Adopted Levels, Gammas

Type	Author	Citation	Literature Cutoff Date
	History		
Full Evaluation	J. K. Tuli, P. Blokhin, J. Kaur, J. Y. Lee and N. Sharma	NDS 114, 661 (2013)	28-Feb-2013

Q(β^-)=−785.3 *25*; S(n)=4550.7 *5*; S(p)=4929.6 *9*; Q(α)=7594.5 *5* 2012Wa38
S(2n)=12209.2 *15*, S(2p)=9395.9 *14* (2012Wa38).

^{211}Po evaluated by J.K. Tuli, P. Blokhin, J. Kaur, J.Y. Lee, βn. Sharma.

^{211}Po Levels

Cross Reference (XREF) Flags

A	^{211}Bi β^- decay	F	^{208}Pb(^{9}Be,α2nγ)
B	^{211}Po IT decay (25.3 s)	G	^{208}Pb(^{76}Ge,Xγ)
C	^{211}At ε decay	H	^{209}Bi(d,γ)
D	^{215}Rn α decay	I	^{210}Po(d,p)
E	^{208}Pb(α,nγ)		

Theory, calculations, systematics:
α decay (transfer) widths: 1983Ka15, 1976Da18, 1976De25, 1976Fl06
β decay calculations: 1971Ra31
B(E3) systematics: 1989Dr02, 1985Be05
Effective moment of inertia: 1982Ad01, 1982Ig02, 1975Ok03
Levels, configurations, shell model: 1982Mu06, 1981Si08, 1991Wa22
Magicities: 1983Ze02
Quadrupole core vibrations: 1975Ew01
Quadrupole-octupole deformation: 1987Sh24

E(level)	J$^\pi$[†]	T$_{1/2}$	XREF	Comments
0.0	9/2$^+$	0.516 s *3*	ABCDEFGHI	%α=100 μ=−1.197 *85* (2014Se07) Q=−0.77 *8* (2014Se07) $\delta\nu$(^{211}Po,^{196}Po)=−8.99 GHz *10*; $\delta\langle r^2\rangle$(^{211}Po,^{210}Po)=0.104 fm^2 *10* (2013Se03). Method: resonance ionization laser spectroscopy using RILIS at ISOLDE-CERN. Beam of ^{211}Po produced in bombardment of UC$_x$ with 1.4 GeV protons. Systematic uncertainties from electronic factor and mass-shift calculations are about the same magnitude as the quoted values, and are not included. $\langle\beta_2^2\rangle^{1/2}$=0.12 (2013Se03,2014Se07). J$^\pi$: L=4 in ^{210}Po(d,p); M1 γ from 11/2$^+$ level. T$_{1/2}$: from 1974Ba29. Others: 0.56 s *4* (1958To25), 0.52 s (1954Sp32), 0.5 s *1* (1954Wi26). μ,Q: hyperfine structure studies using in-source resonance ionization laser spectroscopy at CERN-ISOLDE facility (2014Se07). Total (statistical uncertainties=0.030 for μ and 0.08 for Q, and systematic) uncertainties are given.
687.2 *4*	11/2$^+$		BC EF I	J$^\pi$: L=6 in ^{210}Po(d,p); log *ft*=5.9 from ^{211}At 9/2$^-$ g.s.
1050.9 *5*	5/2$^+$		EF I	J$^\pi$: L=2 in ^{210}Po(d,p); E2 γ to 9/2$^+$ g.s.
1064.8 *4*	15/2$^-$	14.0 ns *2*	B EF	μ=−0.38 *15* (1973FaZD,1989Ra17,2011StZZ) J$^\pi$: from $\gamma(\theta)$, excit; E3 γ to 9/2$^+$ g.s. T$_{1/2}$: from 1998Mc03. Other value: 15.9 ns 14 (1973FaZD). μ: from g-factor ($\gamma(\theta$,H,t) ^{208}Pb(α,nγ)).
1121.8 *4*	7/2$^+$		EF I	J$^\pi$: M1+E2 γ to 9/2$^+$ g.s.; $\gamma(\theta)$ (^{208}Pb(α,nγ)).

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Adopted Levels, Gammas (continued)

^{211}Po Levels (continued)

E(level)	Jπ†	$T_{1/2}$	XREF	Comments
1160.6 *4*	(9/2+)		EF I	Jπ: (E2+M1) γ to 9/2+ g.s.; γ(θ) (^{208}Pb(α,nγ)).
1181.4 *4*	(13/2+)		EF	Jπ: (E2) γ to 9/2+ g.s.; shell model.
1385.1# *7*	(3/2)+		EF I	XREF: I(1378). Jπ: E2 γ to 5/2+ level; excit indicates J<5/2. L=2 in ^{210}Po(d,p).
1407.3 *8*	(+)		EF	Jπ: 285.4γ (M1) to 7/2+.
1409.3 *4*	(+)		EF	Jπ: 287.7γ (M1) to 7/2+.
1427.8 *7*	(17/2+)		B EF	Jπ: (E1) γ to 15/2− level; excit of 362.9γ.
1427.8+x		25.0 ns *14*	EF	Additional information 1. E(level): Level needed to explain weak delayed feeding of 1427 level in in-beam reactions (1981Fa01,1998Mc03). $T_{1/2}$: From 1998Mc03. Other: 20 ns *5* (1981Fa01). Jπ: (21/2+) from shell-model calculations (1998Mc03).
1436.6‡ *4*	(5/2+,7/2+,9/2+)		EF i	XREF: i(1436). Jπ: (M1) γ to 7/2+ level.
1443.1‡ *7*	3/2+,5/2+,7/2+		EF i	XREF: i(1436). Jπ: M1+E2 γ to 5/2+ level.
1458.9 *7*	(15/2+)		EF	Jπ: From shell model calculation (1998Mc03).
1462 *5*	(25/2+)	25.2 s *6*	B F H	%α=99.984 *4*; %IT=0.016 *4* E(level): from ΔQ(α) of the α groups from ^{211}Po(1462 level) and ^{211}Po(g.s.) to ^{207}Pb g.s. Jπ: shell model; $T_{1/2}$ and branching ratio indicate that the unobserved 34-keV isomeric transition to (17/2+) level is probably E4 or M4. $T_{1/2}$: weighted average of 24.2 s *5* (1974Ba29), 25.5 s *3* (1962Pe15). 28 s *1* (1982Bo04), 25 s *2* (1962Ka15), 25 s (1954Sp32), 24.9 s 14 (1998Mc03). %α,%IT: measured Iα(7449.3) from ^{211}Po g.s. decaying with $T_{1/2}$=25.2 s (1989Ku08).
1508.3 *6*	(+)		EF	Jπ: 386.5γ (M1) to 7/2+.
1509.6@ *11*	(+)		E	Jπ: 458.7γ (M1) to 5/2+.
1517.2 *7*	(+)		EF	Jπ: 356.6γ (M1) to (9/2+).
1541.8 *9*			EF	
1577.9 *9*	(1/2)	3.5 ns	EF	Jπ: excit of 193.1γ in ^{208}Pb(α,nγ) indicates low spin. $T_{1/2}$: (193.1γ)(t) in ^{208}Pb(α,nγ).
1579.9 *9*			F	
1585.1 *7*	(+)		EF	Jπ: 534.2γ (M1) to 5/2+.
1612.4 *7*			F	
1614.5 *7*	(5/2+,7/2+)		EF	Jπ: 492.6γ (M1) to 7/2+, 563.7γ (M1+E2) to 5/2+.
1615.6 *12*			EF	
1637.8 *6*	(+)		EF	Jπ: 516.0γ (M1) to 7/2+.
1656.8+x *5*			F	
1696.6 *9*	(+)		EF	Jπ: 268.8γ (M1) to (17/2+).
1716.2 *7*			EF	
1727.2 *11*			E	
1736.0+x *6*			EF	
1739.6 *9*	(+)		E	Jπ: 296.4γ (M1) to (3/2+,5/2+,7/2+).
1786.3 *9*			F	
1798.0 *7*			EF	
1799 *10*	3/2+,5/2+		I	Jπ: L=2 in ^{210}Po(d,p).
1809.2?			E	
1819 *5*	(27/2+)		FG	Configuration=((π $h_{9/2}$)$^{+2}$(ν $i_{11/2}$)) (1998Fo04).
1852.5 *9*			F	
1876.9 *11*			E	
1902.8+x *5*			F	
1904.3+x *8*			F	

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Adopted Levels, Gammas (continued)

^{211}Po Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$	XREF	Comments
1914.7 *9*			F	
1939.1+x *5*			F	
1944.3 *7*			EF	
1978.3+x *5*			F	
1994.9+x *5*			F	
2023.9[@] *11*			E I	
2029.5 *11*			E	
2034.5 *11*			E	
2077.1 *13*	(+)		E	J^{π}: 462.6γ (M1) to (5/2$^+$, 7/2$^+$).
2079.0?			E	
2084 *10*	1/2$^+$		I	E(level): this level could be either the 2079.0 or the 2094.0 level observed in ^{208}Pb(α,nγ). J^{π}: L=0 in ^{210}Po(d,p).
2093.7 *9*			F	
2094.2 *10*	(+)		E	
2104.3+x *5*			F	
2112.2 *9*			E	
2135 *5*	(31/2$^-$)	243 ns *21*	FG	%IT≈100 $T_{1/2}$: From 1998Mc03. J^{π}: 673γ E3 to (25/2$^+$), 315γ (M2) to (27/2$^+$).
2161 *10*	(1/2$^+$)		I	J^{π}: L=(0) in ^{210}Po(d,p).
2186.9+x *5*			F	
2218.8 *9*			F	
2223.6 *10*			EF	
2277.9 *7*			EF	
2298.0 *12*			E	
2300.2 *12*			E	
2315 *10*			I	
2339.6 *8*			EF	
2353.2 *9*			F	
2364 *10*			I	
2390 *10*			I	
2414 *10*			I	
2431.4 *9*			F	
2443.2+x *5*			F	
2456 *10*			I	
2547.8 *13*			E	
2560 *10*			I	
2606 *10*	7/2$^+$,9/2$^+$		I	J^{π}: L=4 in ^{210}Po(d,p).
2639 *10*	7/2$^+$,9/2$^+$		I	J^{π}: L=4 in ^{210}Po(d,p).
2661 *10*	3/2$^+$,5/2$^+$		I	J^{π}: L=2 in ^{210}Po(d,p).
2691 *10*			I	
2753 *10*			I	
2839 *5*			F	
2862 *10*	7/2$^+$,9/2$^+$		I	J^{π}: L=4 in ^{210}Po(d,p).
2865 *5*	(33/2$^-$)		FG	J^{π}: γ to (31/2$^-$); weak γ from (37/2$^+$) isomer.
2910 *10*	3/2$^+$,5/2$^+$		I	J^{π}: L=2 in ^{210}Po(d,p).
2990 *10*			I	
3003 *10*			I	
3043 *10*			I	
3067 *10*			I	
3175 *10*			I	
3252 *10*			I	
3384 *10*			I	
3436 *10*			I	
3442 *5*	(37/2$^+$)	≤2 ns	FG	$T_{1/2}$: From 1998Mc03.

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Adopted Levels, Gammas (continued)

^{211}Po Levels (continued)

E(level)	J^{π}[†]	$T_{1/2}$	XREF	Comments
				J^{π}: E3 γ to $(31/2^-)$.
3754 *10*			I	
3869 *10*			I	
4364 *5*	$(37/2^-)$		FG	J^{π}: gammas to $(33/2^-)$ and $(37/2^+)$. Configuration=$(^{210}Po,5^-)\otimes((\pi\ h_{9/2})^{+2}(\nu\ i_{11/2}))$ (1998Fo04).
4872 *6*	$(43/2^+)$	2.8 μs *7*	FG	%IT≈100 J^{π}: γ to $(37/2^-)$ is expected as E3. Configuration= $(^{210}Po,5^-)\otimes((\pi\ h_{9/2})(\pi\ i_{13/2})(\nu\ i_{11/2}))$ (1998Fo04). $T_{1/2}$: From 1998Mc03. Other value: 2 μs *1* (1998Fo04).
4911 *5*			F	

[†] Assignments for high-spin (J>13/2) are also based on shell-model predictions.
[‡] An L=(2) transition populates a level at E=1436 *10* (1979Bh01). It is not clear whether this is the same level seen at 1436.6 keV (which will then have $J^{\pi}=5/2^+$), or that seen at 1443.0 keV (with $J^{\pi}=3/2^+$ or $5/2^+$), or the transition populates both levels.
[#] It is possible that the levels seen at 1378 and 1385.2 keV are the same with $J^{\pi}=3/2^+$.
[@] From ^{208}Pb(α,nγ).

Adopted Levels, Gammas (continued)

$\gamma(^{211}Po)$

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
687.2	$11/2^+$	687.1 *5*	100	0.0	$9/2^+$	M1+E2[@]	−0.20[@] *2*	0.0536 *9*	α(K)=0.0438 *7*; α(L)=0.00752 *12*; α(M)=0.00177 *3* α(N)=0.000455 *7*; α(O)=9.52×10^{-5} *15*; α(P)=1.231×10^{-5} *19*
1050.9	$5/2^+$	1050.9 *5*	100	0.0	$9/2^+$	E2		0.00668 *10*	α=0.00668 *10*; α(K)=0.00530 *8*; α(L)=0.001052 *15*; α(M)=0.000252 *4* α(N)=6.47×10^{-5} *9*; α(O)=1.332×10^{-5} *19*; α(P)=1.631×10^{-6} *23* Mult.: from K/L ratio.
1064.8	$15/2^-$	377.6 *5*	4.6 *3*	687.2	$11/2^+$	M2[&]		0.878	α(K)=0.668 *10*; α(L)=0.1584 *24*; α(M)=0.0390 *6* α(N)=0.01011 *15*; α(O)=0.00210 *3*; α(P)=0.000265 *4* B(M2)(W.u.)=0.340 *25*
		1064.9 *5*	100 *3*	0.0	$9/2^+$	E3		0.01499	α(K)=0.01105 *16*; α(L)=0.00297 *5*; α(M)=0.000736 *11* α(N)=0.000190 *3*; α(O)=3.86×10^{-5} *6*; α(P)=4.55×10^{-6} *7* B(E3)(W.u.)=19.2 *9* Mult.: from ce data and $\gamma(\theta$,H,t) in ^{208}Pb(α,nγ).
1121.8	$7/2^+$	1122.0	100	0.0	$9/2^+$	M1+E2[@]	+0.15[@] *2*	0.01525 *23*	α(K)=0.01249 *19*; α(L)=0.00211 *3*; α(M)=0.000494 *8* α(N)=0.0001272 *19*; α(O)=2.66×10^{-5} *4*; α(P)=3.46×10^{-6} *5*; α(IPF)=6.68×10^{-7} *10*
1160.6	$(9/2^+)$	1160.6 *5*	100	0.0	$9/2^+$	(E2+M1)	3.1	0.00635 *9*	α=0.00635 *9*; α(K)=0.00510 *8*; α(L)=0.000948 *14*; α(M)=0.000225 *4* α(N)=5.79×10^{-5} *9*; α(O)=1.198×10^{-5} *17*; α(P)=1.496×10^{-6} *21*; α(IPF)=1.44×10^{-6} *3*
1181.4	$(13/2^+)$	494.2 *5*	5.2 *11*	687.2	$11/2^+$				
		1181.4 *5*	100 *25*	0.0	$9/2^+$	(E2)		0.00535 *8*	α=0.00535 *8*; α(K)=0.00428 *6*; α(L)=0.000812 *12*; α(M)=0.000193 *3* α(N)=4.97×10^{-5} *7*; α(O)=1.025×10^{-5} *15*; α(P)=1.270×10^{-6} *18*; α(IPF)=2.37×10^{-6} *5* Mult.: $\gamma(\theta)$ suggests E2.
1385.1	$(3/2)^+$	334.3 *5*	100	1050.9	$5/2^+$	E2[&]		0.0918	α(K)=0.0525 *8*; α(L)=0.0294 *5*; α(M)=0.00758 *12* α(N)=0.00195 *3*; α(O)=0.000381 *6*; α(P)=3.88×10^{-5} *6*
1407.3	$(^+)$	246.5[c]	7	1160.6	$(9/2^+)$				
		285.4	35	1121.8	$7/2^+$	(M1)		0.579	α(K)=0.471 *7*; α(L)=0.0825 *12*; α(M)=0.0194 *3* α(N)=0.00500 *7*; α(O)=0.001047 *15*; α(P)=0.0001353 *19*
		1407.5	100	0.0	$9/2^+$				
1409.3	$(^+)$	248.8[c] *5*	≤3	1160.6	$(9/2^+)$				
		287.7 *5*	72 *20*	1121.8	$7/2^+$	(M1)		0.567	α(K)=0.461 *7*; α(L)=0.0807 *12*; α(M)=0.0190 *3* α(N)=0.00489 *8*; α(O)=0.001024 *16*; α(P)=0.0001324 *20* I_γ: 31 from (α,nγ) is in disagreement.
		1409.2 *5*	100 *8*	0.0	$9/2^+$				
1427.8	$(17/2^+)$	363.0 *5*	100	1064.8	$15/2^-$	(E1)		0.0204	α(K)=0.01668 *24*; α(L)=0.00283 *4*; α(M)=0.000664 *10* α(N)=0.0001697 *25*; α(O)=3.48×10^{-5} *5*; α(P)=4.26×10^{-6} *7*
1427.8+x		(x)		1427.8	$(17/2^+)$				E_γ: x ≤50 (1998Mc03).

$^{211}_{84}Po_{127}$-5

Adopted Levels, Gammas (continued)

γ(^{211}Po) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
1436.6	(5/2$^+$,7/2$^+$,9/2$^+$)	276.0 *5*	≤7	1160.6	(9/2$^+$)	(E2)		0.1624 *25*	α(K)=0.0809 *12*; α(L)=0.0608 *10*; α(M)=0.01585 *25* α(N)=0.00407 *7*; α(O)=0.000791 *13*; α(P)=7.79×10^{-5} *13*
		314.7	15	1121.8	7/2$^+$	(M1)		0.443	α(K)=0.361 *5*; α(L)=0.0630 *9*; α(M)=0.01485 *21* α(N)=0.00382 *6*; α(O)=0.000800 *12*; α(P)=0.0001034 *15*
		1436.7 *5*	100 *13*	0.0	9/2$^+$				
1443.1	3/2$^+$,5/2$^+$,7/2$^+$	392.1 *5*	100	1050.9	5/2$^+$	M1+E2[@]	+0.10[@] *3*	0.242	α(K)=0.197 *3*; α(L)=0.0344 *6*; α(M)=0.00810 *12* α(N)=0.00208 *3*; α(O)=0.000436 *7*; α(P)=5.63×10^{-5} *9*
1458.9	(15/2$^+$)	277.5 *5*	100	1181.4	(13/2$^+$)				
1462	(25/2$^+$)	(34 *5*)	100	1427.8	(17/2$^+$)	(E4)		6.5×10^6 *50*	B(E4)(W.u.)=0.7 *+11−7* E_γ: γ not observed, deduced from level scheme (1989Ku08). Mult.: Weisskopf estimates suggest E4 or M4; ΔJ^π from shell model prediction suggests E4.
1508.3	(+)	347.7	7	1160.6	(9/2$^+$)				E_γ,I_γ: From ^{208}Pb(α,nγ).
		386.5 *5*	100	1121.8	7/2$^+$	(M1)		0.254	α(K)=0.207 *3*; α(L)=0.0359 *6*; α(M)=0.00846 *13* α(N)=0.00218 *4*; α(O)=0.000456 *7*; α(P)=5.89×10^{-5} *9*
1509.6	(+)	458.7	100	1050.9	5/2$^+$	(M1)		0.1603	α(K)=0.1307 *19*; α(L)=0.0226 *4*; α(M)=0.00532 *8* α(N)=0.001369 *20*; α(O)=0.000287 *4*; α(P)=3.71×10^{-5} *6*
1517.2	(+)	356.6 *5*	100	1160.6	(9/2$^+$)	(M1)		0.316	E_γ: From ^{208}Pb(α,nγ). α(K)=0.257 *4*; α(L)=0.0447 *7*; α(M)=0.01054 *16* α(N)=0.00271 *4*; α(O)=0.000568 *9*; α(P)=7.34×10^{-5} *11*
1541.8		114.0 *5*	100	1427.8	(17/2$^+$)				
1577.9	(1/2)	192.8 *5*	100	1385.1	(3/2)$^+$				
1579.9		152.1 *5*	100	1427.8	(17/2$^+$)				
1585.1	(+)	534.2 *5*	100	1050.9	5/2$^+$	(M1)		0.1069	α(K)=0.0872 *13*; α(L)=0.01502 *22*; α(M)=0.00353 *5* α(N)=0.000909 *13*; α(O)=0.000190 *3*; α(P)=2.46×10^{-5} *4*
1612.4		561.5 *5*	100	1050.9	5/2$^+$				
1614.5	(5/2$^+$,7/2$^+$)	171.4	36	1443.1	3/2$^+$,5/2$^+$,7/2$^+$				E_γ,I_γ: From 1981Fa01.

Adopted Levels, Gammas (continued)

γ(^{211}Po) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	δ[#]	α[†]	Comments
1614.5	(5/2$^+$,7/2$^+$)	492.6	100	1121.8	7/2$^+$	(M1)		0.1326	α(K)=0.1081 *16*; α(L)=0.0187 *3*; α(M)=0.00439 *7* α(N)=0.001130 *16*; α(O)=0.000237 *4*; α(P)=3.06×10^{-5} *5* E$_\gamma$,I$_\gamma$: From 1981Fa01.
		563.7	98	1050.9	5/2$^+$	(M1+E2)	1.35	0.0485	α(K)=0.0380 *6*; α(L)=0.00797 *12*; α(M)=0.00192 *3* α(N)=0.000494 *7*; α(O)=0.0001016 *15*; α(P)=1.241×10^{-5} *18*
1615.6		187.8	100	1427.8	(17/2$^+$)				
1637.8	(+)	477.1	55	1160.6	(9/2$^+$)				E$_\gamma$,I$_\gamma$: From 1981Fa01.
		516.0 *5*	100	1121.8	7/2$^+$	(M1)		0.1172	α(K)=0.0956 *14*; α(L)=0.01648 *24*; α(M)=0.00388 *6* α(N)=0.000998 *15*; α(O)=0.000209 *3*; α(P)=2.70×10^{-5} *4*
1656.8+x		229.0 *5*	100	1427.8+x					
1696.6	(+)	268.8 *5*	100	1427.8	(17/2$^+$)	(M1)		0.683	α(K)=0.556 *9*; α(L)=0.0973 *15*; α(M)=0.0229 *4* α(N)=0.00591 *9*; α(O)=0.001236 *19*; α(P)=0.0001598 *24*
1716.2		1029.0 *5*	100	687.2	11/2$^+$				
1727.2		1040.0	100	687.2	11/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
1736.0+x		308.1	100	1427.8+x					
1739.6	(+)	296.4	100	1443.1	3/2$^+$,5/2$^+$,7/2$^+$	(M1)		0.522	α(K)=0.425 *6*; α(L)=0.0743 *11*; α(M)=0.01751 *25* α(N)=0.00451 *7*; α(O)=0.000943 *14*; α(P)=0.0001219 *17* E$_\gamma$,I$_\gamma$: From 1981Fa01.
		354.6[ba]	<124[b]	1385.1	(3/2)$^+$	(M1)		0.320	α(K)=0.261 *4*; α(L)=0.0454 *7*; α(M)=0.01070 *15* α(N)=0.00275 *4*; α(O)=0.000576 *8*; α(P)=7.45×10^{-5} *11* E$_\gamma$,I$_\gamma$: From 1981Fa01.
1786.3		358.5 *5*	100	1427.8	(17/2$^+$)				
1798.0		1110.8 *5*	100	687.2	11/2$^+$				
1809.2?		1122.2[c]	≈100	687.2	11/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
1819	(27/2$^+$)	357.3 *5*	100	1462	(25/2$^+$)	(M1)		0.314	α(K)=0.256 *4*; α(L)=0.0445 *7*; α(M)=0.01048 *16* α(N)=0.00270 *4*; α(O)=0.000565 *9*; α(P)=7.30×10^{-5} *11* Mult.: From γ-ray transition intensity balance in ^{208}Pb(^{76}Ge,Xγ).
1852.5		424.7 *5*	100	1427.8	(17/2$^+$)				
1876.9		1189.7	100	687.2	11/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
1902.8+x		475.0 *5*	100	1427.8+x					
1904.3+x		168.3 *5*	100	1736.0+x					
1914.7		486.9 *5*	100	1427.8	(17/2$^+$)				
1939.1+x		511.3 *5*	100	1427.8+x					
1944.3		1257.1 *5*	100	687.2	11/2$^+$				
1978.3+x		550.5 *5*	100	1427.8+x					
1994.9+x		258.9 *5*	46 *8*	1736.0+x					
		567.1 *5*	100 *15*	1427.8+x					
2023.9		973.0	100	1050.9	5/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
2029.5		907.7	100	1121.8	7/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
2034.5		983.6	100	1050.9	5/2$^+$				E$_\gamma$,I$_\gamma$: From 1981Fa01.
2077.1	(+)	462.6	100	1614.5	(5/2$^+$,7/2$^+$)	(M1)		0.1567	α(K)=0.1278 *18*; α(L)=0.0221 *3*; α(M)=0.00520 *8*

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Adopted Levels, Gammas (continued)

γ(^{211}Po) (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[†]	Comments
								α(N)=0.001338 *19*; α(O)=0.000280 *4*; α(P)=3.62×10^{-5} *5* E_γ,I_γ: From 1981Fa01.
2079.0?		1028.4[c]	100	1050.9	5/2$^+$			E_γ,I_γ: From 1981Fa01.
2093.7		665.9 *5*	100	1427.8	(17/2$^+$)			
2094.2	(+)	354.6[ba]	<150[b]	1739.6	(+)	(M1)	0.320	α(K)=0.261 *4*; α(L)=0.0454 *7*; α(M)=0.01070 *15* α(N)=0.00275 *4*; α(O)=0.000576 *8*; α(P)=7.45×10^{-5} *11* E_γ,I_γ: From 1981Fa01.
		651.1	100	1443.1	3/2$^+$,5/2$^+$,7/2$^+$			
2104.3+x		676.5 *5*	100	1427.8+x				
2112.2		669.0	31	1443.1	3/2$^+$,5/2$^+$,7/2$^+$			E_γ,I_γ: From 1981Fa01.
		1061.5	100	1050.9	5/2$^+$			E_γ,I_γ: From 1981Fa01.
2135	(31/2$^-$)	315.4 *5*	11.7 *18*	1819	(27/2$^+$)	(M2)	1.569	α(K)=1.177 *18*; α(L)=0.296 *5*; α(M)=0.0733 *11* α(N)=0.0190 *3*; α(O)=0.00396 *6*; α(P)=0.000497 *8* B(M2)(W.u.)=0.100 *20* Mult.: From γ-ray transition intensity balance in ^{208}Pb(^{76}Ge,Xγ).
		672.7 *5*	100 *3*	1462	(25/2$^+$)	E3	0.0461	α(K)=0.0288 *4*; α(L)=0.01295 *19*; α(M)=0.00333 *5* α(N)=0.000859 *13*; α(O)=0.0001715 *25*; α(P)=1.87×10^{-5} *3* B(E3)(W.u.)=22.5 *23* Mult.: From γ(θ) and γ-ray transition intensity balance in ^{208}Pb(^{9}Be,α2nγ), ^{208}Pb(^{7}Li,p3nγ).
2186.9+x		759.1 *5*	100	1427.8+x				
2218.8		791.0 *5*	100	1427.8	(17/2$^+$)			
2223.6		645.7 *5*	100	1577.9	(1/2)			
2277.9		1227.0 *5*	100	1050.9	5/2$^+$			
2298.0		854.9	100	1443.1	3/2$^+$,5/2$^+$,7/2$^+$			E_γ,I_γ: From 1981Fa01.
2300.2		915.1	100	1385.1	(3/2)$^+$			E_γ,I_γ: From 1981Fa01.
2339.6		896.5 *5*	100	1443.1	3/2$^+$,5/2$^+$,7/2$^+$			
2353.2		925.4 *5*	100	1427.8	(17/2$^+$)			
2431.4		1003.6 *5*	100	1427.8	(17/2$^+$)			
2443.2+x		1015.4 *5*		1427.8+x				
2547.8		969.9	100	1577.9	(1/2)			
2839		704.5 *5*	100	2135	(31/2$^-$)			
2865	(33/2$^-$)	730.9 *5*	100	2135	(31/2$^-$)			
3442	(37/2$^+$)	576.5 *5*	10 *5*	2865	(33/2$^-$)			
		1307.5 *5*	100 *10*	2135	(31/2$^-$)	E3	0.00957 *14*	B(E3)(W.u.)>32 α=0.00957 *14*; α(K)=0.00732 *11*; α(L)=0.001697 *24*; α(M)=0.000414 *6* α(N)=0.0001066 *15*; α(O)=2.19×10^{-5} *3*; α(P)=2.64×10^{-6} *4*; α(IPF)=6.12×10^{-6} *10* Mult.: From γ(θ) and γ-ray transition intensity balance in ^{208}Pb(^{9}Be,α2nγ), ^{208}Pb(^{7}Li,p3nγ).
4364	(37/2$^-$)	921.5 *5*	100 *16*	3442	(37/2$^+$)			

Adopted Levels, Gammas (continued)

$\gamma(^{211}Po)$ (continued)

E_i(level)	J_i^π	E_γ[‡]	I_γ[‡]	E_f	J_f^π	Mult.[#]	α[†]	Comments
4364	(37/2$^-$)	1498.1 *5*	12 *4*	2865	(33/2$^-$)			
4872	(43/2$^+$)	508.6 *5*	100	4364	(37/2$^-$)	[E3]	0.1040	α(K)=0.0533 *8*; α(L)=0.0377 *6*; α(M)=0.00990 *15* α(N)=0.00256 *4*; α(O)=0.000504 *8*; α(P)=5.24×10^{-5} *8* B(E3)(W.u.)=17 *5* Mult.: Expected E3, similar to 686γ, 16$^+$ to 13$^-$ transition in 210Po (1998Fo04).
4911		1469.3 *5*	100	3442	(37/2$^+$)			

† Additional information 2.
‡ From ^{208}Pb(^{9}Be,α2nγ),^{208}Pb(^{7}Li,p3nγ) (1998Mc03), unless otherwise specified.
# From α(K)exp in ^{208}Pb(α,2nγ), unless otherwise noted.
@ From ce data; $\gamma(\theta)$ in ^{208}Pb(α,nγ) (1981Fa01).
& From ce data in ^{208}Pb(α,nγ) (1981Fa01).
a Coincidence data in ^{208}Pb(α,nγ) shows this γ to be a doublet (1981Fa01).
b Multiply placed with undivided intensity.
c Placement of transition in the level scheme is uncertain.

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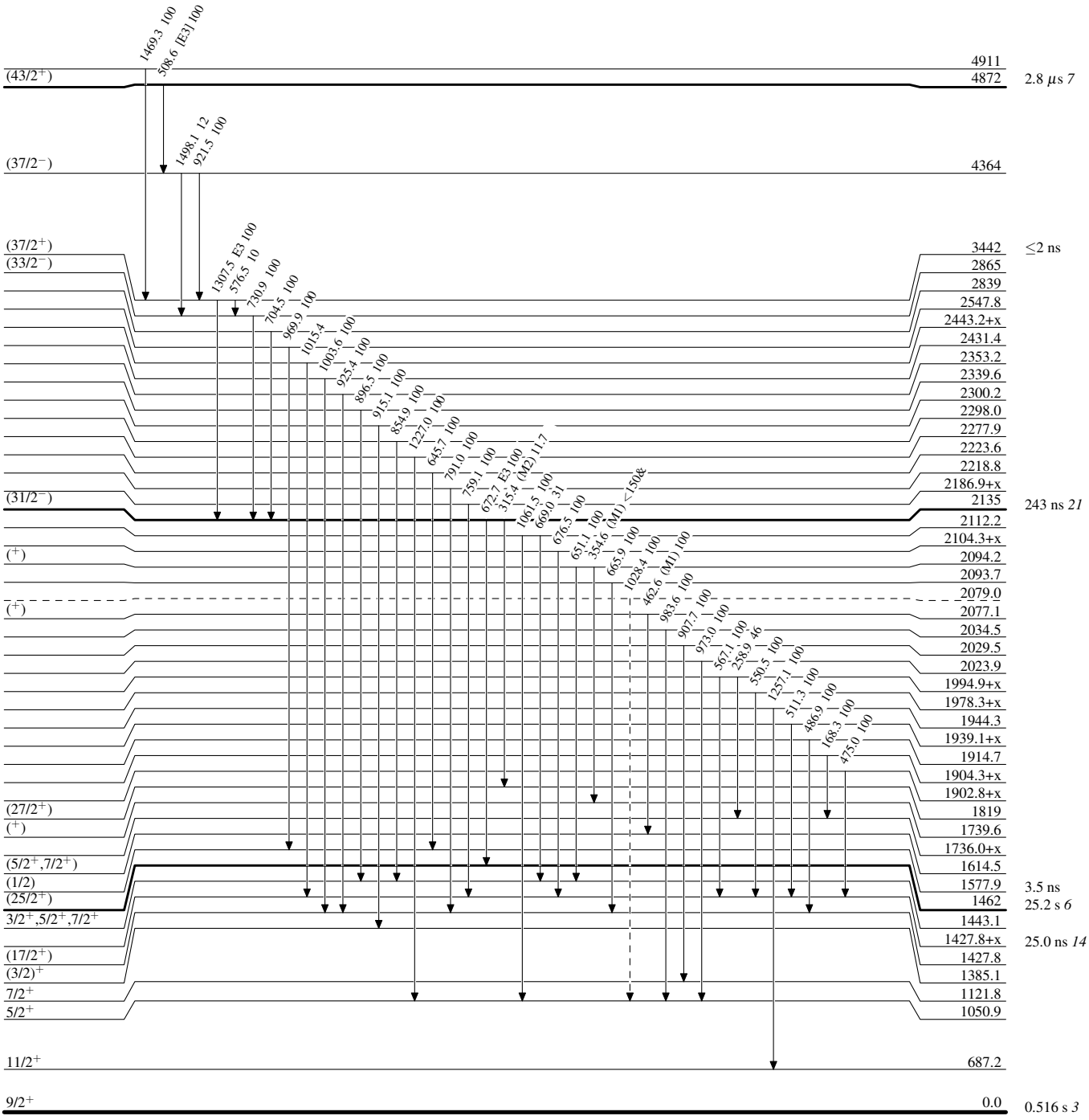
Adopted Levels, Gammas

Legend

Level Scheme

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

γ Decay (Uncertain)



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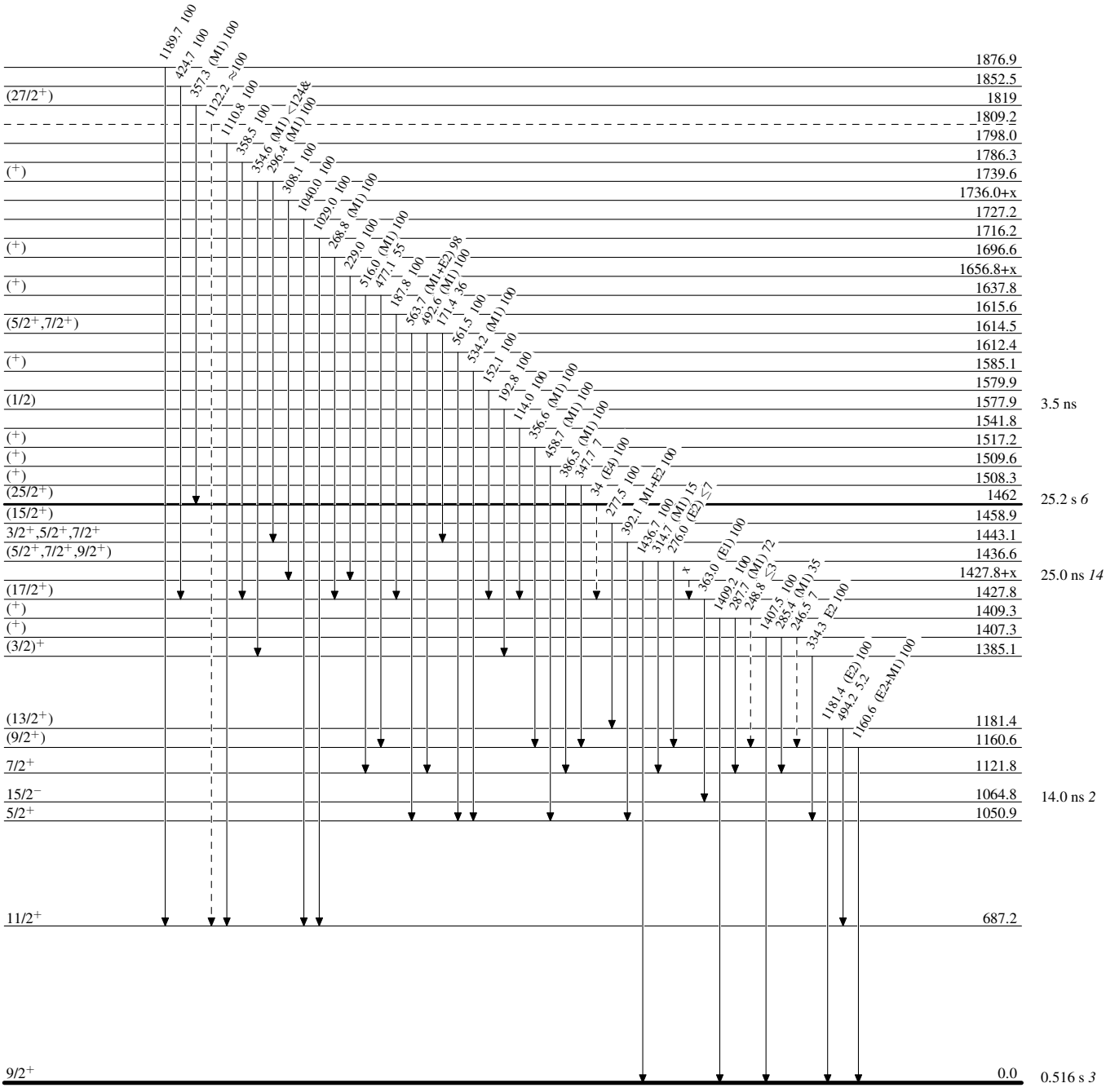
Adopted Levels, Gammas

Legend

Level Scheme (continued)

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

- - - - - - ► γ Decay (Uncertain)



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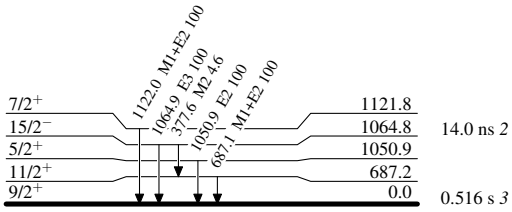
Adopted Levels, Gammas

Level Scheme (continued)

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



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