jπ: E2 γ to 12^+.
4125.67[&] *12*	(13^+)		BC	Jπ: (E2) γ to (11^+).
4433.87[@] *15*	(15^-)		BC	Jπ: (E2) γ to (13^-).
4744.57[#] *23*	(16^+)		BC	Jπ: (E2) γ to 14^+.
5166.67[@] *17*	(17^-)		BC	Jπ: (E2) γ to (15^-).
5504.8[#] *4*	(18^+)		BC	Jπ: (E2) γ to (16^+).

[†] From least-squares fit to Eγ's; χ^2(norm)=2.1 is slightly higher than χ^2(critical)=1.7.
[‡] Based on measured multipolarities and other arguments of which most often membership in band is tacitly applied.
[#] Band(A): Yrast band.
[@] Band(B): 3^- octupole band.
[&] Band(C): Positive band based on 3^+.
[a] Band(D): Band based on J=(4). Assigned as band referring to the work of 2016Ur01 by 2017Na15 (^{252}Cf Decay) in a discussion about its nature in contradiction with 2016Hu10 ((see the disagreement comment); no parity was adopted because of opposite assignments of 2016Hu10 (π=−) and 2017Na15 (π=+).
[b] Band(E): band based on $J=6^+$.

Adopted Levels, Gammas (continued)

γ(^{140}Xe)

See ^{140}I β- for unplaced γ's.

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#d]	α[c]	Comments
376.658	2+	376.657[@] *15*	100	0.0	0+	E2		0.0205	B(E2)(W.u.)=24.0 *7* α(K)=0.01714 *24*; α(L)=0.00270 *4*; α(M)=0.000555 *8* α(N)=0.0001131 *16*; α(O)=1.326×10^{-5} *19* Mult.: α(K)exp in β$^-$ dataset.
834.295	4+	457.630[@] *19*	100	376.658	2+	E2		0.01154	B(E2)(W.u.)=45 +*9*−*6* α(K)=0.00973 *14*; α(L)=0.001444 *21*; α(M)=0.000296 *5* α(N)=6.05×10^{-5} *9*; α(O)=7.21×10^{-6} *10* Mult.: α(K)exp in β$^-$ dataset.
1304.41	3+	470.10 *9*	70[&] *1*	834.295	4+	M1+E2	−0.11 *2*	0.01295	α(K)=0.01118 *16*; α(L)=0.001417 *20*; α(M)=0.000287 *4* α(N)=5.94×10^{-5} *9*; α(O)=7.46×10^{-6} *11*
		927.90 *9*	100[&] *3*	376.658	2+	M1+E2	+0.65 *15*	0.00235 *7*	α(K)=0.00204 *6*; α(L)=0.000255 *7*; α(M)=5.15×10^{-5} *14* α(N)=1.07×10^{-5} *3*; α(O)=1.34×10^{-6} *4*
1416.67	6+	582.44 *5*	100	834.295	4+	E2		0.00593	B(E2)(W.u.)>22.6 α(K)=0.00505 *7*; α(L)=0.000707 *10*; α(M)=0.0001442 *21* α(N)=2.96×10^{-5} *5*; α(O)=3.58×10^{-6} *5* Mult.: α(K)exp in β$^-$ dataset.
1443.0		1066.3 *3*	100[b]	376.658	2+				
1512.86	3−	678.6[@]	39 *5*	834.295	4+	(E1)		1.49×10^{-3}	B(E1)(W.u.)>2.43×10^{-5} α(K)=0.001294 *19*; α(L)=0.0001583 *23*; α(M)=3.19×10^{-5} *5* α(N)=6.59×10^{-6} *10*; α(O)=8.22×10^{-7} *12*
		1136.7[@]	100 *11*	376.658	2+	(E1)		5.48×10^{-4}	B(E1)(W.u.)>1.48×10^{-5} α(K)=0.000469 *7*; α(L)=5.64×10^{-5} *8*; α(M)=1.135×10^{-5} *16* α(N)=2.35×10^{-6} *4*; α(O)=2.95×10^{-7} *5*; α(IPF)=8.80×10^{-6} *13*
1572.94	5+	156.3 *1*	4.0[&] *3*	1416.67	6+	M1+E2[a]		0.31 *8*	α(K)=0.24 *5*; α(L)=0.049 *23*; α(M)=0.0103 *49* α(N)=0.00207 *96*; α(O)=2.31×10^{-4} *93*
		268.60 *6*	11.3[&] *6*	1304.41	3+	E2[a]		0.0599	α(K)=0.0489 *7*; α(L)=0.00877 *13*; α(M)=0.00182 *3* α(N)=0.000368 *6*; α(O)=4.18×10^{-5} *6*
		738.64 *5*	100[&] *2*	834.295	4+	M1+E2[a]	+0.51[a] *4*	0.00411 *7*	α(K)=0.00355 *6*; α(L)=0.000448 *7*; α(M)=9.06×10^{-5} *14* α(N)=1.87×10^{-5} *3*; α(O)=2.35×10^{-6} *4*
1725.70	6+	309.10 *5*	70[&] *2*	1416.67	6+	M1+E2	+0.48 *4*	0.0378	α(K)=0.0323 *5*; α(L)=0.00438 *7*; α(M)=0.000892 *14* α(N)=0.000184 *3*; α(O)=2.26×10^{-5} *4*
		891.20 *7*	100[&] *2*	834.295	4+	E2[a]		0.00209	α(K)=0.00180 *3*; α(L)=0.000234 *4*; α(M)=4.75×10^{-5} *7* α(N)=9.79×10^{-6} *14*; α(O)=1.210×10^{-6} *17*

$^{140}_{54}Xe_{86}$-3

Adopted Levels, Gammas (continued)

γ(^{140}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
1771.33	5⁻	258.5 *2*	7.1[&] *10*	1512.86	3⁻	E2[a]	0.0679	B(E2)(W.u.)=64 *+38−22* α(K)=0.0552 *8*; α(L)=0.01010 *15*; α(M)=0.00210 *3* α(N)=0.000424 *6*; α(O)=4.80×10^{-5} *7*
		355.0	6.9 *5*	1416.67	6⁺	E1	0.00676	B(E1)(W.u.)=3.1×10^{-5} *+16−9* α(K)=0.00585 *9*; α(L)=0.000731 *11*; α(M)=0.0001474 *21* α(N)=3.04×10^{-5} *5*; α(O)=3.75×10^{-6} *6* Mult.: α(K)exp in β$^-$ dataset.
		937.03 *5*	100 *2*	834.295	4⁺	E1	7.75×10^{-4}	B(E1)(W.u.)=2.4×10^{-5} *+10−6* α(K)=0.000673 *10*; α(L)=8.15×10^{-5} *12*; α(M)=1.640×10^{-5} *23* α(N)=3.39×10^{-6} *5*; α(O)=4.25×10^{-7} *6* Mult.: α(K)exp in β$^-$ dataset.
1954.38	7⁺	228.70 *7*	16.9[&] *14*	1725.70	6⁺	(E2)[a]	0.1021	α(K)=0.0821 *12*; α(L)=0.01597 *23*; α(M)=0.00333 *5* α(N)=0.000671 *10*; α(O)=7.50×10^{-5} *11*
		381.48 *5*	100[&] *4*	1572.94	5⁺	E2	0.0197	α(K)=0.01650 *24*; α(L)=0.00259 *4*; α(M)=0.000532 *8* α(N)=0.0001084 *16*; α(O)=1.273×10^{-5} *18*
		537.70 *5*	48[&] *1*	1416.67	6⁺	(M1(+E2))[a]	0.0083 *10*	α(K)=0.0071 *9*; α(L)=0.00095 *7*; α(M)=0.000193 *12* α(N)=4.0×10^{-5} *3*; α(O)=4.9×10^{-6} *5*
1983.33	8⁺	566.64 *5*	100[&]	1416.67	6⁺	E2	0.00638	α(K)=0.00543 *8*; α(L)=0.000764 *11*; α(M)=0.0001560 *22* α(N)=3.20×10^{-5} *5*; α(O)=3.87×10^{-6} *6*
2184.53	7⁻	413.20 *7*	19.6[&] *14*	1771.33	5⁻	E2[a]	0.01554	α(K)=0.01304 *19*; α(L)=0.00199 *3*; α(M)=0.000409 *6* α(N)=8.35×10^{-5} *12*; α(O)=9.87×10^{-6} *14* Mult.: deduced in SF decay: E2,M2 for this γ, M2 excluded by non-observance of $T_{1/2}$>10 ns for the octupole band.
		767.92 *5*	100.0[&] *2*	1416.67	6⁺	E1	1.15×10^{-3}	α(K)=0.000999 *14*; α(L)=0.0001218 *17*; α(M)=2.45×10^{-5} *4* α(N)=5.07×10^{-6} *7*; α(O)=6.33×10^{-7} *9*
2256.51	8⁺	273.24 *6*	29[&] *1*	1983.33	8⁺	(M1+E2)[a]	0.0543 *25*	α(K)=0.0455 *10*; α(L)=0.0070 *13*; α(M)=0.0014 *3* α(N)=0.00029 *6*; α(O)=3.5×10^{-5} *5*
		302.22 *9*	23[&] *1*	1954.38	7⁺	(M1+E2)[a]	0.0404 *8*	α(K)=0.0340 *7*; α(L)=0.0051 *7*; α(M)=0.00104 *15* α(N)=0.00021 *3*; α(O)=2.55×10^{-5} *23*
		530.55 *12*	71[&] *2*	1725.70	6⁺	(E2)[a]	0.00762	α(K)=0.00647 *9*; α(L)=0.000925 *13*; α(M)=0.000189 *3* α(N)=3.87×10^{-5} *6*; α(O)=4.66×10^{-6} *7*
		839.79 *7*	100[&] *2*	1416.67	6⁺	E2	0.00240	α(K)=0.00206 *3*; α(L)=0.000270 *4*; α(M)=5.48×10^{-5} *8* α(N)=1.130×10^{-5} *16*; α(O)=1.393×10^{-6} *20*
2282.1	(4)	769.1[b]	100[&] *10*	1512.86	3⁻	D(+Q)[a]		Mult.: (M1+E2) not adopted (see general disagreement comment).
		977.8[b]	71[&] *6*	1304.41	3⁺	D[a]		Mult.: (E1) not adopted (see general disagreement comment).
2488.9	(6)	206.7[be]	<26[&]	2282.1	(4)	(E2)[a]	0.1437	α(K)=0.1142 *16*; α(L)=0.0235 *4*; α(M)=0.00492 *7* α(N)=0.000990 *14*; α(O)=0.0001093 *16*
		717.7[b]	34[&] *5*	1771.33	5⁻	D(+Q)[a]		Mult.: (M1+E2) not adopted (see general disagreement comment).
		915.9[b]	100[&] *5*	1572.94	5⁺	D[a]		Mult.: (E1) not adopted (see general disagreement comment).

$^{140}_{54}Xe_{86}$-4

Adopted Levels, Gammas (continued)

γ(^{140}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#d]	α[c]	Comments
2588.86	9+	605.0 *3*	71[&] *6*	1983.33	8+	(M1+E2)		0.0062 *9*	α(K)=0.0053 *8*; α(L)=0.00070 *7*; α(M)=0.000141 *12* α(N)=2.9×10^{-5} *3*; α(O)=3.6×10^{-6} *4*
		634.50 *5*	100[&] *2*	1954.38	7+	E2[a]		0.00475	α(K)=0.00405 *6*; α(L)=0.000557 *8*; α(M)=0.0001135 *16* α(N)=2.33×10^{-5} *4*; α(O)=2.84×10^{-6} *4*
2590.59	10+	607.25 *5*	100	1983.33	8+	E2[a]		0.00532	α(K)=0.00453 *7*; α(L)=0.000629 *9*; α(M)=0.0001282 *18* α(N)=2.63×10^{-5} *4*; α(O)=3.19×10^{-6} *5*
2736.12	9−	479.55 *8*	30.8[&] *13*	2256.51	8+	(E1)[a]		0.00325	α(K)=0.00281 *4*; α(L)=0.000348 *5*; α(M)=7.02×10^{-5} *10* α(N)=1.447×10^{-5} *21*; α(O)=1.80×10^{-6} *3*
		551.64 *5*	100[&] *5*	2184.53	7−	[E2]		0.00686	α(K)=0.00583 *9*; α(L)=0.000826 *12*; α(M)=0.0001685 *24* α(N)=3.46×10^{-5} *5*; α(O)=4.17×10^{-6} *6*
		752.85 *8*	77[&] *2*	1983.33	8+	E1(+M2)	+0.007 *14*	1.20×10^{-3} *2*	α(K)=0.001041 *15*; α(L)=0.0001270 *19*; α(M)=2.56×10^{-5} *4* α(N)=5.28×10^{-6} *8*; α(O)=6.60×10^{-7} *10*
2775.07	(8)	286.4[e]	<8[&]	2488.9	(6)	(E2)[a]		0.0486	α(K)=0.0399 *6*; α(L)=0.00695 *10*; α(M)=0.001440 *21* α(N)=0.000292 *4*; α(O)=3.34×10^{-5} *5*
		820.67 *7*	100[&]	1954.38	7+	D(+Q)			Mult.,δ: contradictorily assigned in ^{252}Cf decay dataset as (M1+E2) with δ=+0.21 *11* or or +3.9 *15* (2017Na15), and (E1) (2016Hu10), neither of which being adopted here (see general disagreement comment).
2933.11		197.8 *2*	33[b] *11*	2736.12	9−				E_γ: poor fit (Eγ differs by ΔE(levels) by more than 4σ).
		949.70 *6*	100[b] *11*	1983.33	8+				
2965.63	10+	376.8 *2*	100[&] *7*	2588.86	9+	(M1)[a]		0.0226	α(K)=0.0195 *3*; α(L)=0.00249 *4*; α(M)=0.000505 *7* α(N)=0.0001045 *15*; α(O)=1.311×10^{-5} *19*
		709.40 *15*	<34[&]	2256.51	8+	(E2)[a]		0.00359	α(K)=0.00307 *5*; α(L)=0.000414 *6*; α(M)=8.41×10^{-5} *12* α(N)=1.731×10^{-5} *25*; α(O)=2.12×10^{-6} *3*
		981.9 *2*	<34[&]	1983.33	8+	E2[a]		1.69×10^{-3}	α(K)=0.001453 *21*; α(L)=0.000187 *3*; α(M)=3.78×10^{-5} *6* α(N)=7.80×10^{-6} *11*; α(O)=9.67×10^{-7} *14*
3159.61	(10)	384.45 *15*	20[&] *1*	2775.07	(8)	(E2)[a]		0.0193	α(K)=0.01613 *23*; α(L)=0.00252 *4*; α(M)=0.000518 *8* α(N)=0.0001057 *15*; α(O)=1.241×10^{-5} *18*
		570.6	100[&] *3*	2588.86	9+	D[a]			Mult.: (E1) not adopted (see general disagreement comment).
3246.41	11−	280.92 *21*	10[&] *1*	2965.63	10+	(E1)[a]		0.01235	α(K)=0.01067 *15*; α(L)=0.001345 *19*; α(M)=0.000271 *4* α(N)=5.58×10^{-5} *8*; α(O)=6.85×10^{-6} *10*
		313.3 *2*	10[&] *1*	2933.11					
		510.30 *6*	100[&] *3*	2736.12	9−	E2[a]		0.00848	α(K)=0.00719 *10*; α(L)=0.001037 *15*; α(M)=0.000212 *3* α(N)=4.34×10^{-5} *6*; α(O)=5.21×10^{-6} *8*
		655.3 *3*	<3[&]	2590.59	10+	(E1)[a]		1.61×10^{-3}	α(K)=0.001394 *20*; α(L)=0.0001708 *24*; α(M)=3.44×10^{-5} *5* α(N)=7.10×10^{-6} *10*; α(O)=8.86×10^{-7} *13*
3269.72	12+	679.11 *5*	100	2590.59	10+	E2[a]		0.00400	α(K)=0.00342 *5*; α(L)=0.000464 *7*; α(M)=9.44×10^{-5} *14* α(N)=1.94×10^{-5} *3*; α(O)=2.37×10^{-6} *4*

$^{140}_{54}Xe_{86}$-5

Adopted Levels, Gammas (continued)

γ(^{140}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[c]	Comments
3283.12	(11$^+$)	350.0 *4*	13[&] *6*	2933.11				
		692.6 *1*	81[&] *13*	2590.59	10$^+$	(M1+E2)[a]	0.0044 *7*	α(K)=0.0038 *6*; α(L)=0.00049 *6*; α(M)=0.000100 *11* α(N)=2.06×10^{-5} *23*; α(O)=2.6×10^{-6} *4*
		694.26 *6*	100[&] *13*	2588.86	9$^+$	(E2)[a]	0.00378	α(K)=0.00324 *5*; α(L)=0.000438 *7*; α(M)=8.91×10^{-5} *13* α(N)=1.83×10^{-5} *3*; α(O)=2.24×10^{-6} *4*
3704.3		738.7 *3*	100	2965.63	10$^+$			
3729.68	(12)	446.6 *1*	100[&] *9*	3283.12	(11$^+$)	D[a]		Mult.: (E1) not adopted (see general disagreement comment).
		569.9 *2*	57[&] *11*	3159.61	(10)	(E2)[a]	0.00629	α(K)=0.00535 *8*; α(L)=0.000752 *11*; α(M)=0.0001534 *22* α(N)=3.15×10^{-5} *5*; α(O)=3.80×10^{-6} *6*
3812.67	(13$^-$)	543.0 *3*	8[b] *4*	3269.72	12$^+$			
		566.25 *7*	100[&] *12*	3246.41	11$^-$	(E2)[a]	0.00639	α(K)=0.00544 *8*; α(L)=0.000766 *11*; α(M)=0.0001563 *22* α(N)=3.21×10^{-5} *5*; α(O)=3.87×10^{-6} *6*
3997.97	14$^+$	728.25 *6*	100	3269.72	12$^+$	E2[a]	0.00337	α(K)=0.00288 *4*; α(L)=0.000387 *6*; α(M)=7.86×10^{-5} *11* α(N)=1.617×10^{-5} *23*; α(O)=1.98×10^{-6} *3*
4125.67	(13$^+$)	842.6 *1*	100 *7*	3283.12	(11$^+$)	(E2)[a]	0.00238	α(K)=0.00205 *3*; α(L)=0.000268 *4*; α(M)=5.44×10^{-5} *8* α(N)=1.121×10^{-5} *16*; α(O)=1.382×10^{-6} *20*
		855.5 *3*	27 *4*	3269.72	12$^+$	(M1+E2)[a]	0.0027 *4*	α(K)=0.0023 *4*; α(L)=0.00029 *4*; α(M)=5.9×10^{-5} *8* α(N)=1.23×10^{-5} *15*; α(O)=1.54×10^{-6} *21*
4433.87	(15$^-$)	621.2 *1*	100	3812.67	(13$^-$)	(E2)[a]	0.00501	α(K)=0.00428 *6*; α(L)=0.000591 *9*; α(M)=0.0001203 *17* α(N)=2.47×10^{-5} *4*; α(O)=3.00×10^{-6} *5*
4744.57	(16$^+$)	746.6 *2*	100	3997.97	14$^+$	(E2)[a]	0.00317	α(K)=0.00272 *4*; α(L)=0.000363 *5*; α(M)=7.37×10^{-5} *11* α(N)=1.517×10^{-5} *22*; α(O)=1.86×10^{-6} *3*
5166.67	(17$^-$)	732.80 *8*	100	4433.87	(15$^-$)	(E2)[a]	0.00331	α(K)=0.00284 *4*; α(L)=0.000380 *6*; α(M)=7.73×10^{-5} *11* α(N)=1.591×10^{-5} *23*; α(O)=1.95×10^{-6} *3*
5504.8	(18$^+$)	760.22 *24*	100[&]	4744.57	(16$^+$)	(E2)	0.00303	α(K)=0.00260 *4*; α(L)=0.000346 *5*; α(M)=7.03×10^{-5} *10* α(N)=1.449×10^{-5} *21*; α(O)=1.778×10^{-6} *25*

[†] From ^{248}Cm decay unless noted otherwise.
[‡] From ^{140}I β^- decay unless noted otherwise.
[#] Unless noted otherwise, from ^{248}Cm decay from measured γγ(θ) (2016Ur01 and 2003Ur02) and polarization measurements (2003Ur02) combined with extra level scheme or theoretical arguments.
[@] From ^{140}I β^- decay.
[&] From ^{252}Cf SF decay.
[a] From ^{252}Cf SF decay from γγ(θ).
[b] From ^{248}Cm SF decay.
[c] Additional information 1.

$^{140}_{54}Xe_{86}$-6

Adopted Levels, Gammas (continued)

$\gamma(^{140}Xe)$ (continued)

[d] If No value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.
[e] Placement of transition in the level scheme is uncertain.

$^{140}_{54}Xe_{86}$-7

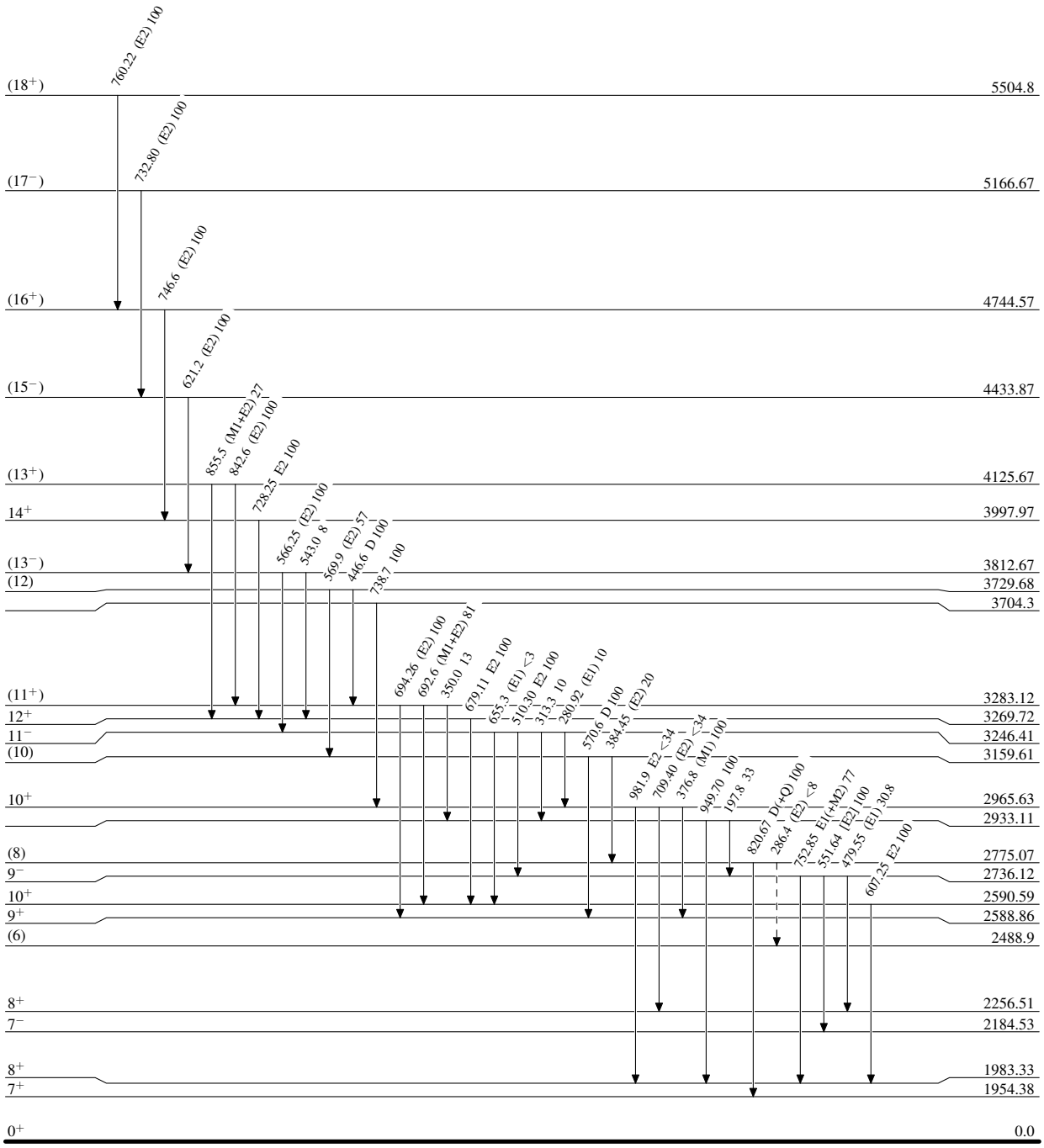
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{140}_{54}Xe_{86}$

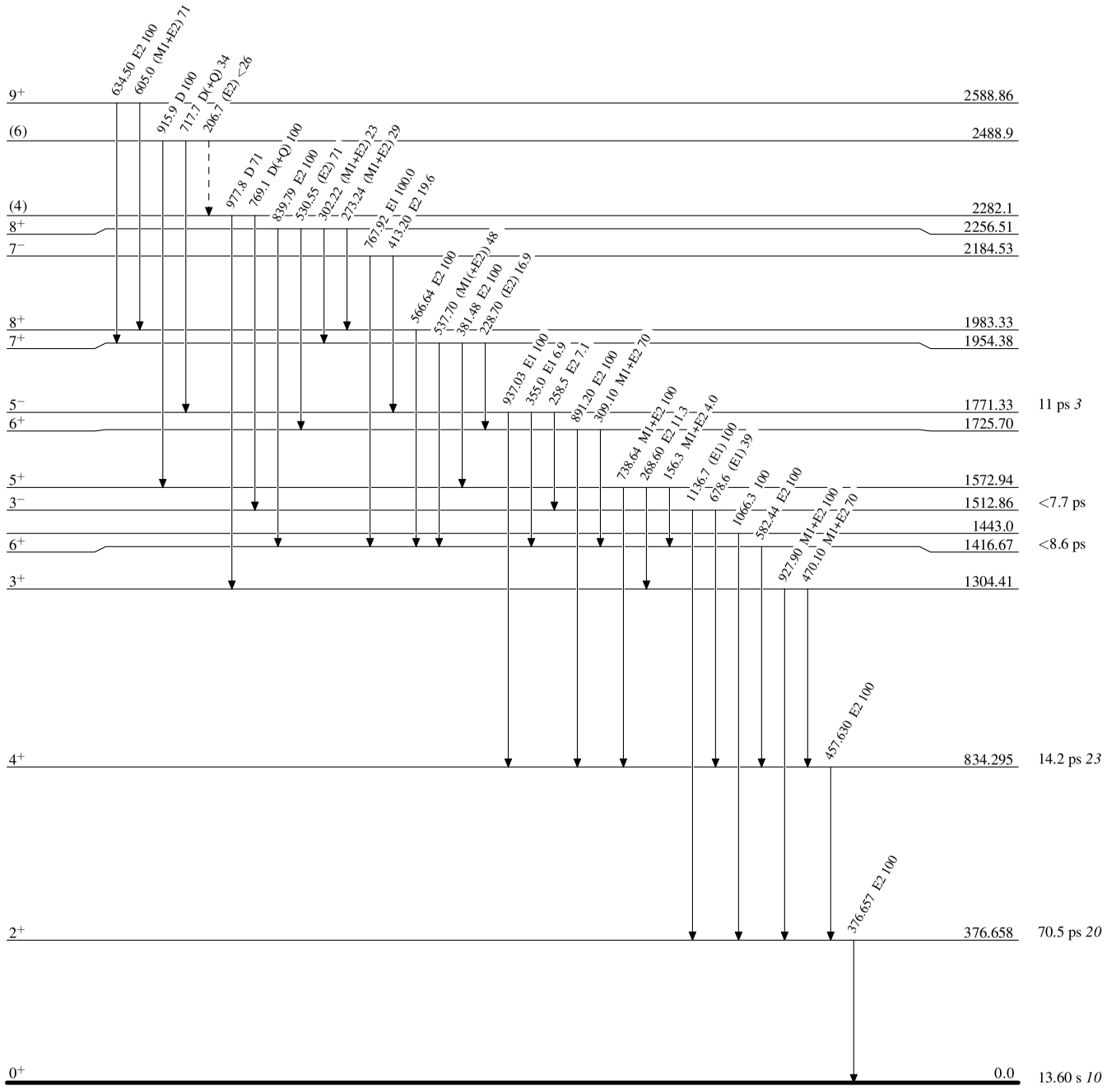
Adopted Levels, Gammas

Legend

Level Scheme (continued)

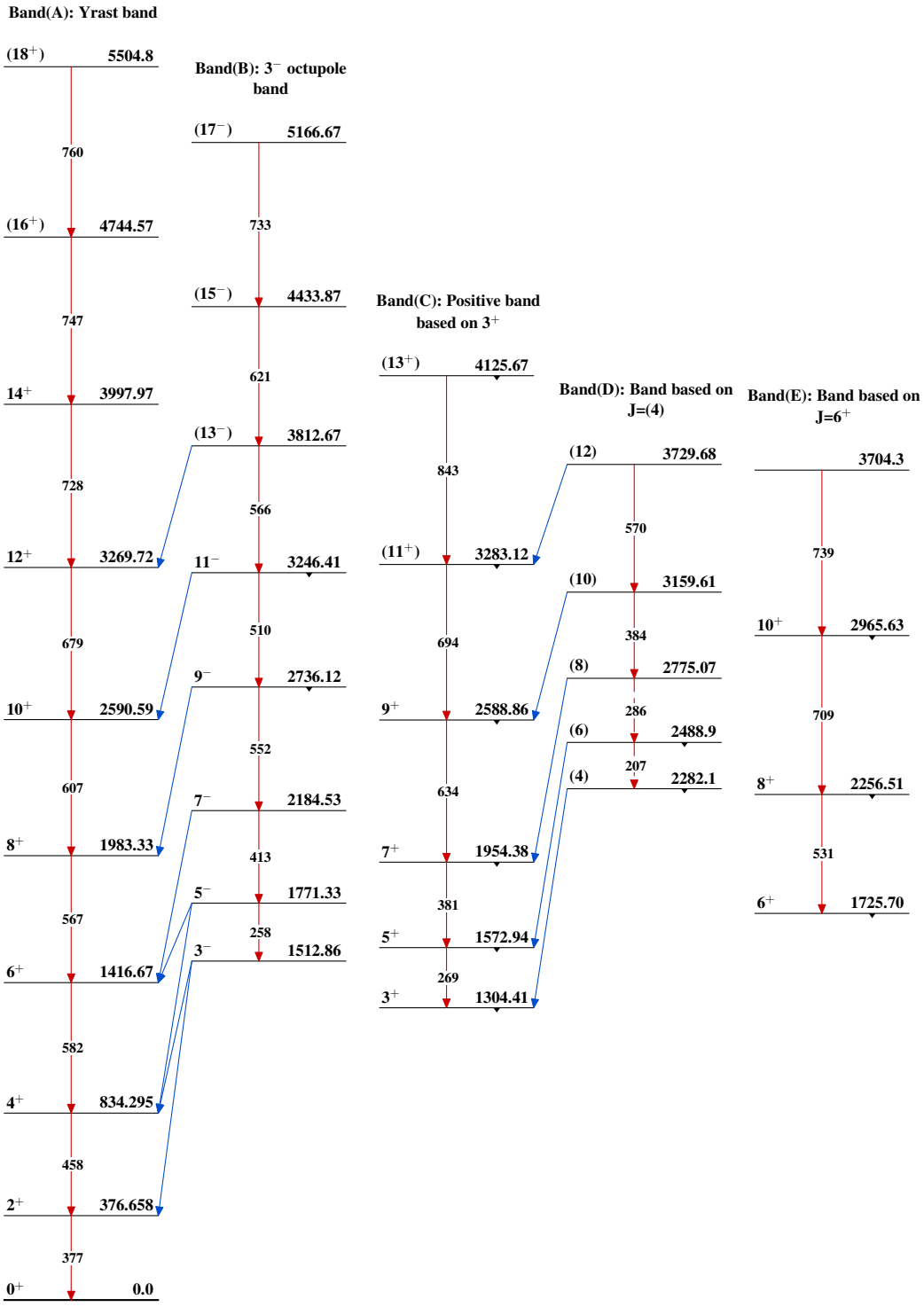
Intensities: Relative photon branching from each level

- - - - - - ► γ Decay (Uncertain)



$^{140}_{54}Xe_{86}$

Adopted Levels, Gammas



$^{140}_{54}Xe_{86}$