Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Zoltan Elekes and Janos Timar	NDS 129,191 (2015)	28-Feb-2015

Q(β^-)=−3929 *5*; S(n)=9610 *4*; S(p)=8165 *4*; Q(α)=−1759.9 *18* 2012Wa38

^{128}Xe Levels

Cross Reference (XREF) Flags

A	^{128}I β^- decay (24.99 min)	E	Coulomb excitation
B	^{128}Cs ε decay (3.66 min)	F	(HI,xnγ)
C	^{125}Te(α,nγ),^{126}Te(α,2nγ)	G	^{128}Xe(γ,γ')
D	^{126}Te(^{3}He,n)		

E(level)	J$^\pi$	T$_{1/2}$[‡]	XREF	Comments
0.0[†]	0$^+$	stable	ABCDEFG	
442.911[†] *9*	2$^+$	18 ps *4*	ABCDEFG	μ=+0.82 *14* μ: from ion implantation PAC in Coulomb excitation value from 1977Ar19. Other: +0.62 *6* (lifetime-dependent value) (1975Go18). J$^\pi$: E2 γ to 0$^+$. T$_{1/2}$: from B(E2) 20.7 ps *4* can be derived. B(E2)=0.817 *16*. The value is weighted average of 0.90 *10* (1993Sr01), 0.69 *5* (1975Go18), 0.89 *23* (1958Pi05), 0.79 *4* (1975EdZY) and 0.825 *+11−12* (2006Mu04).
969.475[d] *11*	2$^+$	4.78 ps *28*	ABC EFG	J$^\pi$: E2 γ to 0$^+$. T$_{1/2}$: from B(E2) and γ branching 5.7 ps *5* can be derived. Other: <4 ns in (α,2nγ) (1981Go04). B(E2)(0$^+$: 0 level)=0.012 *1*, B(M1)(2$^+$: 443 level)=0.0023 *+20−11*, B(E2)(2$^+$: 443 level)=0.19 *2*; Iγ(526γ):Iγ(969γ)=11.2 *6*:3.1 *4* (1993Sr01). B(E2) values from 2009Co24 were not used since the branching ratios are uncertain.
1033.149[†] *19*	4$^+$	3.33 ps *14*	BC EF	J$^\pi$: E2 γ to 2$^+$, g.s. band member. T$_{1/2}$: from B(E2) 3.33 ps *16* can be derived. Other: <4 ns from (α,2nγ) (1981Go04). B(E2)(2$^+$: 443 level)=0.429 *24*. Weighted average of 0.41 *4* (1993Sr01) and 0.44 *3* (2009Co24).
1429.56[d] *3*	3$^+$	1.59 ps *21*	BC EF	J$^\pi$: M1+E2 γ's to 4$^+$ and 2$^+$. T$_{1/2}$: from (α,2nγ) (1981Go04).
1582.976 *15*	0$^+$		ABC E	J$^\pi$: E2 γ to 2$^+$.
1603.50[d] *15*	4$^+$	2.43 ps *14*	C EF	J$^\pi$: E2 γ to 2$^+$, M1+E2 γ to 4$^+$. T$_{1/2}$: from B(E2) 2.28 ps *23* can be derived. B(E2)(4$^+$: 1033 level)=0.114 *10* (weighted average of 0.11 *2* (1993Sr01) and 0.115 *12* (2009Co24)), B(M1)(4$^+$: 1033 level)=0.009 *2* (1993Sr01), B(E2)(2$^+$: 969 level)=0.210 *19* (weighted average of 0.22 *4* (1993Sr01) and 0.207 *21* (2009Co24)), B(E2)(2$^+$: 443 level)=0.0036 *3* (weighted average of 0.0036 *5* (1993Sr01) and 0.0036 *4* (2009Co24)).
1737.29[†] *16*	6$^+$	1.39 ps *7*	C EF	J$^\pi$: E2 γ to 4$^+$, g.s. band member. T$_{1/2}$: from B(E2) 1.00 ps *9* can be derived. Other: <4 ns in (α,2nγ) (1981Go04). B(E2)(4$^+$: 1033 level)=0.47 *7*. Weighted average of 0.43 *4* (1993Sr01) and 0.59 *7* (2009Co24).
1877.33 *8*	0$^+$	0.18 ps *3*	ABCDE	XREF: D(1850). J$^\pi$: L=0 in ^{128}Te(^{3}He,n). T$_{1/2}$: from B(E2) in Coulomb excitation.
1996.74[d] *19*	5$^+$		C F	J$^\pi$: E2 γ to 3$^+$, D+Q γ to 4$^+$.

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Adopted Levels, Gammas (continued)

^{128}Xe Levels (continued)

E(level)	Jπ	$T_{1/2}$‡	XREF	Comments
1999.645 *21*	$(2)^+$		BC	Jπ: M1+E2 γ to 2^+, γ′s to 4^+ and 0^+.
2023.06 *20*	(4^+)		C	Jπ: D+Q γ′s to 2^+ and 4^+.
2127.06 *3*	$1^+,2^+,3^+$	0.12 ps *5*	BC E	Jπ: M1(+E2) γ to 2^+. $T_{1/2}$: from DSAM in (α,nγ) (1997Wi18). 0.16 ps *5* from B(E2) in Coulomb excitation.
2138.68 *20*	(3^-)		C E	Jπ: D+Q γ to 2^+, excitation in (α,nγ).
2165.9 *4*	(4)		C E	Jπ: from excitation in (α,nγ).
2191.0 *10*	1[g]		G	
2229.22[a] *20*	5^-	<6 ns	C EF	Jπ: E1 γ to 4^+, γ to 6^+. $T_{1/2}$: from (α,2nγ) (1981Go04).
2252.89 *6*			BC	
2272.85 *3*	(2^+)		BC	Jπ: (M1) γ to 2^+, γ to 4^+.
2276.0 *10*	1[g]		G	
2280.93[d] *19*	$(6)^+$	<4 ns	C EF	Jπ: M1+E2 γ to 6^+, band member. $T_{1/2}$: from (α,2nγ) (1981Go04).
2305.7 *3*	(3)		C	Jπ: from excitation in (α,nγ).
2336.05 *21*	(4)		C	Jπ: from excitation in (α,nγ).
2360.0 *10*	1[g]		G	
2361.6 *3*	(3)		C E	Jπ: from excitation in (α,nγ).
2361.80 *4*	$(1,2^+)$		BC	Jπ: γ to 0^+.
2388.81 *24*	$(3,4^+)$		C	Jπ: D γ to 4^+, γ to 2^+.
2416.0 *10*	1[g]		G	
2421.08 *4*			B	
2430.69 *3*	$(1,2^+)$		BC E	Jπ: D γ to 2^+, γ to 0^+.
2438.8 *3*			C	
2443.92 *16*			B	
2444.0 *5*			C	
2462.73 *22*	(4)		C	Jπ: from excitation in (α,nγ).
2469.65 *22*	3,4,5		C	Jπ: D γ to 4^+.
2469.9 *5*			C	
2482.51 *3*	(2)		BC	Jπ: from excitation in (α,nγ).
2500.84[&] *21*	6^-	<3 ns	C F	Jπ: M1+E2 γ to 5^-, E1+M2 γ to 5^+.
2509.2 *4*	(3)		C	Jπ: from excitation in (α,nγ).
2510.71 *3*	(2)		BC	Jπ: γ′s to 0^+ and 4^+.
2512.9[†] *3*	8^+	0.55 ps *6*	C EF	Jπ: E2 γ to 6^+, g.s. band member. $T_{1/2}$: from B(E2) in Coulomb excitation. Other: <3 ns in (α,2nγ) (1981Go04).
2521.37 *6*			B	
2547.1 *3*			C E	
2550.67 *18*	(≤2)		B	Jπ: γ to 0^+.
2553.7 *5*	(5)		C	Jπ: from excitation in (α,nγ), D γ to 4^+.
2564.78 *15*	1[g]		B G	
2583.27[a] *23*	7^-		C F	Jπ: E2 γ to 5^-, E1+M2 γ to 6^+.
2591.57 *4*	$(1,2^+)$		BC E	Jπ: γ to 0^+ and 3^+.
2595.8 *3*	(4)		C	Jπ: from excitation in (α,nγ).
2598.58 *3*	0^+		B	Jπ: E2 γ to 2^+, γγ(θ) analysis.
2601.2 *3*	(5)		C	Jπ: from excitation in (α,nγ).
2608.7 *4*	$(3,4^+)$		C	Jπ: D̂ G to 4^+, G to 2^+.
2633.00 *3*	2^+		BCD	XREF: D(2670). Jπ: L=2 in (^{3}He,n).
2643.1 *4*	$(4,5,6^+)$		C	Jπ: D+Q γ to 5^+, γ to 4^+.
2645.84 *24*	(4)		C	Jπ: from excitation in (α,nγ).
2687.5 *5*			C	
2693.4 *4*			C	

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Adopted Levels, Gammas (continued)

^{128}Xe Levels (continued)

E(level)	Jπ	$T_{1/2}$‡	XREF	Comments
2698.0 *3*	(6⁻)		C	Jπ: D+Q γ's to 5⁻ and 5⁺, excitation in (α,nγ) and (α,2nγ) exclude J=4, 5.
2718.50 *6*	(1,2⁺)		B E	Jπ: γ's to 0⁺ and 2⁺.
2720.0 *3*	(6⁻)	<5 ns	C F	Jπ: M1+E2 γ to 5⁻, excitation in (α,2nγ) excludes J=4, 5.
2724.0 *10*	1[g]		G	
2726.22 *15*			B	
2730.6 *4*			C	
2734.2 *4*	5,6		C	Jπ: D γ to 5⁺, D+Q γ to 6⁺.
2735.5 *5*			C	
2736.7 *5*			C	
2747.0 *3*	4,5,6		C	Jπ: D+Q γ to 5⁻.
2752.0 *5*			C	
2756.4 *3*	(2⁺,3⁺,4⁺)		C	Jπ: (E2) γ to 4⁺, γ to 2⁺.
2776.0 *10*	1[g]		G	
2777.0 *3*			C	
2779.1 *5*			C	
2787.2[e] *3*	8⁻	83 ns *2*	C F	μ=−0.29 *7* μ: from time dependent perturbed angular distribution not include a Knight-shift correction (2001StZZ). Configuration=($\nu h_{11/2}$)($\nu g_{7/2}$) suggested by μ. $T_{1/2}$: from (HI,xnγ) (1984Lo07). Other: 63 ns *12* from (α,2nγ) (1981Go04). Jπ: E2(+M1) γ to 7⁻, J=8 from μ.
2792.0 *4*			C	
2794.4 *5*			C	
2807.00 *17*			B	
2819.9 *3*	(6)		C	Jπ: from excitation in (α,2n).
2820.0 *4*			C	
2822.8 *3*	(5⁻,6)		C	Jπ: γ's to 4 and 7⁻.
2823.3 *3*	(1,2⁺)		B	Jπ: γ's to 0⁺ and 2⁺.
2827.9 *5*			C	
2837.59 *4*	(2⁺)		B	Jπ: γ's to 0⁺ and 4⁺.
2837.8 *6*	1[g]		G	
2839.8 *6*			C	
2842.3 *3*	(5⁻)		C	Jπ: γ's to 4⁺ and 6⁺.
2846.4 *5*			C	
2851.5 *5*			C	
2859.51 *4*	(1,2⁺)		B	Jπ: γ's to 0⁺ and 2⁺.
2864.6 *4*			C	
2873.8 *5*			C	
2876.7 *5*			B	
2877.4 *5*			C	
2881.4 *5*	5,6,7		C	Jπ: D+Q γ to 6⁺.
2882.3 *5*			C	
2892.1 *5*			C	
2908.7 *4*	(4⁻,5,6⁺)		C	Jπ: γ's to 6⁻ and 4⁺.
2920.0 *5*			C	
2922.2 *5*			C	
2937.82 *11*	(1,2⁺)		B	Jπ: γ's to 0⁺ and 2⁺.
2941.9 *5*			C	
2942.1 *6*	(10⁺)	<4 ns	C F	Jπ: E2 γ to 8⁺.
2943.0 *4*			C	
2944.26 *23*	(4⁺)		C	Jπ: γ's to 2⁺ and 6⁺.
2954.9 *3*			C	
2974.2[d] *3*	(8)⁺		C F	Jπ: Q γ to 8⁺, γ to (6)⁺, band member.
2980.3 *5*	3,4,5		C	Jπ: D+Q γ to 4⁺.
2981.3 *5*			C	
2985.4 *3*	(7)		C	Jπ: from excitation in (α,2nγ).

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Adopted Levels, Gammas (continued)

^{128}Xe Levels (continued)

E(level)	Jπ	$T_{1/2}$‡	XREF	Comments
2997.9 *5*	5,6,7		C	Jπ: d(+Q) γ to 6^+.
3007.7 *5*			C	
3013.2 *5*			C	
3016.2 *5*			C	
3026.2 *3*	(4^+,5,6^+)		C	Jπ: γ's to 4^+ and 6^+.
3042.8 *4*	(3^+,4,5^+)		C	Jπ: γ's to 3^+ and 5^+.
3050.8[&] *4*	8^-		C F	Jπ: E2 γ to 6^-, γ to 7^-, band member.
3060.32 *15*	(1,2^+)		B	Jπ: γ's to 0^+ and 2^+.
3068.6 *4*			C	
3075.2 *5*			C	
3077.6 *5*			C	
3079.9 *3*			C	
3084.4 *4*			C	
3099.59 *6*	(1,2^+)		B	Jπ: γ's to 0^+ and 2^+.
3104.9 *3*	1[g]		B G	
3110.50 *7*	(1,2^+)		B	Jπ: γ's to 0^+ and 2^+.
3113.4 *3*			C	
3115.0[e] *3*	9^-		C F	Jπ: E2 γ to 7^-, D+Q γ to 8^-, band member.
3133.4 *5*			C	
3182.2 *4*	(6^-,7,8^-)		C	Jπ: γ's to 6^- and 8^-.
3186.7 *5*			C	
3195.7 *3*			C	
3196.8[†] *6*	10^+	<4 ns	C EF	Jπ: E2 γ to 8^+, band member. $T_{1/2}$: from (α,2nγ) (1981Go04).
3199.5 *5*			C	
3204.0 *10*	1[g]		G	
3204.1 *5*			C	
3208.0[a] *3*	(9^-)		C F	Jπ: Q γ to 7^-, D+Q γ to 8^-, band member.
3214.3 *7*	$^+$		C F	Jπ: M1+E2 γ to π=+ state.
3215.5 *4*	(6^+,7^-)		C	Jπ: γ's to 8^+ and 5^-.
3224.7 *4*			C	
3237.1 *5*			C	
3237.6 *5*			C	
3244.0 *5*			C	
3250.3 *4*			C	
3256.2 *5*			C	
3259.5 *5*			C	
3292.4 *6*			C	
3297.6 *6*			C	
3298.7 *3*	(5^-,6,7^-)		C	Jπ: γ's to 5^- and 7^-.
3312.0 *7*	1[g]		G	
3320.6 *3*			C	
3324.0 *6*			C	
3324.6 *5*			C	
3353.4 *6*			C	
3364.6[#] *6*	10^+	0.9 ps *3*	C EF	Jπ: E2 γ to 8^+, band member. $T_{1/2}$: from B(E2) in Coulomb excitation.
3364.9 *5*			C	
3367.0 *5*			C	
3376.4 *5*			C	
3402.9 *5*			C	
3406.61 *18*	1[g]		B G	
3412.8[f] *3*	(9^-)		F	Jπ: D γ to 9^-, D+Q γ to $(8)^+$.
3417.2 *5*			C	
3450.4 *5*			C	

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Adopted Levels, Gammas (continued)

^{128}Xe Levels (continued)

E(level)	J^π	XREF	Comments
3455.0 *5*		C	
3463.0 *7*	1[g]	G	
3524.1 *10*	1[g]	G	
3.53×10^3 *12*	3^-	D	J^π: L=3 in ^{126}Te(^{3}He,n).
3533.2 *5*		C	
3533.6 *6*	(9^+)	C	J^π: from excitation in (α,2nγ).
3542.0 *5*		C	
3566.1 *10*	1[g]	G	
3587.5 *5*		C	
3590.5 *6*		C	
3593.5[e] *3*	(10^-)	C F	J^π: D γ to 9^-, γ to 8^-, band member.
3596.1 *5*		C	
3596.9 *7*		C	
3624.2 *5*		C	
3636.8 *5*		C	
3685.4 *8*		C	
3694.2 *5*		C	
3707.7[&] *6*	(10^-)	C F	J^π: Q γ to 8^-, band member.
3751.0 *8*		C	
3760.8 *7*	1[g]	G	
3809.4[†] *7*	12^+	C F	J^π: E2 γ to 10^+, g.s. band member.
3863.3 *5*		C	
3865.1 *10*	1[g]	G	
3883	(11,12)	C	J^π: from excitation in (α,2nγ).
3883.9[e] *4*	(11^-)	C F	J^π: from excitation in (α,2nγ), band member.
3920.1 *10*	1[g]	G	
3991.3 *7*	(11^+)	C F	J^π: from excitation in (α,2nγ).
4006.0 *6*		C	
4014	(10)	C	J^π: from excitation in (α,2nγ).
4055.8 *7*		C	
4067.5[f] *4*	(11^-)	C F	J^π: from excitation in (α,2nγ), Q γ to (9^-), band member.
4078.2[a] *4*	(11^-)	F	J^π: Q γ to (9^-), D+Q γ to (10^-), band member.
4088.4[c] *8*	(12^+)	F	J^π: D+Q γ to (10^-) no γ to 10^+ yrast state, not strongly populated state so not an yrast state.
4151.2 *6*		C	
4251.0[#] *7*	(12^+)	C F	J^π: from excitation in (α,2nγ), Q γ to 10^+, band member.
4445.4[&] *8*	12^-	C F	J^π: Q γ to 10^-, band member.
4493.2[e] *4*	(12^-)	F	J^π: γ's to (10^-) and (11^-), band member.
4550.0[c] *9*	(13^+)	F	J^π: γ to (12^+), band member.
4618.1[†] *8*	14^+	C F	J^π: Q γ to 12^+, g.s. band member.
4751.7[e] *5*	(13^-)	F	J^π: Q γ to (11^-), band member.
4804.7[f] *6*	(13^-)	F	J^π: Q γ to (11^-), band member.
4808.8 *7*	(13^+)	F	J^π: Q γ to (11^+), D+Q γ to 12^+, band member.
4869.7[c] *9*	(14^+)	F	J^π: γ to (12^+), D+Q γ to (13^+), band member.
4910.7[a] *4*	(13^-)	F	J^π: Q γ to (11^-), γ to (12^-), band member.
5097.0[#] *8*	(14^+)	F	J^π: Q γ to (12^+), band member.
5233.0[&] *9*	12^-	F	J^π: Q γ to (12^-), band member.
5288.1[@] *9*	16^+	F	J^π: Q γ to 14^+, band member.
5335.7[c] *10*	(15^+)	F	J^π: γ to (14^+), band member.
5460.8[b] *6*	(14^-)	F	J^π: D+Q γ to (13^-), band member.
5492.2 *10*	(15^+)	F	J^π: D+Q γ to 14^+, band member.
5573.3[†] *10*	16^+	C F	J^π: Q γ to 14^+, g.s. band member.

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Adopted Levels, Gammas (continued)

^{128}Xe Levels (continued)

E(level)	J^π	XREF	Comments
5658.3[f] 7	(15^-)	F	J^π: Q γ to (13^-), band member.
5680.4[c] 10	(16^+)	F	J^π: γ's to (14^+) and (15^+), band ordering in (HI,xnγ).
5713.1[e] 7	(15^-)	F	XREF: F(5712.3). J^π: γ to (13^-), band member.
5714.9 9		F	
5817.5 8		F	
5967.7[#] 9	(16^+)	F	J^π: Q γ to (14^+), band member.
6076.7[c] 11	(17^+)	F	J^π: γ to (16^+), band ordering in (HI,xnγ).
6118.2[&] 10	16^-	F	J^π: γ to 14^-, DCO value in (HI,xnγ) and band ordering.
6186.9[@] 10	(18^+)	F	J^π: γ to (16^+), band ordering in (HI,xnγ).
6248.8[b] 7	(16^-)	F	J^π: Q γ to (14^-), band member.
6447.1[f] 8		F	
6606.2[†] 10	18^+	F	J^π: Q γ to 16^+, g.s. band member.
6646.2[e] 8	(17^-)	F	J^π: γ to (15^-), band member.
6649.6 8		F	
7016.3[c] 12	(19^+)	F	XREF: F(7014.6). J^π: γ to (17^+), band member.
7016.4[f] 10		F	
7228.7[b] 8	(18^-)	F	J^π: Q γ to (16^-), band member.
7256.8[@] 12	(20^+)	F	J^π: γ to (18^+), band member.
7711.1[†] 11	20^+	F	J^π: Q γ to 18^+, g.s. band member.
8010.9[c] 12	(21^+)	F	J^π: Q γ to (19^+), band member.
8893.1[†] 11	22^+	F	J^π: Q γ to 20^+, g.s. band member.
8948.0 11		F	

[†] Band(A): g.s. band.
[‡] From DSAM and and Differential Decay Curve Method in Coulomb excitation, unless otherwise noted.
[#] Band(B): band based on 10^+.
[@] Band(C): band based on (16^+).
[&] Band(D): $\nu 9/2[514]\otimes\nu 1/2[400]$, $K^\pi=5^-$, $\alpha=0$.
[a] Band(E): $\nu 9/2[514]\otimes\nu 1/2[400]$, $K^\pi=5^-$, $\alpha=1$.
[b] Band(F): band based on (14^-).
[c] Band(G): 4-quasiparticle band.
[d] Band(H): $K^\pi=2^+$, γ band.
[e] Band(I): $\nu 9/2[514]\otimes\nu 7/2[404]$, $K^\pi=8^-$.
[f] Band(J): bAND based on (9^-).
[g] From the intensity ratio of γ rays measured at two angles in ^{128}Xe(γ,γ').

Adopted Levels, Gammas (continued)

γ(^{128}Xe)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
442.911	2+	442.901 *10*	100	0.0	0+	E2		0.01268	α(K)=0.01068 *15*; α(L)=0.001599 *23*; α(M)=0.000328 *5*; α(N)=6.70×10^{-5} *10*; α(O)=7.96×10^{-6} *12* B(E2)(W.u.)=48 *11*
969.475	2+	526.557 *14*	100 *2*	442.911	2+	M1+E2	+4.4 *7*	0.00788 *12*	α(K)=0.00669 *10*; α(L)=0.000951 *14*; α(M)=0.000194 *3*; α(N)=3.98×10^{-5} *6*; α(O)=4.80×10^{-6} *7* B(E2)(W.u.)=57 *4*; B(M1)(W.u.)=0.0012 *4* δ: others: δ=+5.7 *+24−17* or δ=−0.25 *+5−7* in (^{3}He,3nγ); +6 *+4−2* in ^{128}Cs ε decay.
		969.458 *20*	26.8 *5*	0.0	0+	E2		1.73×10^{-3}	α(K)=0.001494 *21*; α(L)=0.000192 *3*; α(M)=3.89×10^{-5} *6*; α(N)=8.04×10^{-6} *12*; α(O)=9.96×10^{-7} *14* B(E2)(W.u.)=0.76 *5*
1033.149	4+	590.24 *2*	100	442.911	2+	E2		0.00573	α(K)=0.00488 *7*; α(L)=0.000681 *10*; α(M)=0.0001388 *20*; α(N)=2.85×10^{-5} *4*; α(O)=3.45×10^{-6} *5* B(E2)(W.u.)=62 *3*
1429.56	3+	396.5[&] *5*	18.4 *5*	1033.149	4+	M1+E2	+2.8 *3*	0.0178 *3*	α(K)=0.01500 *23*; α(L)=0.00227 *4*; α(M)=0.000465 *7*; α(N)=9.51×10^{-5} *14*; α(O)=1.128×10^{-5} *17* B(E2)(W.u.)=72 *10*; B(M1)(W.u.)=0.0021 *5* δ: other: >0.11 (1981Go04).
		460.1 *1*	100.0 *20*	969.475	2+	M1+E2	+7.8 *8*	0.01140	α(K)=0.00962 *14*; α(L)=0.001421 *20*; α(M)=0.000291 *4*; α(N)=5.95×10^{-5} *9*; α(O)=7.10×10^{-6} *10* B(E2)(W.u.)=2.1×10^2 *3*; B(M1)(W.u.)=0.0011 *3* δ: others: δ=+6.3 *+32−18* or δ=+0.45 *+8−5* (1981Go04).
		986.64 *3*	95.2 *17*	442.911	2+	M1+E2	+1.7 *1*	0.00181	α(K)=0.001560 *25*; α(L)=0.000198 *3*; α(M)=4.00×10^{-5} *7*; α(N)=8.27×10^{-6} *13*; α(O)=1.031×10^{-6} *16* B(E2)(W.u.)=3.3 *5*; B(M1)(W.u.)=0.0016 *3*
1582.976	0+	613.493 *13*	64 *4*	969.475	2+	E2		0.00518	α(K)=0.00441 *7*; α(L)=0.000611 *9*; α(M)=0.0001246 *18*; α(N)=2.56×10^{-5} *4*; α(O)=3.11×10^{-6} *5*
		1140.079 *23*	100 *5*	442.911	2+	E2		1.23×10^{-3}	α(K)=0.001057 *15*; α(L)=0.0001337 *19*; α(M)=2.70×10^{-5} *4*; α(N)=5.58×10^{-6} *8*; α(O)=6.95×10^{-7} *10*
1603.50	4+	570.4[&] *5*	77.2 *19*	1033.149	4+	M1+E2	+1.9 *+3−5*	0.00666 *24*	α(K)=0.00569 *22*; α(L)=0.000777 *19*; α(M)=0.000158 *4*; α(N)=3.26×10^{-5} *8*; α(O)=3.97×10^{-6} *12* B(E2)(W.u.)=28 *3*; B(M1)(W.u.)=0.0038 *10* δ: others: δ=−0.25 *9* or δ=+1.48 *+40−29* (1981Go04).
		634.0[&] *5*	100.0 *19*	969.475	2+	E2		0.00476	α(K)=0.00406 *6*; α(L)=0.000559 *8*; α(M)=0.0001138 *17*; α(N)=2.34×10^{-5} *4*; α(O)=2.84×10^{-6} *4* B(E2)(W.u.)=27.7 *18*
		1160.6[&] *5*	36.1 *10*	442.911	2+	Q			
1737.29	6+	704.2[&] *5*	100	1033.149	4+	E2		0.00365	α(K)=0.00313 *5*; α(L)=0.000422 *6*; α(M)=8.58×10^{-5} *13*;

$^{128}_{54}Xe_{74}$-7

Adopted Levels, Gammas (continued)

$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
									α(N)=1.765×10^{-5} *25*; α(O)=2.16×10^{-6} *3* B(E2)(W.u.)=61 *3*
1877.33	0$^+$	908.2[&] *5*	19 *3*	969.475	2$^+$				
		1434.40 *8*	100 *11*	442.911	2$^+$	E2		8.26×10^{-4}	α(K)=0.000665 *10*; α(L)=8.24×10^{-5} *12*; α(M)=1.663×10^{-5} *24*; α(N)=3.44×10^{-6} *5*; α(O)=4.30×10^{-7} *6* B(E2)(W.u.)=11 *3* Mult.: Q from $\gamma(\theta)$, M1+E2 from RUL.
1996.74	5$^+$	259.5[&] *5*	2.0 *2*	1737.29	6$^+$			0.065 *4*	δ: +1.4 *9* is given in 1996Ne04, but no M indicated.
		393.2[&] *5*	13.4 *8*	1603.50	4$^+$	D+Q	+3.9 *+13−4*	0.0182 *2*	
		567.2[&] *5*	100 *2*	1429.56	3$^+$	E2		0.00637	α(K)=0.00541 *8*; α(L)=0.000762 *11*; α(M)=0.0001555 *23*; α(N)=3.19×10^{-5} *5*; α(O)=3.86×10^{-6} *6*
		963.6[&] *5*	51.7 *13*	1033.149	4$^+$	D+Q	+1.7 *+1−2*		
1999.645	(2)$^+$	416.8[&] *5*		1582.976	0$^+$				
		570.0[&] *5*		1429.56	3$^+$				
		966.48 *4*	100 *8*	1033.149	4$^+$	D,Q			
		1030.170 *21*	5.1 *3*	969.475	2$^+$	M1+E2	+3.4 *2*	1.56×10^{-3} *2*	α(K)=0.001344 *20*; α(L)=0.0001711 *25*; α(M)=3.46×10^{-5} *5*; α(N)=7.15×10^{-6} *11* α(O)=8.89×10^{-7} *13*
		1556.71 *7*	38.8 *25*	442.911	2$^+$				
		1999.7 *4*	2.3 *8*	0.0	0$^+$				
2023.06	(4$^+$)	419.6[&] *5*	14.6 *15*	1603.50	4$^+$	D+Q	−1.1 *+3−4*	0.0160 *4*	
		593.5[&] *5*	58.6 *18*	1429.56	3$^+$	D+Q	+3.9 *+6−8*		
		990.0[&] *5*	69.8 *23*	1033.149	4$^+$	D+Q	−1.1 *+1−2*		
		1053.5[&] *5*	100 *3*	969.475	2$^+$	D,Q			
2127.06	1$^+$,2$^+$,3$^+$	1157.54 *7*	6.3 *9*	969.475	2$^+$				
		1684.14 *3*	100 *2*	442.911	2$^+$	M1(+E2)	+0.08 *6*	8.22×10^{-4}	α(K)=0.000584 *9*; α(L)=7.12×10^{-5} *10*; α(M)=1.435×10^{-5} *21*; α(N)=2.98×10^{-6} *5*; α(O)=3.75×10^{-7} *6* B(E2)(W.u.)=(0.05 *+8−5*); B(M1)(W.u.)=(0.032 *14*) δ: from ^{128}Cs ε decay (3.66 min).
		2127.1 *10*	12.2 *14*	0.0	0$^+$				E_γ: from Coulomb excitation.
2138.68	(3$^-$)	1105.4[&] *5*		1033.149	4$^+$				
		1695.8[&] *5*		442.911	2$^+$	D+Q	−0.05 *5*		B(E1)(W.u.)=0.00045 *19*; B(M2)(W.u.)=2 *+4−2*
		2138.7 *10*		0.0	0$^+$				E_γ: from Coulomb excitation.
2165.9	(4)	1132.7[&] *5*	100	1033.149	4$^+$				

$^{128}_{54}Xe_{74}$-8

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2191.0	1	2191		0.0	0^+				E_γ: from ^{128}Xe(γ,γ′).
2229.22	5^-	491.9[&b] *5*	5.0 *5*	1737.29	6^+				δ: −0.02 +*6*−*7* is given in 1996Ne04 but M is not indicated.
		625.8[&] *5*	15.2 *5*	1603.50	4^+	E1+M2	−0.05 +*3*−*6*	0.00182 *17*	α(K)=0.00158 *14*; α(L)=0.000194 *20*; α(M)=3.9×10^{-5} *4*; α(N)=8.1×10^{-6} *9*; α(O)=1.01×10^{-6} *11* B(E1)(W.u.)>2.3×10^{-8}
		1196.1[&] *5*	100.0 *22*	1033.149	4^+	E1		5.21×10^{-4}	α(K)=0.000428 *6*; α(L)=5.14×10^{-5} *8*; α(M)=1.034×10^{-5} *15*; α(N)=2.14×10^{-6} *3*; α(O)=2.69×10^{-7} *4* B(E1)(W.u.)>2.2×10^{-8}
2252.89		1283.41 *6*	100 *14*	969.475	2^+	D,Q			
		1810.0 *2*	72 *6*	442.911	2^+				
2272.85	(2^+)	1239.75 *6*	10.3 *14*	1033.149	4^+				
		1303.36 *3*	100 *3*	969.475	2^+	(M1)		1.20×10^{-3}	α(K)=0.001021 *15*; α(L)=0.0001252 *18*; α(M)=2.53×10^{-5} *4*; α(N)=5.24×10^{-6} *8*; α(O)=6.60×10^{-7} *10*
		1829.9 *1*	5.5 *7*	442.911	2^+				
2276.0	1	2276		0.0	0^+				E_γ: from ^{128}Xe(γ,γ′).
2280.93	$(6)^+$	543.6[&] *5*	100.0 *24*	1737.29	6^+	M1+E2	+0.18 +*7*−*9*	0.00901 *14*	α(K)=0.00778 *12*; α(L)=0.000983 *15*; α(M)=0.000199 *3*; α(N)=4.12×10^{-5} *6*; α(O)=5.17×10^{-6} *8* B(E2)(W.u.)>0.00043; B(M1)(W.u.)>2.3×10^{-5}
		677.2[&] *5*	37.4 *15*	1603.50	4^+	D,Q			
2305.7	(3)	876.2[&] *5*	100 *4*	1429.56	3^+	D,Q			
		1272.5[&] *5*		1033.149	4^+				
		1336.1[&] *5*		969.475	2^+				
2336.05	(4)	313.0[&] *5*	19.5 *24*	2023.06	(4^+)	D(+Q)			
		732.7[&] *5*	60	1603.50	4^+				
		906.5[&] *5*	100 *3*	1429.56	3^+	D+Q			
		1302.8[&] *5*	45	1033.149	4^+				
2360.0	1	2360		0.0	0^+				E_γ: from ^{128}Xe(γ,γ′).
2361.6	(3)	222.9[&] *5*		2138.68	(3^-)				
		1328.3[&] *5*	19 *5*	1033.149	4^+				
		1392.1[&] *5*	100 *4*	969.475	2^+				
2361.80	$(1,2^+)$	1392.31 *15*	29 *3*	969.475	2^+				

$^{128}_{54}Xe_{74}$-9

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2361.80	(1,2$^+$)	1918.87 *5*	80 *4*	442.911	2$^+$				
		2361.8 *1*	100 *9*	0.0	0$^+$				
2388.81	(3,4$^+$)	222.8[&] *5*		2165.9	(4)				
		785.4[&] *5*	100 *5*	1603.50	4$^+$	D,Q			
		959.4[&] *5*		1429.56	3$^+$				
		1355.6[&] *5*	81 *5*	1033.149	4$^+$	D			
		1419.2[&] *5*		969.475	2$^+$				
2416.0	1	2416		0.0	0$^+$				E_γ: from ^{128}Xe(γ,γ′).
2421.08		1978.15 *4*	100	442.911	2$^+$				
2430.69	(1,2$^+$)	1461.19 *4*	100 *6*	969.475	2$^+$				E_γ: not reported in (α,nγ),(α,2nγ),(^{3}He,3nγ).
		1987.80 *7*	92 *5*	442.911	2$^+$	D			
		2430.70 *8*	20.4 *19*	0.0	0$^+$				E_γ: not reported in (α,nγ),(α,2nγ),(^{3}He,3nγ).
2438.8		415.7[&] *5*	33 *3*	2023.06	(4$^+$)				δ: −0.9 *+3−7* is given in 1996Ne04 but M is not indicated.
		835.2[&] *5*	34 *3*	1603.50	4$^+$				δ: −0.05 *+16−13* is given in 1996Ne04 but M is not indicated.
		1009.2[&] *5*	100 *5*	1429.56	3$^+$	D,Q			
2443.92		1474.42 *18*	100 *22*	969.475	2$^+$				
		2001.1 *4*	11 *6*	442.911	2$^+$				
2444.0		1014.4[&] *5*		1429.56	3$^+$				
2462.73	(4)	324.0[&] *5*	100 *3*	2138.68	(3$^-$)	D+Q			
		1033.2[&] *5*	17 *2*	1429.56	3$^+$				
		1429.7[&] *5*	89 *4*	1033.149	4$^+$	D,Q			
2469.65	3,4,5	1436.5[&] *5*	100	1033.149	4$^+$	D			
2469.9		732.6[&] *5*	100	1737.29	6$^+$				
2482.51	(2)	1513.01 *4*	100 *4*	969.475	2$^+$				
		2039.56 *5*	61 *5*	442.911	2$^+$				
		2482.7 *1*	5.6 *5*	0.0	0$^+$				
2500.84	6$^-$	271.7[&] *5*	100 *3*	2229.22	5$^-$	M1+E2	−3.1 *+3−8*	0.0572 *9*	α(K)=0.0470 *8*; α(L)=0.00817 *16*; α(M)=0.00169 *4*; α(N)=0.000343 *7*; α(O)=3.93×10^{-5} *7* B(E2)(W.u.)>1.7; B(M1)(W.u.)>1.6×10^{-5}
		504.2[&] *5*	46 *2*	1996.74	5$^+$	E1+M2	+0.02 *+3−6*	0.00290 *8*	α(K)=0.00251 *7*; α(L)=0.000311 *10*; α(M)=6.26×10^{-5} *19*; α(N)=1.29×10^{-5} *4*; α(O)=1.61×10^{-6} *5* B(E1)(W.u.)>1.8×10^{-7}
		763.3[@] *4*	20 *2*	1737.29	6$^+$				
2509.2	(3)	1476.2[&] *5*		1033.149	4$^+$				
		2066.2[&] *5*	100 *4*	442.911	2$^+$				
2510.71	(2)	1081.11 *5*	91 *6*	1429.56	3$^+$				

$^{128}_{54}Xe_{74}$-10

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2510.71	(2)	1477.66 *9*	50 *8*	1033.149	4^+				
		1541.21 *6*	100 *8*	969.475	2^+	D,Q			
		2067.7 *1*	20 *3*	442.911	2^+				
		2510.78 *9*	18.2 *15*	0.0	0^+				
2512.9	8^+	775.6[&] *5*	100	1737.29	6^+	E2		0.00289	α(K)=0.00248 *4*; α(L)=0.000329 *5*; α(M)=6.69×10^{-5} *10*; α(N)=1.377×10^{-5} *20*; α(O)=1.691×10^{-6} *24* B(E2)(W.u.)=95 *11*
2521.37		1488.8 *6*	11 *4*	1033.149	4^+				
		1552.3 *1*	13 *4*	969.475	2^+				
		2078.23 *7*	100 *9*	442.911	2^+				
2547.1		266.2[&] *5*		2280.93	$(6)^+$				
		809.8[&] *5*	100 *4*	1737.29	6^+	D,Q			
		943.6[&] *5*		1603.50	4^+				
2550.67	(≤2)	2107.8 *2*	100 *25*	442.911	2^+				
		2550.4 *4*	38 *13*	0.0	0^+				
2553.7	(5)	1520.5[&] *5*	100	1033.149	4^+	D			
2564.78	1	2121.8 *5*	50 *25*	442.911	2^+				
		2564.76 *16*	100 *13*	0.0	0^+				
2583.27	7^-	302.4[&] *5*	<3	2280.93	$(6)^+$				
		354.0[&] *5*	20 *2*	2229.22	5^-	E2		0.0248	α(K)=0.0207 *3*; α(L)=0.00332 *5*; α(M)=0.000684 *11*; α(N)=0.0001392 *21*; α(O)=1.624×10^{-5} *24*
		846.0[&] *5*	100 *5*	1737.29	6^+	E1+M2	−0.05 *3*	0.00096 *4*	α(K)=0.00084 *3*; α(L)=0.000102 *4*; α(M)=2.05×10^{-5} *8*; α(N)=4.24×10^{-6} *15*; α(O)=5.31×10^{-7} *19*
2591.57	$(1,2^+)$	1162.02 *6*	20 *3*	1429.56	3^+				
		2148.64 *5*	100 *7*	442.911	2^+				
		2591.54 *8*	11.9 *11*	0.0	0^+				
2595.8	(4)	366.5[&] *5*		2229.22	5^-				
		457.1[&] *5*	24 *3*	2138.68	(3^-)	D+Q			
		572.8[&] *5*	100 *4*	2023.06	(4^+)	D,Q			
		992.2[&] *5*	34 *3*	1603.50	4^+	D,Q			
2598.58	0^+	1629.07 *4*	84 *2*	969.475	2^+	(E2)		7.29×10^{-4}	α(K)=0.000520 *8*; α(L)=6.39×10^{-5} *9*; α(M)=1.289×10^{-5} *18*; α(N)=2.67×10^{-6} *4*; α(O)=3.34×10^{-7} *5*
		2155.68 *5*	100 *7*	442.911	2^+	E2		7.28×10^{-4}	α(K)=0.000310 *5*; α(L)=3.75×10^{-5} *6*; α(M)=7.55×10^{-6} *11*; α(N)=1.564×10^{-6} *22*; α(O)=1.97×10^{-7} *3*
2601.2	(5)	319.5[&] *5*		2280.93	$(6)^+$				
		864.2[&] *5*	27 *3*	1737.29	6^+	D+Q			
		1568.2[&] *5*	100 *4*	1033.149	4^+	D,Q			

$^{128}_{54}Xe_{74}$-11

Adopted Levels, Gammas (continued)

$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	δ[#]	α[a]	Comments
2608.7	(3,4$^+$)	1005.2[&] *5*	100 *14*	1603.50	4$^+$	D			
		1639.2[&] *5*		969.475	2$^+$				
2633.00	2$^+$	1203.5 *1*	13.1 *19*	1429.56	3$^+$				
		1599.8 *2*	8.3 *15*	1033.149	4$^+$				
		1663.49 *5*	44.2 *24*	969.475	2$^+$				
		2190.08 *5*	100 *7*	442.911	2$^+$	D+Q			
		2632.94 *8*	11.2 *10*	0.0	0$^+$				
2643.1	(4,5,6$^+$)	646.5[&] *5*		1996.74	5$^+$	D+Q			
		1039.5[&] *5*		1603.50	4$^+$				
2645.84	(4)	309.8[&] *5*	64 *6*	2336.05	(4)				
		908.5[&] *5*	18 *10*	1737.29	6$^+$				
		1042.5[&] *5*	47 *5*	1603.50	4$^+$				
		1612.6[&] *5*	100 *4*	1033.149	4$^+$	D,Q			
2687.5		1654.3[&] *5*		1033.149	4$^+$				
2693.4		1089.9[&] *5*		1603.50	4$^+$				
		1660.2[&] *5*		1033.149	4$^+$				
2698.0	(6$^-$)	228.3[&] *5*	12	2469.65	3,4,5				
		362.0[&] *5*	47	2336.05	(4)				
		468.8[&] *5*	98 *7*	2229.22	5$^-$	D+Q	−3.9 *+8−13*	0.0109 *1*	
		701.2[&] *5*	100 *9*	1996.74	5$^+$	D+Q			
2718.50	(1,2$^+$)	1749.0 *4*	22 *7*	969.475	2$^+$				
		2275.57 *6*	100 *7*	442.911	2$^+$				
		2718.5 *2*	5.5 *18*	0.0	0$^+$				
2720.0	(6$^-$)	250.3[&] *5*	<6	2469.65	3,4,5				
		490.8[&] *5*	100 *4*	2229.22	5$^-$	M1+E2	−1.2 *+7−4*	0.0104 *9*	α(K)=0.0088 *9*; α(L)=0.00121 *5*; α(M)=0.000246 *9*; α(N)=5.07×10^{-5} *20*; α(O)=6.2×10^{-6} *4* B(E2)(W.u.)>0.031; B(M1)(W.u.)>4.6×10^{-6}
2724.0	1	2724		0.0	0$^+$				E_γ: from ^{128}Xe(γ,γ').
2726.22		1756 *1*	25 *17*	969.475	2$^+$				
		2283.30 *15*	100 *17*	442.911	2$^+$				
2730.6		449.7[&] *5*	<8	2280.93	(6)$^+$				
		733.9[&] *5*	100 *6*	1996.74	5$^+$	D,Q			
2734.2	5,6	737.4[&] *5*	100 *12*	1996.74	5$^+$	D			
		996.9[&] *5*	96 *15*	1737.29	6$^+$	D+Q			
2735.5		1132.0[&] *5*		1603.50	4$^+$				

$^{128}_{54}Xe_{74}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
2736.7		1133.2[&] *5*	100	1603.50	4^+			
2747.0	4,5,6	277.5[&] *5*	100	2469.65	3,4,5			
		385.3[&] *5*	100	2361.6	(3)			
		517.8[&] *5*	100 *6*	2229.22	5^-	D+Q		
		723.9[&] *5*		2023.06	(4^+)			
2752.0		1014.7[&] *5*	100	1737.29	6^+			
2756.4	$(2^+,3^+,4^+)$	617.7[&] *5*		2138.68	(3^-)			
		1723.2[&] *5*	100 *4*	1033.149	4^+	D,Q		
		2313.4[&] *5*		442.911	2^+			
2776.0	1	2776		0.0	0^+			E_γ: from $^{128}Xe(\gamma,\gamma')$.
2777.0		1173.5[&] *5*	40 *20*	1603.50	4^+			
		1743.8[&] *5*	100 *9*	1033.149	4^+	D+Q		
2779.1		1809.6[&] *5*	100	969.475	2^+	Q		
2787.2	8^-	204.2[&] *5*	80 *17*	2583.27	7^-	(M1)	0.1130	α(K)=0.0972 *15*; α(L)=0.01264 *20*; α(M)=0.00257 *4*; α(N)=0.000531 *9*; α(O)=6.64×10^{-5} *11* B(M1)(W.u.)=1.3×10^{-5} *4*
		274.4[@] *4*	0.38 *19*	2512.9	8^+			
		286.3[&] *5*	100 *13*	2500.84	6^-	E2(+M1)	0.0473 *15*	α(K)=0.0398 *6*; α(L)=0.0060 *10*; α(M)=0.00124 *21*; α(N)=0.00025 *4*; α(O)=3.0×10^{-5} *4* B(E2)(W.u.)=0.047 *9*
2792.0		329.3[&] *5*		2462.73	(4)			
		1362.4[&] *5*		1429.56	3^+			
2794.4		1761.2[&] *5*	100	1033.149	4^+	D,Q		
2807.00		1837.5 *2*	33 *8*	969.475	2^+			
		2364.1 *3*	100 *25*	442.911	2^+			
2819.9	(6)	224.1[&] *5*		2595.8	(4)			
		350.1[&] *5*		2469.65	3,4,5			
		357.2[&] *5*		2462.73	(4)			
		539.1[&] *5*	53 *6*	2280.93	$(6)^+$	D,Q		
		1082.6[&] *5*	100 *8*	1737.29	6^+	D+Q		
2820.0		483.9[&] *5*		2336.05	(4)			
		681.3[&] *5*		2138.68	(3^-)			
2822.8	$(5^-,6)$	176.9[&] *5*		2645.84	(4)			
		239.5[&] *5*		2583.27	7^-			

$^{128}_{54}Xe_{74}$-13

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
2822.8	(5⁻,6)	353.1[&] *5*		2469.65	3,4,5			
2823.3	(1,2⁺)	2380.8 *5*	100 *33*	442.911	2⁺			
		2823.0 *4*	37 *13*	0.0	0⁺			
2827.9		1794.7[&] *5*	100	1033.149	4⁺	D,Q		
2837.59	(2⁺)	1409 *1*	16 *4*	1429.56	3⁺			
		1804.04 *17*	26 *4*	1033.149	4⁺			
		1867.96 *14*	30 *4*	969.475	2⁺			
		2394.51 *5*	100 *5*	442.911	2⁺			
		2838.07 *8*	24.3 *19*	0.0	0⁺			
2837.8	1	1868	26 *3*	969.475	2⁺			E_γ: from ^{128}Xe(γ,γ′).
		2395	10.2 *12*	442.911	2⁺			E_γ: from ^{128}Xe(γ,γ′).
		2838	100	0.0	0⁺			E_γ: from ^{128}Xe(γ,γ′).
2839.8		478.2[&] *5*	100	2361.6	(3)			
2842.3	(5⁻)	561.3[&] *5*		2280.93	(6)⁺			
		1104.9[&] *5*		1737.29	6⁺			
		1809.3[&] *5*		1033.149	4⁺			δ: −0.08 *6* is given in 1996Ne04 but M is not indicated.
2846.4		1876.9[&] *5*		969.475	2⁺			
2851.5		1818.3[&] *5*		1033.149	4⁺			
2859.51	(1,2⁺)	2416.58 *5*	100 *6*	442.911	2⁺			
		2859.47 *8*	16.6 *12*	0.0	0⁺			
2864.6		583.8[&] *5*		2280.93	(6)⁺			
		1261.0[&] *5*		1603.50	4⁺			
2873.8		1840.6[&] *5*		1033.149	4⁺			
2876.7		2876.7 *5*	100	0.0	0⁺			
2877.4		1907.9[&] *5*		969.475	2⁺			
2881.4	5,6,7	1144.1[&] *5*	100	1737.29	6⁺	D+Q		
2882.3		1849.1[&] *5*		1033.149	4⁺			
2892.1		1462.5[&] *5*		1429.56	3⁺			
2908.7	(4⁻,5,6⁺)	407.9[&] *5*		2500.84	6⁻			
		1875.4[&] *5*		1033.149	4⁺			
2920.0		690.8[&] *5*		2229.22	5⁻			
2922.2		1184.9[&] *5*	100	1737.29	6⁺	D,Q		
2937.82	(1,2⁺)	2494 *1*	8 *3*	442.911	2⁺			
		2937.79 *11*	100 *9*	0.0	0⁺			
2941.9		661.0[&] *5*		2280.93	(6)⁺			
2942.1	(10⁺)	429.2[&] *5*	100	2512.9	8⁺	E2	0.01389	α(K)=0.01168 *17*; α(L)=0.00177 *3*; α(M)=0.000362 *6*; α(N)=7.40×10⁻⁵ *11*;

$^{128}_{54}Xe_{74}$-14

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
								α(O)=8.77×10^{-6} *13* B(E2)(W.u.)>0.25
2943.0		804.3[&] *5*		2138.68	(3$^-$)			
		1909.9[&] *5*		1033.149	4$^+$			
2944.26	(4$^+$)	342.9[&] *5*	68 *15*	2601.2	(5)			
		481.5[&] *5*	100 *10*	2462.73	(4)			
		947.6[&] *5*	53 *26*	1996.74	5$^+$			
		1207.0[&] *5*	88 *9*	1737.29	6$^+$			
		1974.7[&] *5*	25 *10*	969.475	2$^+$			
2954.9		309.1[&] *5*		2645.84	(4)			
		454.0[&] *5*		2500.84	6$^-$			
		485.2[&] *5*		2469.65	3,4,5			
2974.2	(8)$^+$	461.3[&] *5*	100 *6*	2512.9	8$^+$	Q	0.0113	
		693.4[&] *5*		2280.93	(6)$^+$			
2980.3	3,4,5	1947.1[&] *5*	100	1033.149	4$^+$	D+Q		
2981.3		1551.7[&] *5*		1429.56	3$^+$			
2985.4	(7)	484.5[&] *5*		2500.84	6$^-$			
		515.7[&] *5*		2469.65	3,4,5			
		1248.1[&] *5*		1737.29	6$^+$			
2997.9	5,6,7	1260.6[&] *5*	100	1737.29	6$^+$	D(+Q)		
3007.7		2564.8[&] *5*		442.911	2$^+$			
3013.2		2570.3[&] *5*		442.911	2$^+$			
3016.2		1983.0[&] *5*	100	1033.149	4$^+$	D,Q		
3026.2	(4$^+$,5,6$^+$)	424.8[&] *5*		2601.2	(5)			
		1289.1[&] *5*		1737.29	6$^+$			
		1993.0[&] *5*		1033.149	4$^+$			
3042.8	(3$^+$,4,5$^+$)	1045.9[&] *5*		1996.74	5$^+$			
		1613.4[&] *5*		1429.56	3$^+$			
3050.8	8$^-$	467.6[&] *5*	28 *3*	2583.27	7$^-$			
		549.9[&] *5*	100 *6*	2500.84	6$^-$	E2	0.00692	α(K)=0.00588 *9*; α(L)=0.000833 *12*; α(M)=0.0001701 *25*; α(N)=3.49×10^{-5} *5*; α(O)=4.21×10^{-6} *6*
3060.32	(1,2$^+$)	2090.85 *26*	100 *20*	969.475	2$^+$			
		2617.1 *2*	50 *10*	442.911	2$^+$			
		3061.9 *5*	4 *2*	0.0	0$^+$			

$^{128}_{54}Xe_{74}$-15

Adopted Levels, Gammas (continued)

$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3068.6		291.7[&] *5*		2777.0				
		839.4[&] *5*		2229.22	5^-			
3075.2		794.3[&] *5*	100	2280.93	$(6)^+$			
3077.6		938.9[&] *5*		2138.68	(3^-)			
3079.9		641.1[&] *5*		2438.8				
		798.9[&] *5*		2280.93	$(6)^+$			
		1342.7[&] *5*		1737.29	6^+			
3084.4		364.4[&] *5*		2720.0	(6^-)			
		386.5[&] *5*		2698.0	(6^-)			
		583.6[&] *5*		2500.84	6^-			
3099.59	$(1,2^+)$	2129.5 *3*	100 *25*	969.475	2^+			
		2656.68 *6*	75 *13*	442.911	2^+			
		3099.2 *6*	7.5 *25*	0.0	0^+			
3104.9	1	2662 *1*	40 *20*	442.911	2^+			I_γ: 56 *6* from ^{128}Xe(γ,γ').
		3104.9 *3*	100 *8*	0.0	0^+			
3110.50	$(1,2^+)$	2141.06 *10*	100 *8*	969.475	2^+			
		2667.52 *10*	46 *4*	442.911	2^+			
		3110 *1*	0.5 *3*	0.0	0^+			
3113.4		650.8[&] *5*		2462.73	(4)			
		974.7[&] *5*		2138.68	(3^-)			
		1376.1[&] *5*		1737.29	6^+			
3115.0	9^-	328.1[&] *5*	32 *8*	2787.2	8^-	D+Q		
		532.0[&b] *5*	100 *8*	2583.27	7^-	E2	0.00757	α(K)=0.00642 *10*; α(L)=0.000917 *13*; α(M)=0.000187 *3*; α(N)=3.84×10^{-5} *6*; α(O)=4.62×10^{-6} *7*
3133.4		550.1[&] *5*	100	2583.27	7^-			
3182.2	$(6^-,7,8^-)$	395.0[&] *5*		2787.2	8^-			
		681.4[&] *5*		2500.84	6^-			
3186.7		1449.4[&] *5*	100	1737.29	6^+			
3195.7		914.9[&] *5*		2280.93	$(6)^+$			
		1592.2[&] *5*		1603.50	4^+			
		2162.4[&] *5*		1033.149	4^+			
3196.8	10^+	683.9[&] *5*	100	2512.9	8^+	E2	0.00393	α(K)=0.00336 *5*; α(L)=0.000456 *7*; α(M)=9.27×10^{-5} *14*; α(N)=1.91×10^{-5} *3*; α(O)=2.33×10^{-6} *4* B(E2)(W.u.)>0.024
3199.5		918.6[&] *5*		2280.93	$(6)^+$			

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3204.0	1	3204		0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).
3204.1		974.9[&] *5*	100	2229.22	5^-			
3208.0	(9^-)	420.8[@] *5*	16 *2*	2787.2	8^-	D+Q		
		624.5[&] *3*	100 *6*	2583.27	7^-	Q		
3214.3	$^+$	272.2[&] *3*	100	2942.1	(10^+)	M1+E2	0.055 *3*	α(K)=0.0460 *11*; α(L)=0.0071 *13*; α(M)=0.0015 *3*; α(N)=0.00030 *6*; α(O)=3.5×10^{-5} *5*
3215.5	$(6^+,7^-)$	241.2[&] *5*		2974.2	$(8)^+$			
		746.0[&] *5*		2469.65	3,4,5			
3224.7		952.0[&] *5*		2272.85	(2^+)			
		2255.1[&] *5*		969.475	2^+			
3237.1		1240.4[&] *5*		1996.74	5^+			
3237.6		767.9[&] *5*		2469.65	3,4,5			
3244.0		1014.8[&] *5*		2229.22	5^-			
3250.3		276.2[&] *5*		2974.2	$(8)^+$			
		1513.0[&] *5*		1737.29	6^+			
3256.2		755.4[&] *5*		2500.84	6^-			
3259.5		1522.2[&] *5*		1737.29	6^+			
3292.4		561.8[&] *5*	100	2730.6				
3297.6		784.7[&] *5*	100	2512.9	8^+			
3298.7	$(5^-,6,7^-)$	715.5[&] *5*		2583.27	7^-			
		797.8[&] *5*		2500.84	6^-			
		1069.6[&] *5*		2229.22	5^-			
3312.0	1	2869	100 *19*	442.911	2^+			E_γ: from ^{128}Xe(γ,γ′).
		3312	24	0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).
3320.6		376.2[&] *5*		2944.26	(4^+)			
		737.4[&] *5*		2583.27	7^-			
		1039.7[&] *5*		2280.93	$(6)^+$			
3324.0		504.0[&] *5*		2820.0				
3324.6		854.9[&] *5*		2469.65	3,4,5			
3353.4		840.5[&] *5*		2512.9	8^+			
3364.6	10^+	851.7[&] *5*	100	2512.9	8^+	E2	0.00232	α(K)=0.00200 *3*; α(L)=0.000261 *4*; α(M)=5.30×10^{-5} *8*; α(N)=1.092×10^{-5} *16*; α(O)=1.347×10^{-6} *19* B(E2)(W.u.)=37 *13*

$^{128}_{54}Xe_{74}$-17

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3364.9		1084.0[&] *5*	100	2280.93	$(6)^+$			
3367.0		1228.3[&] *5*		2138.68	(3^-)			
3376.4		875.6[&] *5*		2500.84	6^-			
3402.9		2369.7[&] *5*		1033.149	4^+			
3406.61	1	2436	77 *12*	969.475	2^+			E_γ: from ^{128}Xe(γ,γ′).
		2963.7 *5*	40 *7*	442.911	2^+			I_γ: Other: 88 *38*.
		3406.6 *2*	100 *25*	0.0	0^+			
3412.8	(9^-)	204.8[@] *4*	83 *11*	3208.0	(9^-)			
		297.7[@] *4*	89 *6*	3115.0	9^-	D		
		438.8[@] *4*	100 *11*	2974.2	$(8)^+$	D+Q		
3417.2		833.9[&] *5*		2583.27	7^-			
3450.4		2417.2[&] *5*		1033.149	4^+			
3455.0		985.3[&] *5*		2469.65	3,4,5			
3463.0	1	3020	63 *15*	442.911	2^+			E_γ: from ^{128}Xe(γ,γ′).
		3463	100	0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).
3524.1	1	3524		0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).
3533.2		2500.0[&] *5*		1033.149	4^+			
3533.6	(9^+)	803.0[&] *5*	100	2730.6				
3542.0		958.7[&] *5*		2583.27	7^-			
3566.1	1	3566		0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).
3587.5		2618.0[&] *5*		969.475	2^+			
3590.5		1077.6[&] *5*		2512.9	8^+			
3593.5	(10^-)	478.6[&] *2*	100 *7*	3115.0	9^-	D	0.0102	
		806.1[@] *4*	44 *7*	2787.2	8^-	Q		
3596.1		1095.3[&] *5*		2500.84	6^-			
3596.9		860.2[&] *5*		2736.7				
3624.2		2591.0[&] *5*		1033.149	4^+			
3636.8		2603.6[&] *5*		1033.149	4^+			
3685.4		743.3[&] *5*		2942.1	(10^+)			
3694.2		1956.9[&] *5*		1737.29	6^+			
3707.7	(10^-)	656.9[&] *5*	100	3050.8	8^-	Q		
3751.0		386.4[&] *5*		3364.6	10^+			
3760.8	1	2791	100 *26*	969.475	2^+			E_γ: from ^{128}Xe(γ,γ′).
		3761	42	0.0	0^+			E_γ: from ^{128}Xe(γ,γ′).

Adopted Levels, Gammas (continued)

$\gamma(^{128}Xe)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]	α[a]	Comments
3809.4	12^+	612.7[&] *3*	100	3196.8	10^+	E2	0.00520	α(K)=0.00443 *7*; α(L)=0.000614 *9*; α(M)=0.0001250 *18*; α(N)=2.57×10^{-5} *4*; α(O)=3.12×10^{-6} *5*
3863.3		1582.4[&] *5*		2280.93	$(6)^+$			
3865.1	1	3865		0.0	0^+			E_γ: from ^{128}Xe(γ,γ').
3883.9	(11^-)	290.5[@] *5*	7.7 *19*	3593.5	(10^-)			
		675.8[@] *4*	37 *4*	3208.0	(9^-)	Q		
		768.8[@]	100 *4*	3115.0	9^-	Q		
3920.1	1	3920		0.0	0^+			E_γ: from ^{128}Xe(γ,γ').
3991.3	(11^+)	794.3[@] *5*	100	3196.8	10^+	D+Q		
4006.0		1493.1[&] *5*		2512.9	8^+			
4055.8		690.9[&] *5*		3364.9				
4067.5	(11^-)	474.1[@] *4*	4.1 *27*	3593.5	(10^-)	D+Q		
		654.6[@] *4*	100 *7*	3412.8	(9^-)	Q		
		859.4[@] *4*	9.5 *27*	3208.0	(9^-)	Q		
4078.2	(11^-)	484.8[@] *4*	57.4 *21*	3593.5	(10^-)	D+Q		
		870.1[@] *4*	100 *11*	3208.0	(9^-)	Q		
4088.4	(12^+)	279.0[@] *5*	100	3809.4	12^+	D+Q		
4151.2		1638.3[&] *5*		2512.9	8^+			
4251.0	(12^+)	886.4[@] *4*	100	3364.6	10^+	Q		
4445.4	12^-	737.7[@] *5*		3707.7	(10^-)	Q		
4493.2	(12^-)	609.3[@] *4*	86 *14*	3883.9	(11^-)			
		899.8[@] *4*	100 *29*	3593.5	(10^-)			
4550.0	(13^+)	461.6[@] *5*	100	4088.4	(12^+)			
4618.1	14^+	808.7[@] *5*		3809.4	12^+	Q		
4751.7	(13^-)	867.8[@] *5*	100	3883.9	(11^-)	Q		
4804.7	(13^-)	737.2[@] *5*	100	4067.5	(11^-)	Q		
4808.8	(13^+)	817.4[@] *5*	62 *8*	3991.3	(11^+)	Q		
		999.6[@] *5*	100 *8*	3809.4	12^+	D+Q		
4869.7	(14^+)	319.8[@] *5*	90 *10*	4550.0	(13^+)	D+Q		
		781.3[@] *5*	100 *13*	4088.4	(12^+)			
4910.7	(13^-)	417.5[@] *5*	45 *10*	4493.2	(12^-)			
		832.5[@] *5*	50 *5*	4078.2	(11^-)	Q		
		1026.8[@] *5*	35 *5*	3883.9	(11^-)	Q		

$^{128}_{54}Xe_{74}$-19

Adopted Levels, Gammas (continued)

γ(^{128}Xe) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ	E_f	J_f^π	Mult.[‡]
5097.0	(14$^+$)	846.0[@] *4*	100	4251.0	(12$^+$)	Q
5233.0	12$^-$	787.6[@] *4*	100	4445.4	12$^-$	Q
5288.1	16$^+$	670.0[@] *4*	100	4618.1	14$^+$	Q
5335.7	(15$^+$)	466.1[@] *5*	100	4869.7	(14$^+$)	
5460.8	(14$^-$)	550.1[@] *5*	100 *31*	4910.7	(13$^-$)	D+Q
		709.1[@] *5*	54 *15*	4751.7	(13$^-$)	D+Q
5492.2	(15$^+$)	874.1[@] *5*	100	4618.1	14$^+$	D+Q
5573.3	16$^+$	955.2[@] *5*		4618.1	14$^+$	Q
5658.3	(15$^-$)	853.6[@] *4*	100	4804.7	(13$^-$)	Q
5680.4	(16$^+$)	344.7[@] *4*	30 *4*	5335.7	(15$^+$)	
		810.5[@] *5*	100 *13*	4869.7	(14$^+$)	
5713.1	(15$^-$)	961.4[@] *5*	100	4751.7	(13$^-$)	Q
5714.9		906.1[@] *5*	100	4808.8	(13$^+$)	Q
5817.5		159.2[@] *5*	100	5658.3	(15$^-$)	
5967.7	(16$^+$)	870.7[@] *4*	100	5097.0	(14$^+$)	Q
6076.7	(17$^+$)	396.3[@] *4*	100	5680.4	(16$^+$)	
6118.2	16$^-$	885.2[@] *5*	100	5233.0	12$^-$	
6186.9	(18$^+$)	898.8[@] *5*	100	5288.1	16$^+$	
6248.8	(16$^-$)	788.0[@] *4*	100	5460.8	(14$^-$)	Q
6447.1		629.5[@] *4*	21.4 *24*	5817.5		
		788.8[@] *4*	100 *7*	5658.3	(15$^-$)	
6606.2	18$^+$	1032.9[@] *3*	100	5573.3	16$^+$	Q
6646.2	(17$^-$)	933.1[@] *3*	100	5713.1	(15$^-$)	
6649.6		936.5[@] *3*	100	5713.1	(15$^-$)	
7016.3	(19$^+$)	939.6[@] *4*	100	6076.7	(17$^+$)	
7016.4		569.3[@] *5*	100	6447.1		
7228.7	(18$^-$)	979.9[@] *3*	100	6248.8	(16$^-$)	Q
7256.8	(20$^+$)	1069.9[@] *5*	100	6186.9	(18$^+$)	
7711.1	20$^+$	1104.9[@] *3*	100	6606.2	18$^+$	Q
8010.9	(21$^+$)	994.6[@] *4*	100	7016.3	(19$^+$)	Q
8893.1	22$^+$	1182.0[@] *3*	100	7711.1	20$^+$	Q
8948.0		1236.9[@] *4*	100	7711.1	20$^+$	

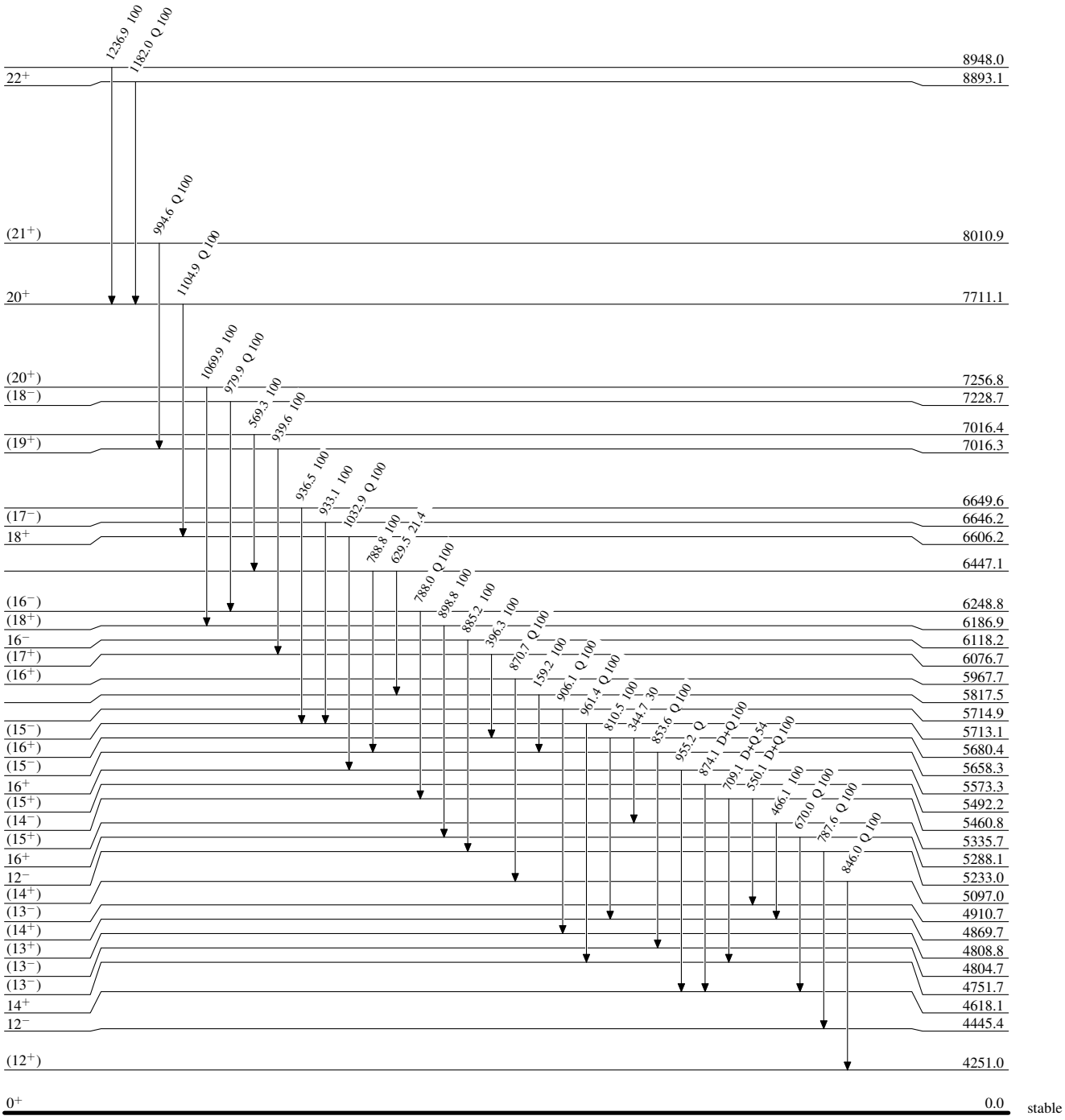
[†] From ^{128}Cs ε decay, unless otherwise noted.
[‡] Mult and δ are based on γ(θ), DCO ratio and α(exp) in in-beam γ spectroscopy, and γγ(θ) in ^{128}Cs ε decay.
[#] From (α,nγ),(α,2nγ).
[@] From (HI,xnγ).
[&] From (α,nγ),(α,2nγ).
[a] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.
[b] Placement of transition in the level scheme is uncertain.

$^{128}_{54}Xe_{74}$-20

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

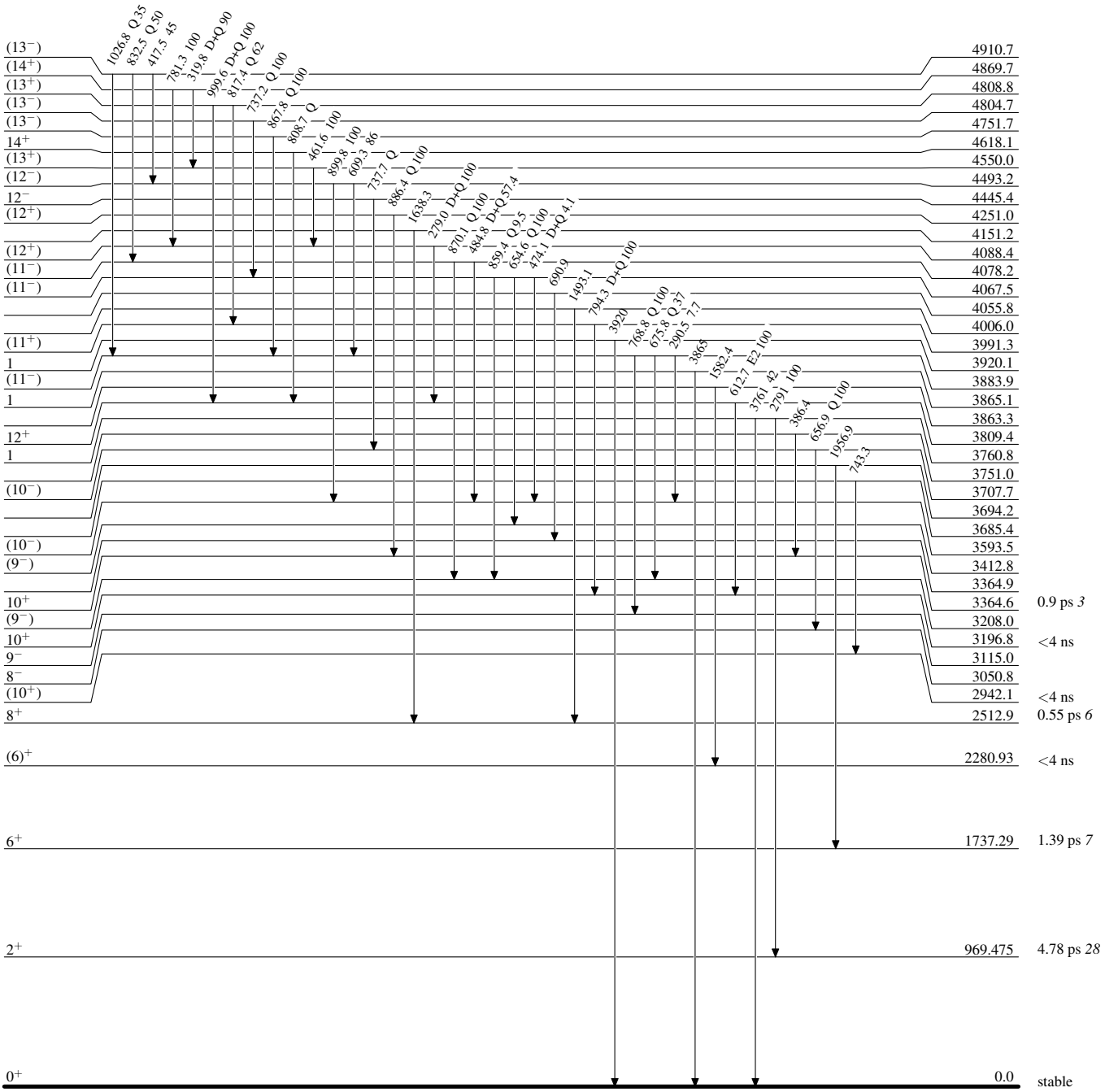


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

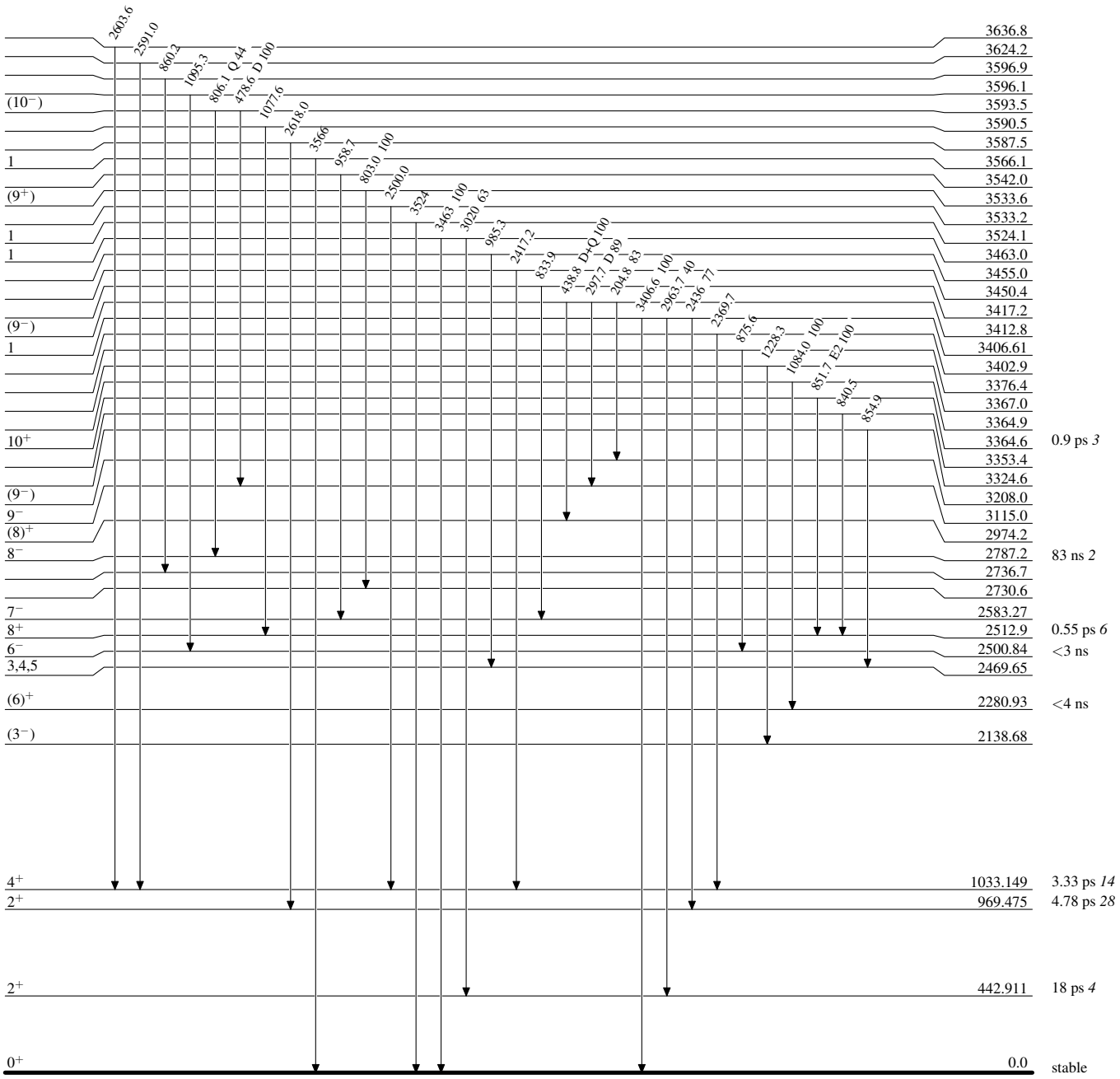


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

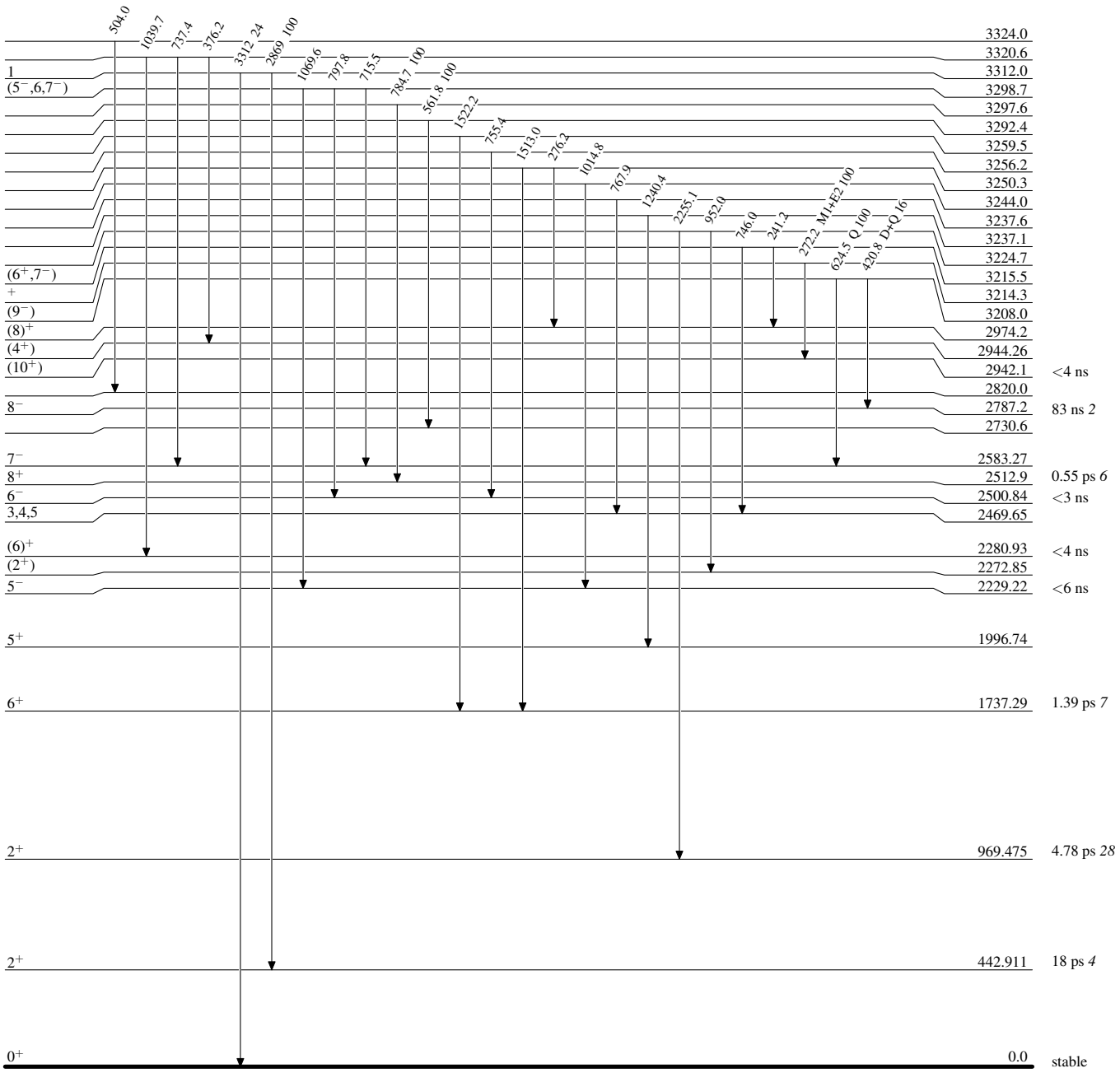


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{128}_{54}Xe_{74}$

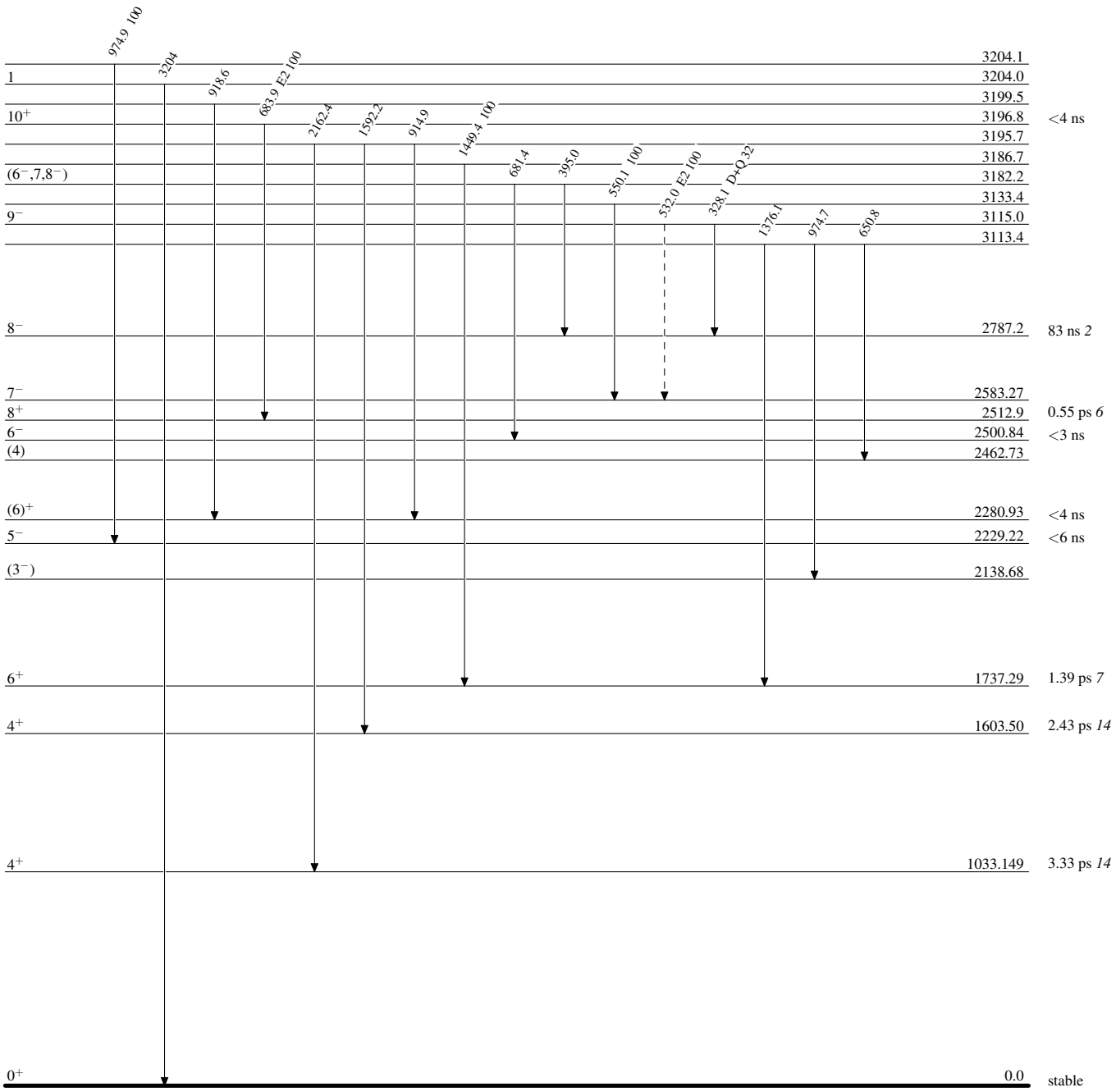
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{128}_{54}Xe_{74}$

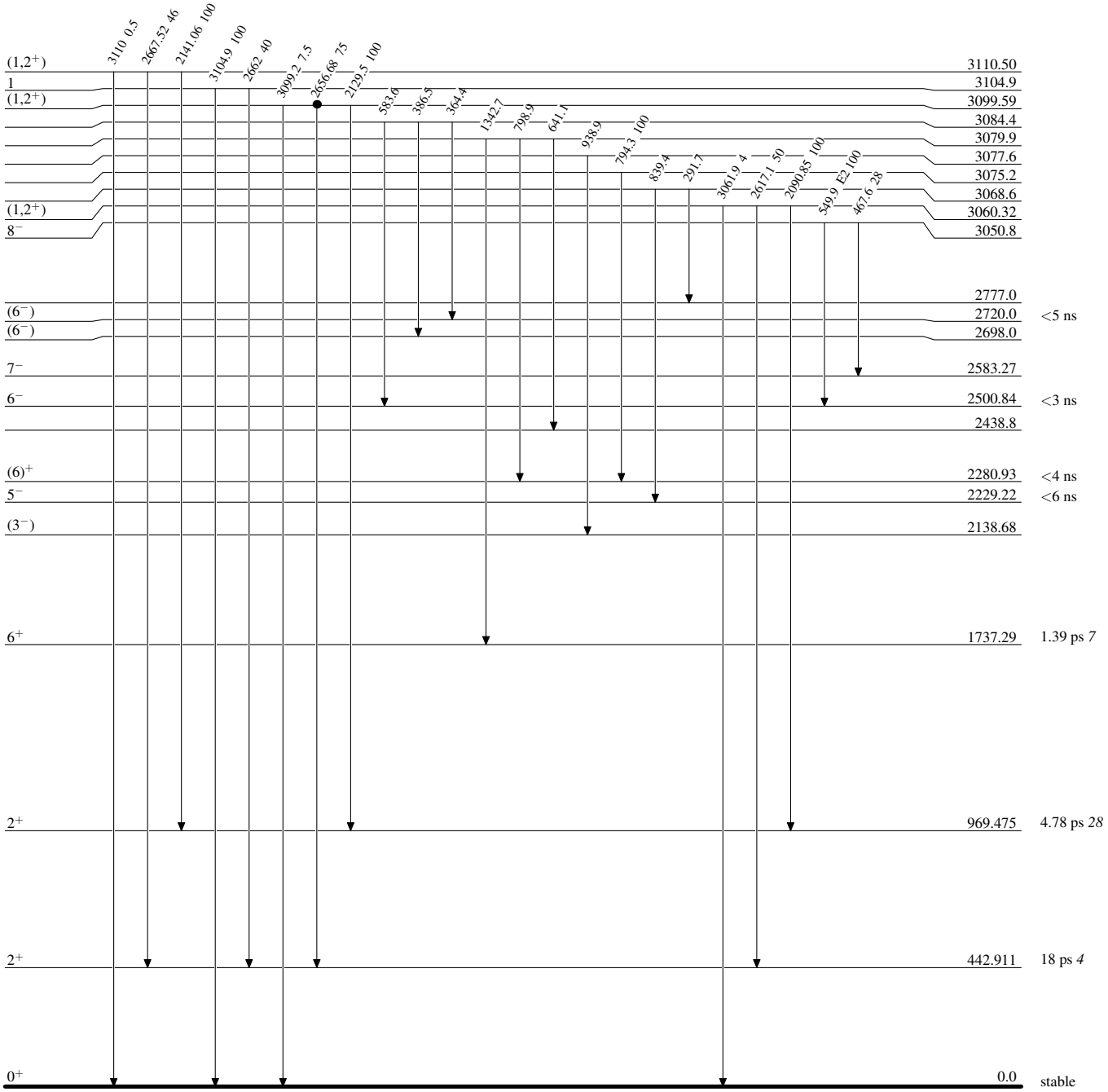
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence

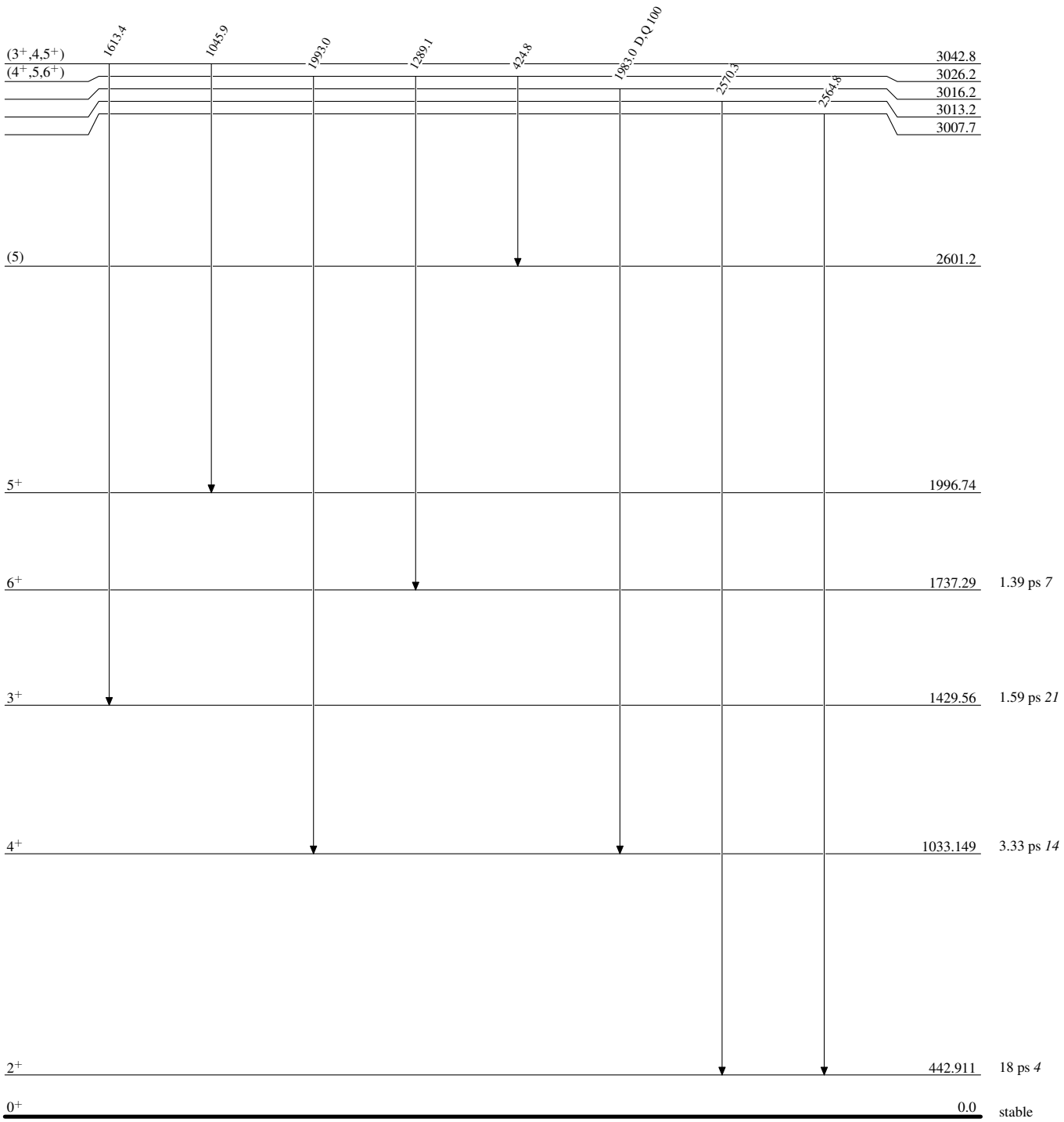


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

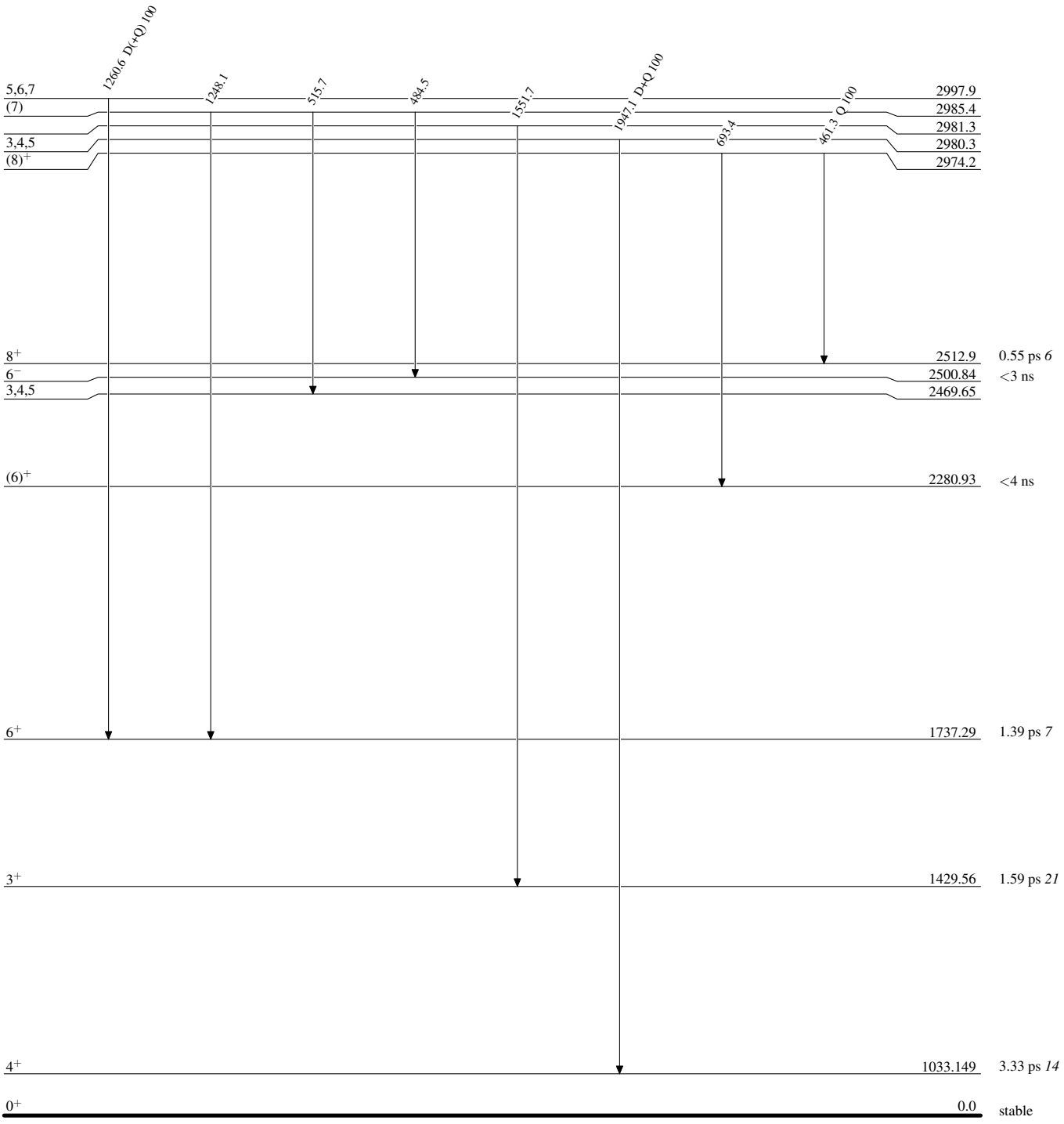


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

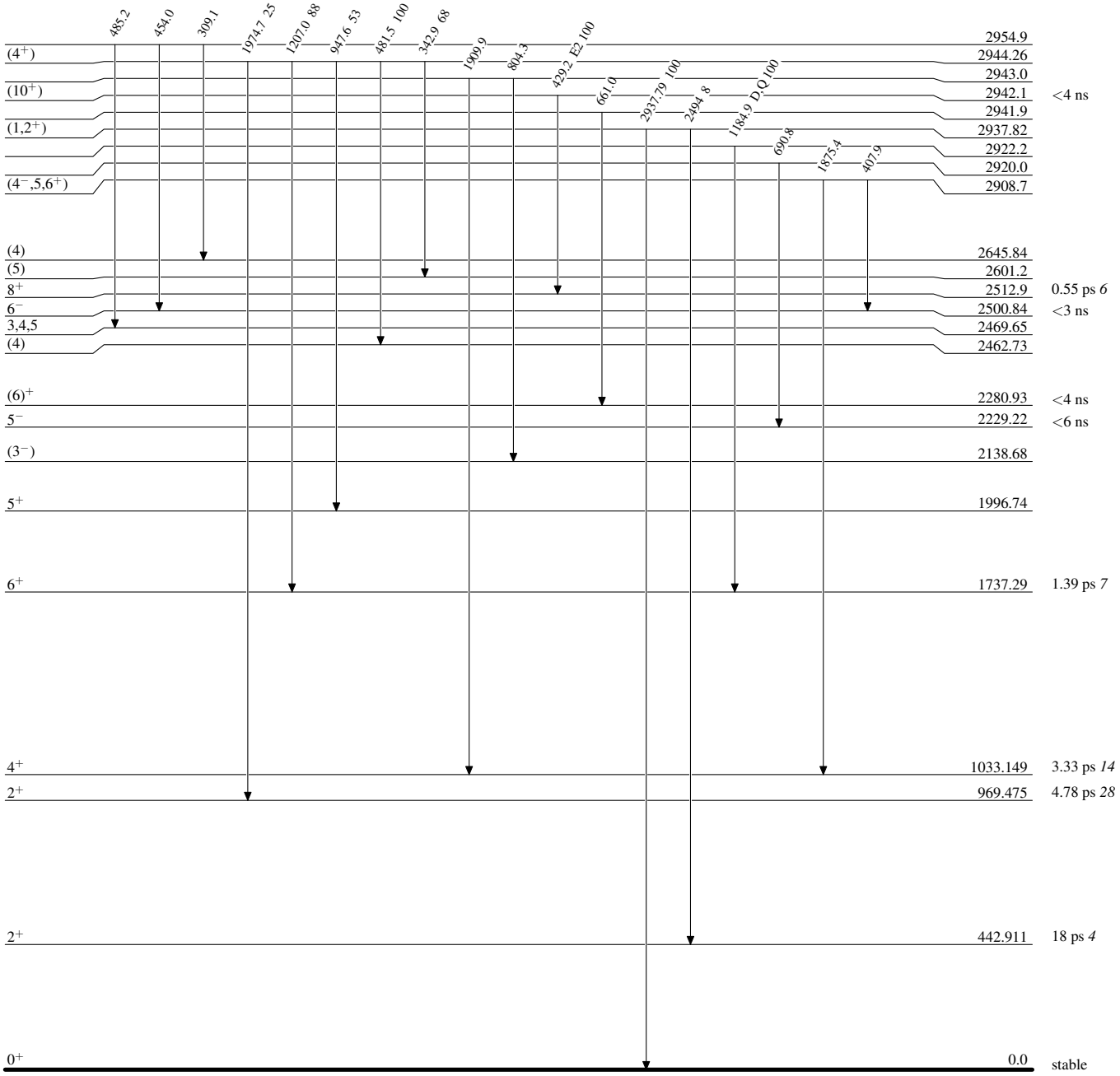


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{128}_{54}Xe_{74}$

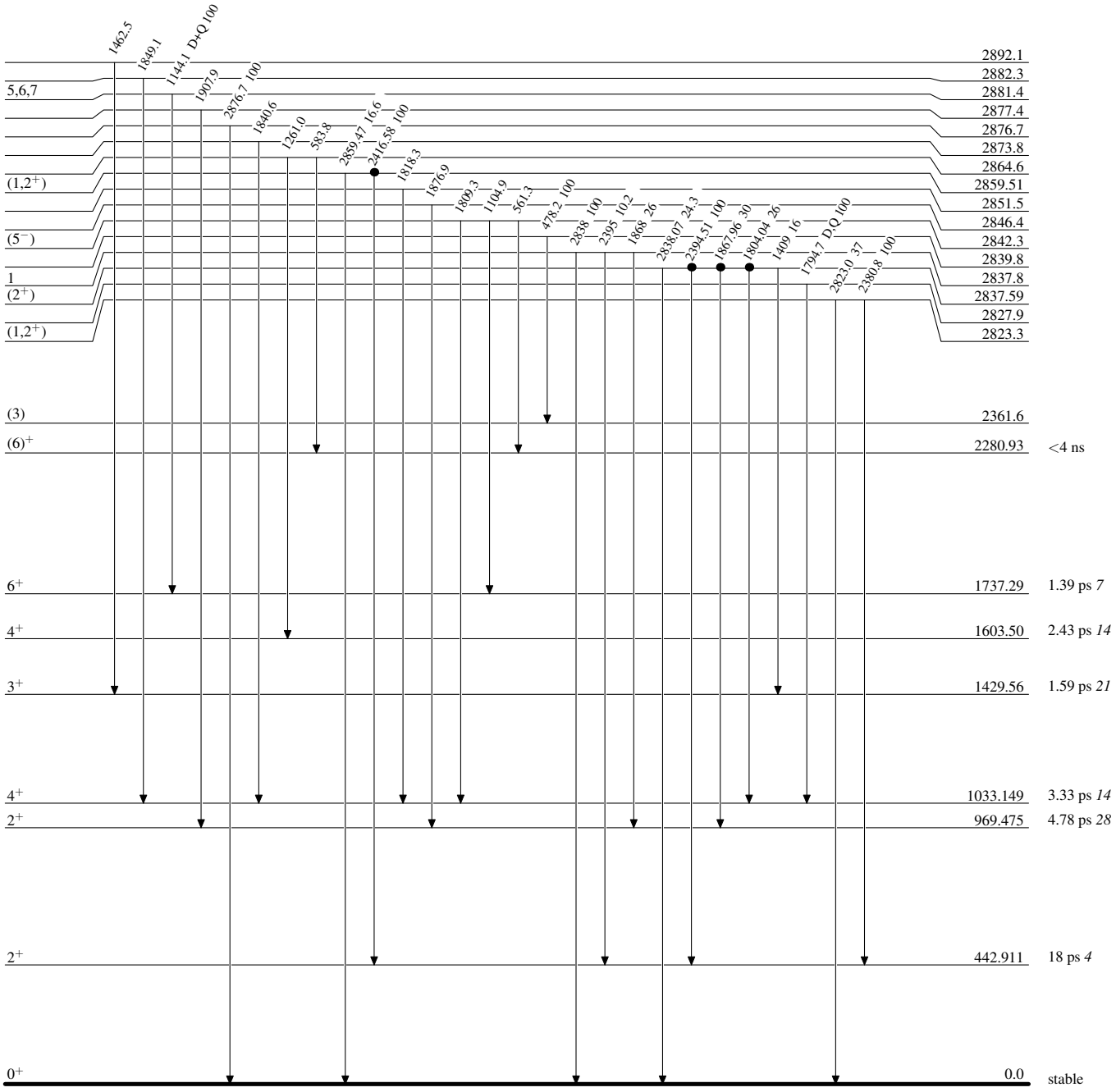
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence



$^{128}_{54}Xe_{74}$

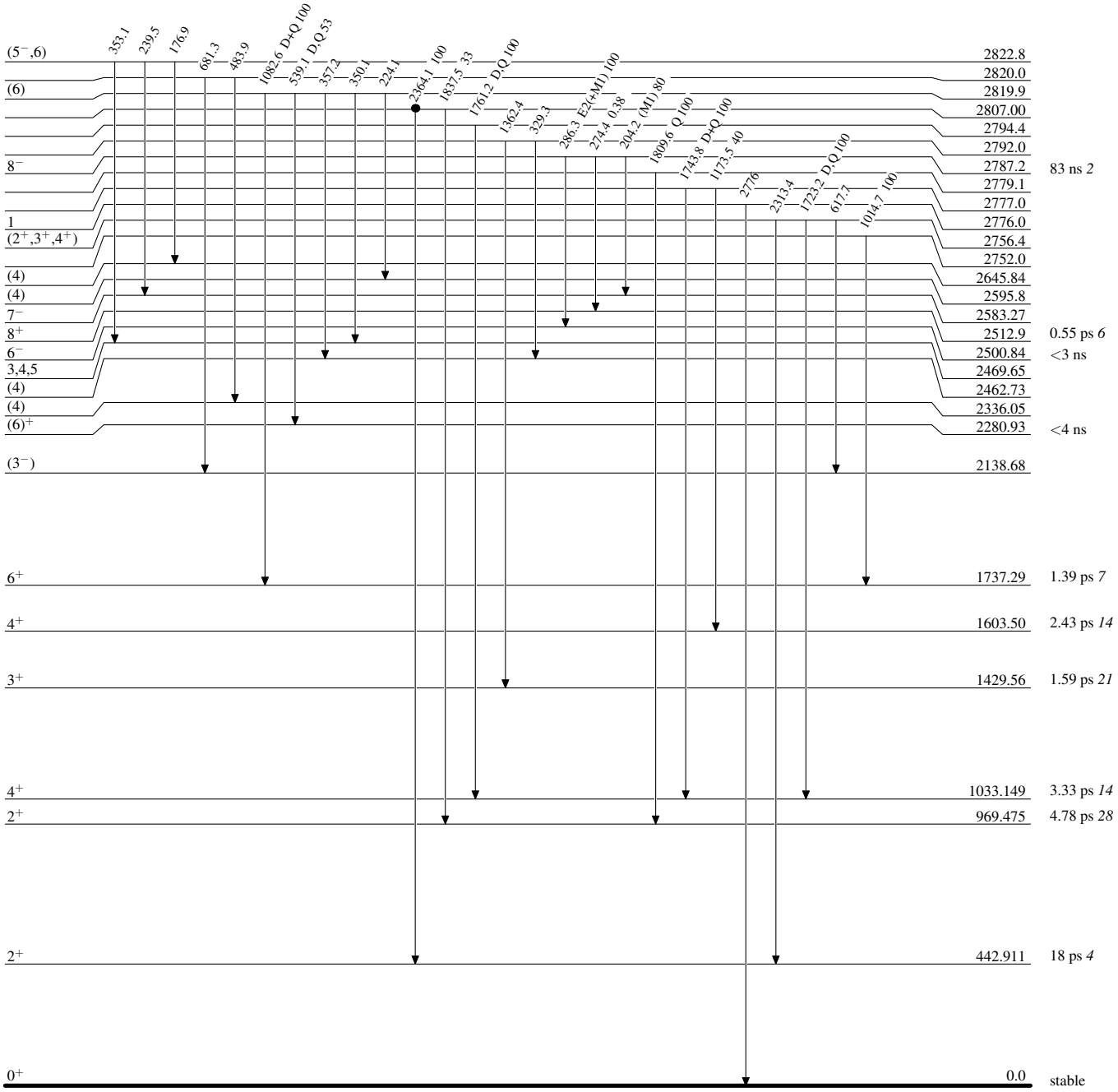
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence



$^{128}_{54}Xe_{74}$

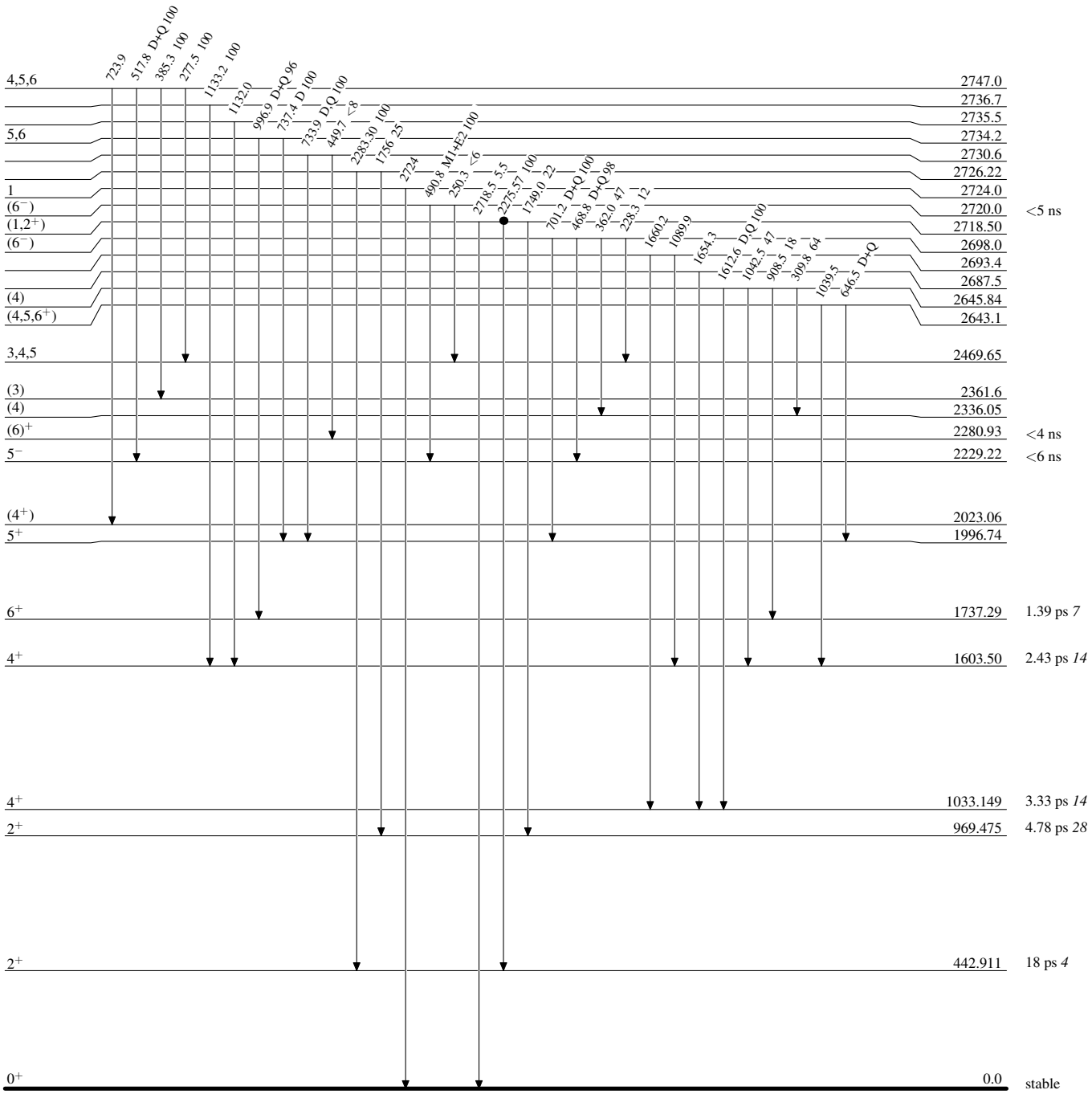
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence

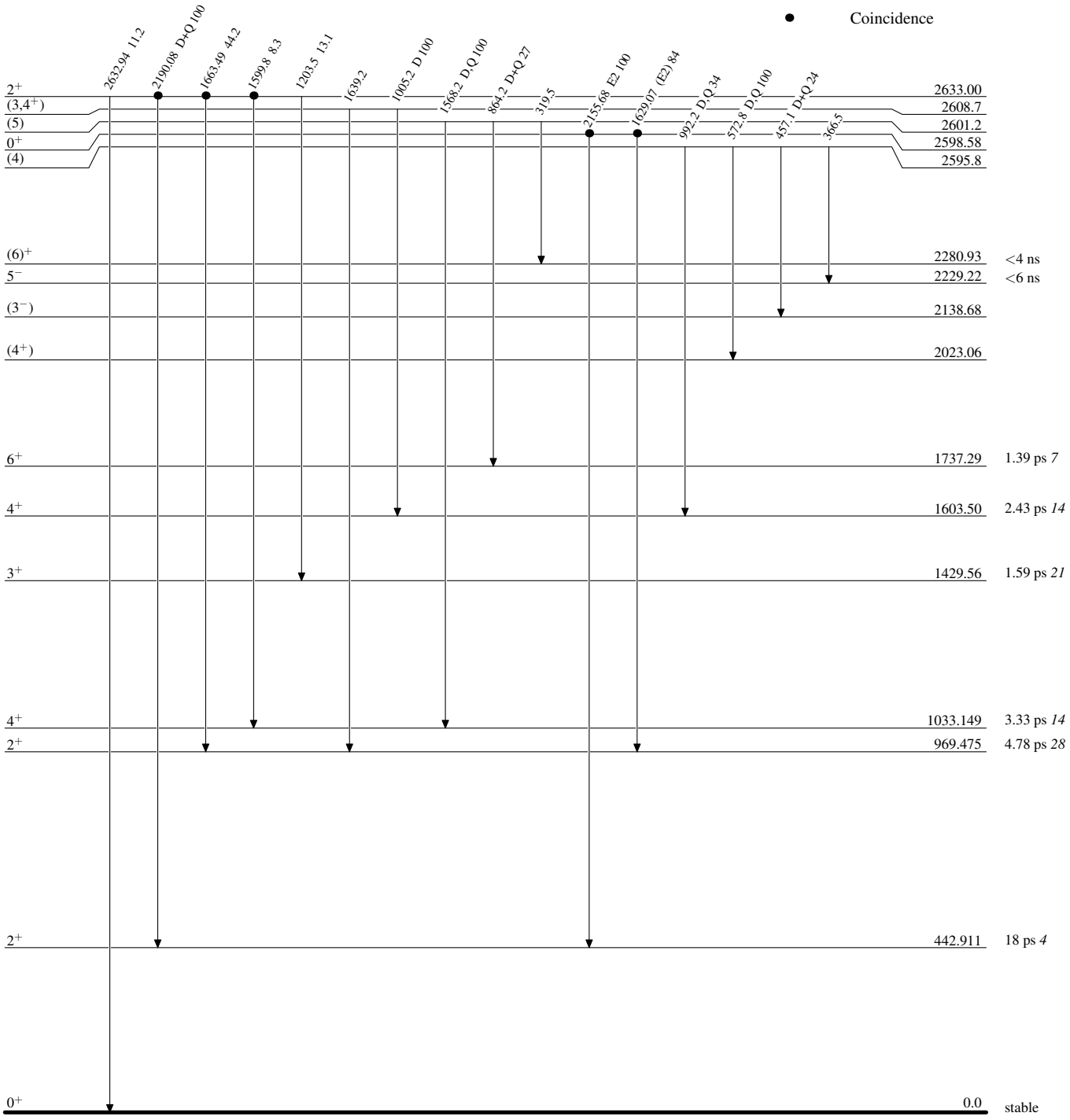


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

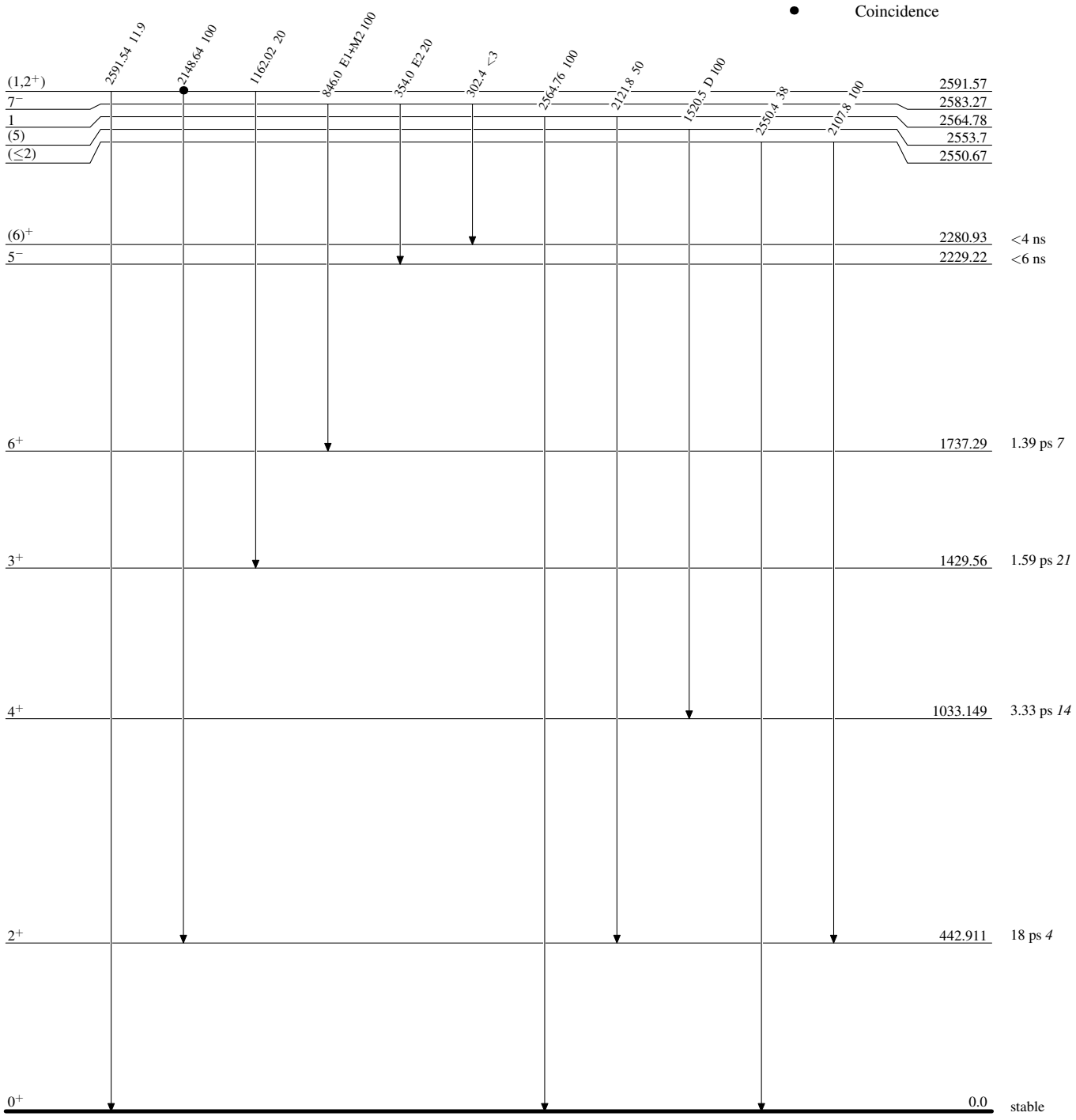


$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{128}_{54}Xe_{74}$

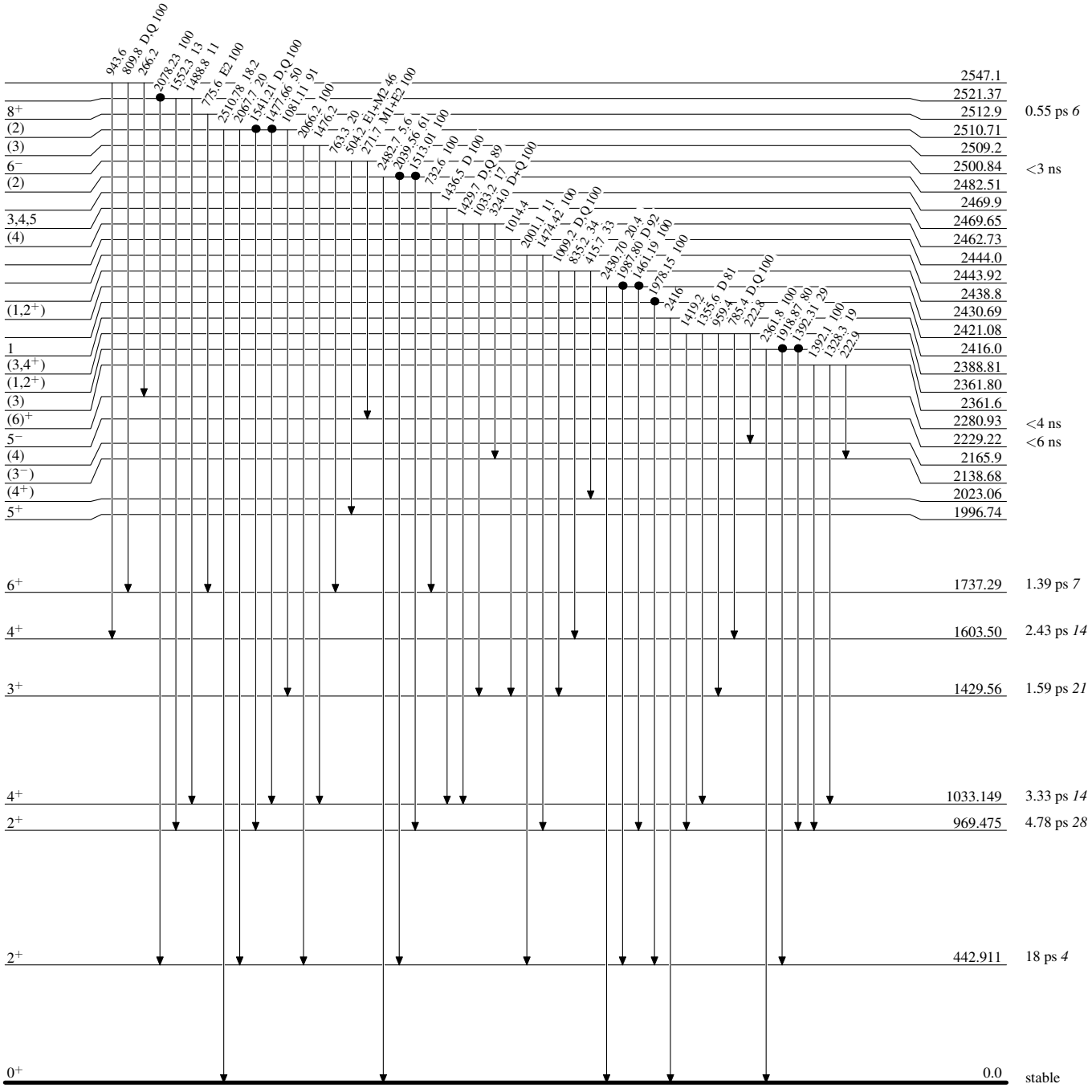
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

● Coincidence



$^{128}_{54}Xe_{74}$

Legend

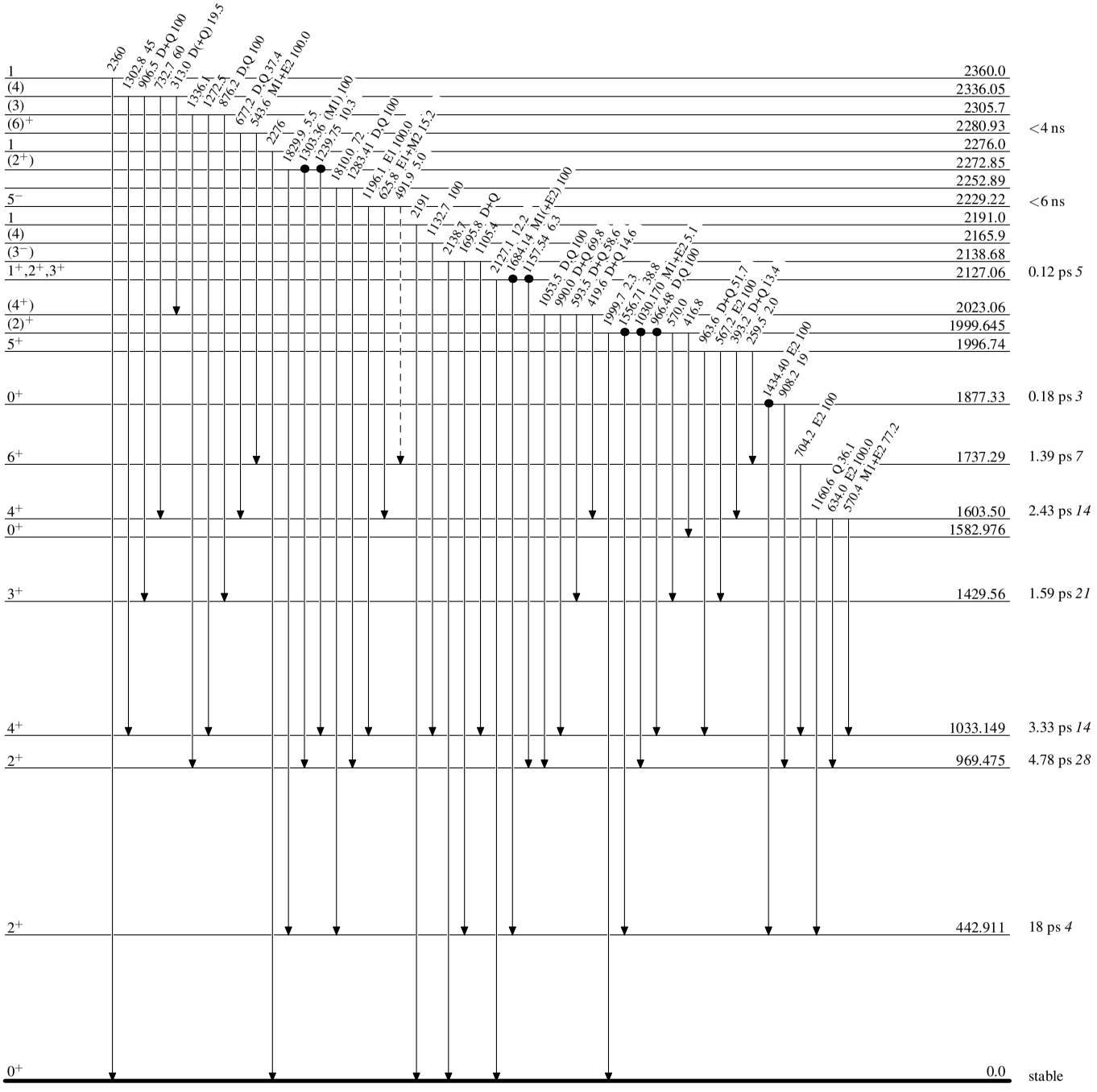
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)

Coincidence



$^{128}_{54}Xe_{74}$

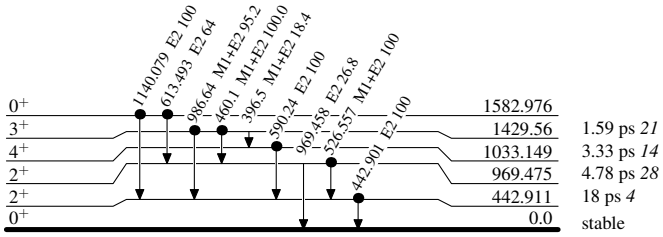
Adopted Levels, Gammas

Legend

Level Scheme (continued)

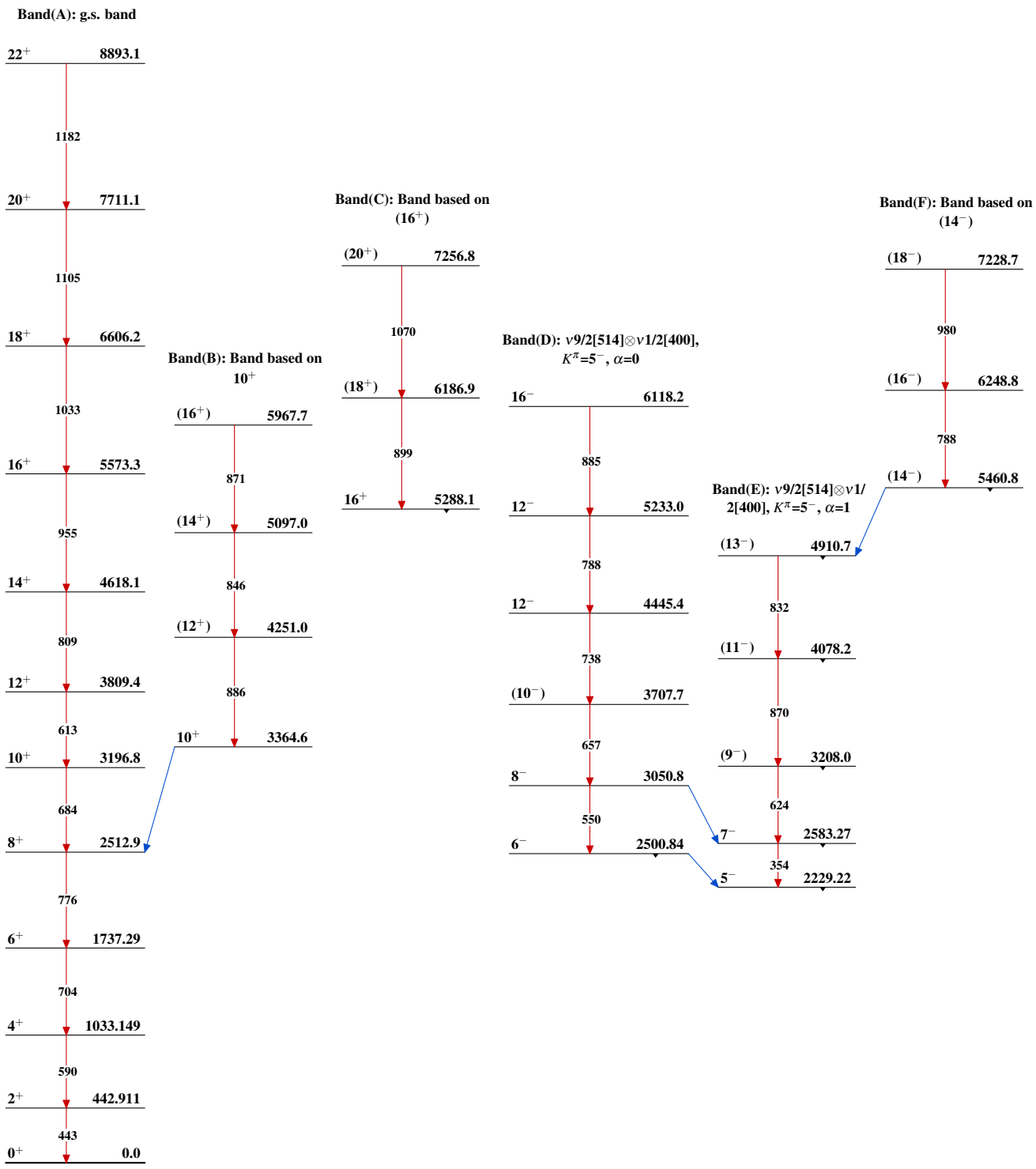
Intensities: Relative photon branching from each level

● Coincidence



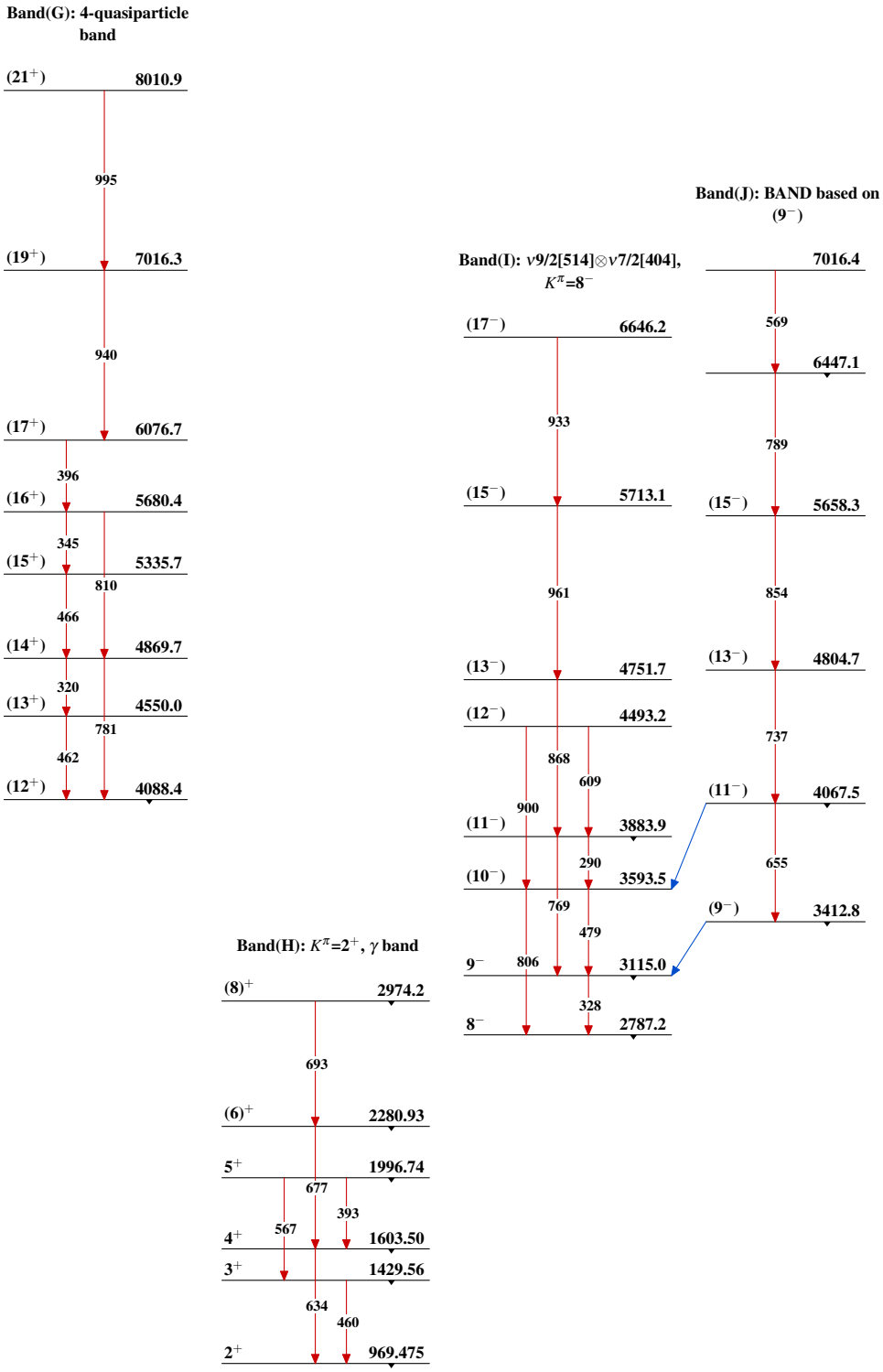
$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas



$^{128}_{54}Xe_{74}$

Adopted Levels, Gammas (continued)



$^{128}_{54}Xe_{74}$