^{198}Pt(^{18}O,5nγ),^{205}Tl(^{11}B,5nγ) 1993Da10,1981Po08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson, Y. J. Chen, S. Enkhbold, G. Khalil, B. Yang	NDS 114, 661 (2013)	28-Feb-2013

Additional information 1.

^{211}Rn Levels

1993Da10.
Target: Enriched ^{198}Pt. Projectile: ^{18}O, E=96 MeV. Measured Eγ, Iγ, $\gamma\gamma$ coin; $\gamma(\theta)$ at θ=±48°, ±97°, and ±145°; γ(t); conversion electrons. Deduced γ-ray conversion coefficients, angular distribution coefficients (A$_2$), multipolarities; levels J^π, and T$_{1/2}$. Detectors: Compton-suppressed array of γ-ray germanium detectors (CAESAR), and a superconducting electron spectrometer. Others: 1990Dr12, 1990Dr07, 1985Da14, 1985Po13, 1981Dr10, 1981Po08.
1981Po08.
Target: 96.4% enriched ^{205}Tl. Projectile: ^{11}B, E≈70 MeV. Measured Eγ, Iγ, $\gamma\gamma$ coin, $\gamma\gamma$(t), nγ(t), n$\gamma(\theta)$, $\gamma(\theta)$, conversion electrons. Deduced γ-ray conversion coefficients, angular distribution coefficients (A$_2$), multipolarities, levels J^π and T$_{1/2}$. Detectors: Two germanium detectors for γ rays, and an NE213 liquid scintillator detector for neutrons.
Other reactions: ^{204}Hg(^{12}C,5nγ) (1985Po06);
J^π assignments are based on γ-ray multipolarities, excitation functions, angular distribution measurements, and on level half-lives. g-factor values are from $\gamma(\theta$,H,t) measurements of 1985Po06. The level scheme is from 1993Da10. Shell model configurations (given here under comments) are mostly from 1993Da10 and 1981Po08. These assignments are based on shell-model calculations and comparisons with similar levels and de-exciting transitions in the core nuclides ^{210}Rn and ^{212}Rn. Others: 1993Da10, 1985Po06.
Other reactions: ^{204}Hg(^{12}C,5nγ) (1985Po06). ^{198}Pt(^{18}O,5nγ),E=96 MeV (2004Km01; 201-ns isomer observed through 1062-687 cascade).

E(level)[†‡]	J$^\pi$	T$_{1/2}$[#]	Comments
0.0	1/2$^-$		Configuration=((π h$_{9/2}$)$^{+4}_{0+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
539.9 *2*	5/2$^-$	≤4[@] ns	Configuration=((π h$_{9/2}$)$^{+4}_{0+}$(ν f$_{5/2}$)$^{-1}$) (1981Po08,1993Da10).
1458.1 *2*	9/2$^-$		Configuration=((π h$_{9/2}$)$^{+4}_{4+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
1577.7 *2*	13/2$^-$		Configuration=((π h$_{9/2}$)$^{+4}_{6+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
1577.7+x	(17/2$^-$)	596[@] ns *28*	Additional information 2. E(level): x ≤50 keV, based on the nonobservation of photons of mult=E2. J$^\pi$: Assigned as definite in 1993Da10 γ-ray transition (1981Po08). g-factor=+0.912 *9* $\gamma(\theta$,H,t) (1985Po06). Configuration=((π h$_{9/2}$)$^{+4}_{8+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
1698.7+x? *2*	(15/2$^-$)		E(level): or 1993.2+x, if 415.4-120.8 cascade is reversed (1993Da10). Configuration=((π h$_{9/2}$)$^{+4}_{8+}$(ν p$_{1/2}$)$^{-1}$) (?) (1993Da10).
2114.2+x *1*	(19/2$^-$)		Configuration=((π h$_{9/2}$)$^{+4}_{8+}$(ν f$_{5/2}$)$^{-1}$) (1981Po08,1993Da10).
2147.5+x *2*	(21/2$^-$)	≤4[@] ns	Configuration=((π h$_{9/2}$)$^{+4}_{8+}$(ν f$_{5/2}$)$^{-1}$) (1981Po08,1993Da10).
2650.2+x *2*	(23/2$^+$)	6.7 ns *3*	Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{11-}$(ν p$_{1/2}$)$^{-1}$) (1993Da10).
2731.7+x *2*	(25/2$^-$)	<3 ns	Configuration=((π h$_{9/2}$)$^{+4}_{12+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
3117.3+x *2*	(25/2$^+$)		Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{11-}$(ν f$_{5/2}$)$^{-1}$) (1993Da10).
3127.1+x *2*	(25/2$^+$)		Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{10-}$(ν f$_{5/2}$)$^{-1}$) (?) (1993Da10).
3216.3+x *2*	(25/2$^-$)		Configuration=π(h$^3_{9/2}$f$_{7/2}$)$_{12+}\nu$p$^{-1}_{1/2}$ + π(h$^4_{9/2}$)$_{12+}\nu$p$^{-1}_{1/2}$ (1993Da10).
3243.2+x *2*	(29/2$^-$)	2.7 ns *6*	Configuration=((π h$_{9/2}$)$^{+3}$(π f$_{7/2}$)$^{+1}_{14+}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
3426.2+x *2*	(27/2$^+$)		Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{11-}$(ν f$_{5/2}$)$^{-1}$) (1993Da10).
3844.2+x *2*	(31/2$^+$)	<2 ns	Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{15-}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
3873.8+x *3*			
3925.9+x *3*	(35/2$^+$)	40.2[@] ns *14*	Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{17-}$(ν p$_{1/2}$)$^{-1}$) (1981Po08,1993Da10).
4341.0+x? *4*			E(level): or 4058.8+x if 132.7-415.1 γ-ray cascade is reversed.
4417.7+x *3*	(37/2$^+$)		
4473.8+x *3*	(37/2$^+$)		Configuration=((π h$_{9/2}$)$^{+3}$(π i$_{13/2}$)$^{+1}_{17-}$(ν f$_{5/2}$)$^{-1}$) (1993Da10).

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^{198}Pt(^{18}O,5nγ),^{205}Tl(^{11}B,5nγ) 1993Da10,1981Po08 (continued)

^{211}Rn Levels (continued)

E(level)[†‡]	J$^{\pi}$	T$_{1/2}$[#]	Comments
4509.7+x *3*	(37/2$^+$)		Configuration=$((\pi\ h_{9/2})^{+3}(\pi\ i_{13/2})^{+1}_{16-}(\nu\ f_{5/2})^{-1})$ (1993Da10).
4550.4+x *3*			
4920.6+x *3*	(39/2$^+$)		Configuration=$((\pi\ h_{9/2})^{+3}(\pi\ i_{13/2})^{+1}_{17-}(\nu\ f_{5/2})^{-1})$ (1993Da10).
4960.9+x *3*	(37/2)		Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+1}(\pi\ f_{7/2})^{+1}_{17-}(\nu\ f_{5/2})^{-1})$ (?) (1993Da10).
5160.0+x *4*	(41/2)		Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+1}(\pi\ f_{7/2})^{+1}_{18-}(\nu\ f_{5/2})^{-1})$ (1993Da10).
5239.8+x *3*	(39/2$^-$)	≤7[@] ns	Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+2}_{19+}(\nu\ p_{1/2})^{-1})$ (1993Da10).
5245.8+x *3*	(41/2$^-$)	3.5 ns *14*	Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+2}_{20+}(\nu\ p_{1/2})^{-1})$ (1993Da10).
5245.8+y	(43/2$^-$)	14[@] ns *2*	Additional information 3. Configuration=$((\pi\ h_{9/2})^{+3}(\pi\ i_{13/2})^{+1}_{17-}(\nu\ g_{9/2})^{+1}(\nu\ p_{1/2})^{-2}_{0+})$ (1993Da10). T$_{1/2}$: from 1985Po06. g-factor=+0.74 *2*, $\gamma(\theta$,H,t) (1985Po06).
5733.7+y *2*	(45/2$^-$)		Configuration=$((\pi\ h_{9/2})^{+3}(\pi\ i_{13/2})^{+1}_{17-}(\nu\ i_{11/2})^{+1}(\nu\ p_{1/2})^{-2}_{0+})$ (1993Da10).
6100.3+y *2*	(49/2$^+$)	28.4 ns *14*	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\nu(j_{15/2}\ (p^{-2}_{1/2})_{0+}) + \pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(g_{9/2}\ (p^{-2}_{1/2})_{0+})$. (1993Da10). g-factor=+0.766 *8*, $\gamma(\theta$,H,t) (1985Po06).
6577.9+y *2*	(49/2$^-$)		
6713.8+y *2*	(51/2$^+$)		Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+2}_{20+}(\nu\ i_{11/2})^{+1}(\nu\ p_{1/2})^{-2}_{0+})$ (1993Da10).
7003.7+y *2*	(51/2$^+$)		Configuration=$\pi(h^2_{9/2}i_{13/2}f_{7/2})_{18-}\nu(j_{15/2}\ (p^{-2}_{1/2})_{0+})$ (?) (1993Da10).
7398.8+y *2*	(55/2$^-$)	1.5 ns *4*	Configuration=$((\pi\ h_{9/2})^{+2}(\pi\ i_{13/2})^{+2}_{20+}(\nu\ j_{15/2})^{+1}(\nu\ p_{1/2})^{-2}_{0+})$ (1993Da10).
7593.8+y *3*	(53/2$^+$)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(i_{11/2}\ f^{-1}_{5/2}\ p^{-1}_{1/2})$ or configuration=$\pi(h^2_{9/2}i_{13/2}{}^2)_{20+}\nu(g_{9/2}\ f^{-2}_{5/2})$ (?) (?) (1993Da10).
7630.2+y *3*			
8162.1+y *4*			
8167.4+y *3*	(57/2$^+$)	2.3 ns *2*	Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\nu(g_{9/2}i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$. (1993Da10).
8304.2+y *3*	(57/2$^-$)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}\ f^{-1}_{5/2}\ p^{-1}_{1/2})$ or configuration=$\pi(h^2_{9/2}i_{13/2}{}^2)_{20+})\nu(j_{15/2}\ f^{-2}_{5/2})$ (?) (1993Da10).
8328.2+y *2*	(53/2$^-$)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}\ (p^{-2}_{1/2})_{0+})$ or configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+})\ \nu(j_{15/2}f^{-1}_{5/2}p^{-2}_{1/2})$ (?) (1993Da10).
8611.1+y *4*			
8757.9+y *4*			
8854.4+y *4*	(63/2$^-$)	201 ns *4*	Q=1.60 *22* (1985Da14) Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\nu(j_{15/2}\ i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+}) + \pi(h^2_{9/2}i_{13/2}{}^2)_{20+}\nu(g_{9/2}i_{11/2}f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$ (1993Da10). g-factor=+0.626 *7*, $\gamma(\theta$,H,t) (1985Po06). T$_{1/2}$: from 1985Po06. Other: 263 ns *14* (1981Dr10).
8925.7+y *4*			
9147.3+y *4*	(63/2$^-$)		Configuration=$\pi(h^3_{9/2}i_{13/2})_{17-}\nu(j_{15/2}\ i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+}) + \pi(h^2_{9/2}i_{13/2}{}^2)_{20+}\nu(g_{9/2}i_{11/2}f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$ (1993Da10). E(level): 9149.2+y given by authors (1993Da10).
9627.5+y *4*			
9915.3+y *4*	(69/2$^+$)	9.0 ns *7*	Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}\ i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$ (1993Da10). T$_{1/2}$: From 1990Dr12, 1990Dr07.
9918.0+y *4*	(65/2$^+$)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}\ i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$ (1993Da10).
10814.2+y *5*	(69/2$^+$)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}\ i_{11/2}\ f^{-1}_{5/2}(p^{-2}_{1/2})_{0+})$ (1993Da10).
11034.4+y *5*	(71/2)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+} + \nu(j_{15/2}i_{11/2}\ f^{-1}_{5/2}p^{-2}_{1/2})$ or $\nu(j^2_{15/2}f^{-1}_{5/2}p^{-2}_{1/2})$ or $\nu(j_{15/2}i_{11/2}f^{-2}_{5/2}p^{-1}_{1/2})$ (1993Da10).
11081.7+y *5*	(71/2)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+} + \nu(j_{15/2}i_{11/2}\ f^{-1}_{5/2}p^{-2}_{1/2})$ or $\nu(j^2_{15/2}f^{-1}_{5/2}p^{-2}_{1/2})$ or $\nu(j_{15/2}i_{11/2}f^{-2}_{5/2}p^{-1}_{1/2})$ (1993Da10).
11231.9+y *5*	(73/2)		Configuration=$\pi(h^2_{9/2}i^2_{13/2})_{20+}\nu(j_{15/2}$ i11/2 $f^{-2}_{5/2}(p^{-1}_{1/2})$ (1993Da10).

† Additional information 4.
‡ Deduced by evaluator from a least-squares fit to γ-ray energies using an uncertainty of 0.2 keV (given by authors) for all the γ

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^{198}Pt(^{18}O,5nγ),^{205}Tl(^{11}B,5nγ) 1993Da10,1981Po08 (continued)

^{211}Rn Levels (continued)

rays.
From 1985Po13, unless otherwise specified.
@ From 1981Po08.

γ(^{211}Rn)

Others: 1990Dr12, 1985Po13, 1981Dr10, 1981Po08.

γ-ray intensities from ^{205}Tl(^{11}B,5nγ) E=72 MeV (1981Po08)

Eγ	Iγ	Eγ	Iγ
81.7 *2*	5.3 *10*	569.9 *1*	62 *3*
119.6 *1*	21.9 *12*	583.6 *2*	8.7 *12*
325.1 *2*	≈ 11	584.2 *1*	65 *3*
411.0 *2*	8.7 *10*	601.0 *1*	47.8 *24*
466.6 *2*	6.0 *7*	730.2 *1*	7.5 *7*
502.9 *1*	8.7 *10*	854.1 *1*	16.3 *12*
511.5 *1*	≈ 48	918.3 *1*	100 *5*
536.1 *2*	14.7 *14*	1298.6 *2*	5.8 *10*
539.9 *1*	100 *5*	1319.9 *2*	11.5 *12*

E_γ[a]	I_γ[a]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[a]	α[†]	Comments
(y)		5245.8+y	(43/2$^-$)	5245.8+x	(41/2$^-$)			
(6.0)		5245.8+x	(41/2$^-$)	5239.8+x	(39/2$^-$)			
(27.0)		3243.2+x	(29/2$^-$)	3216.3+x	(25/2$^-$)	[E2]	4.56×10^3	
(33.0)		2147.5+x	(21/2$^-$)	2114.2+x	(19/2$^-$)			
(52.0)		3925.9+x	(35/2$^+$)	3873.8+x				
81.7	55 *8*	3925.9+x	(35/2$^+$)	3844.2+x	(31/2$^+$)	E2	20.9 *4*	B(E2)(W.u.)=2.4 *5* Mult.: From RUL and α(exp)>10.5 *17*, deduced from γ-ray transition intensity balance (1981Po08). α(exp)=11.4 *17*, deduced by evaluator from γ-ray transition intensity balance using γ-ray data from 1993Da10.
(92.0)		4509.7+x	(37/2$^+$)	4417.7+x	(37/2$^+$)			
^{x}113.9[@]	1.0 *2*							
(116.0)		3243.2+x	(29/2$^-$)	3127.1+x	(25/2$^+$)	(M2)	60.2	Mult.: Branching deduced from intensity balance and nonobservation of a γ ray suggests mult=M2 or E3, the latter seems unlikely from systematics of E3 transition strengths in this region (1993Da10). However, the B(M2)(W.u.) of 4.1 *12* exceeds RUL of 1.00 by 2 to 3 sigma.
119.6	235 *11*	1577.7	13/2$^-$	1458.1	9/2$^-$	E2	3.88	Mult.: A_2=−0.04 *3* (1993Da10). α(exp)=3.2 *2* deduced by evaluator from γ-ray transition intensity balance. α(exp)=4.3 *4* (1981Po08).
120.8[‡]	1.5[#] *5*	1698.7+x?	(15/2$^-$)	1577.7+x	(17/2$^-$)			
132.7	7[#] *2*	4473.8+x	(37/2$^+$)	4341.0+x?				A_2=+0.020 *19* (1993Da10).
132.8	1.4[#] *6*	4550.4+x		4417.7+x	(37/2$^+$)			
136.1	15[#] *5*	6713.8+y	(51/2$^+$)	6577.9+y	(49/2$^-$)	E1	0.220	Mult.: A_2=−0.20 *9*, α(exp)=0.5 *3* (1993Da10).

γ(^{211}Rn) (continued)

E_γ[a]	I_γ[a]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[a]	δ	α[†]	Comments
146.8[‡]	5[#] *1*	8757.9+y		8611.1+y		E1		0.183	Mult.: A_2=−0.22 *12*, α(exp)=0.2 *5* (or 1.1 *6*) (1993Da10).
150.2[‡]	1.4[#] *3*	11231.9+y	(73/2)	11081.7+y	(71/2)				
[x]169.8[@]	1.2 *3*								
220.2	1.3[#] *4*	11034.4+y	(71/2)	10814.2+y	(69/2$^+$)				
239.4[‡]	13 *1*	5160.0+x	(41/2)	4920.6+x	(39/2$^+$)	D			Mult.: A_2=−0.22 *6* (1993Da10).
278.9	10[#] *2*	5239.8+x	(39/2$^-$)	4960.9+x	(37/2)	D			Mult.: A_2=−0.19 *6* (1993Da10).
282.9[‡]	5[#] *2*	8611.1+y		8328.2+y	(53/2$^-$)	D			Mult.: A_2=−0.35 *11* (1993Da10).
292.6	8[#] *1*	9147.3+y	(63/2$^-$)	8854.4+y	(63/2$^-$)	(M1)		0.640	Mult.: A_2=+0.16 *12*, α(K)exp=0.55 *8* (1993Da10).
308.9	7[#] *2*	3426.2+x	(27/2$^+$)	3117.3+x	(25/2$^+$)	M1		0.551	Mult.: A_2=−0.41 *23*, α(K)exp=0.8 *1* (1993Da10).
325.2	220 *20*	5245.8+x	(41/2$^-$)	4920.6+x	(39/2$^+$)	E1		0.0277	B(E1)(W.u.)=7.E−7 *3* Mult.: A_2=+0.10 *2* (1993Da10). A_2=−0.02 *1*, A_4=−0.02 *2*. α(K)exp≤0.023 (1981Po08).
[x]339.9[@]	2.7 *6*								
366.3	27 *3*	6100.3+y	(49/2$^+$)	5733.7+y	(45/2$^-$)	M2		1.121	B(M2)(W.u.)=0.25 *3* Mult.: A_2=+0.30 *9*; α(K)exp=1.0 *1*, α(L)exp=0.24 *2*, α(M)exp=0.08 *1* (1993Da10).
410.7	20[#] *4*	4960.9+x	(37/2)	4550.4+x					
411.1 *2*	1.4×10^2 *4*	4920.6+x	(39/2$^+$)	4509.7+x	(37/2$^+$)	M1		0.254	Mult.: A_2=−0.07 *5* (1993Da10). A_2=−0.26 *2*, A_4=−0.03 *3*. α(K)exp=0.27 *3* (1981Po08).
415.1	23[#] *5*	4341.0+x?		3925.9+x	(35/2$^+$)				
415.4[‡]	6[#] *3*	2114.2+x	(19/2$^-$)	1698.7+x?	(15/2$^-$)				
418.0	18 *3*	3844.2+x	(31/2$^+$)	3426.2+x	(27/2$^+$)	[E2]		0.0548	B(E2)(W.u.)>0.0076
[x]430.0[@]	3.6 *4*								
467.0	31 *2*	3117.3+x	(25/2$^+$)	2650.2+x	(23/2$^+$)	M1		0.180 *3*	α(K)=0.1460 *21*; α(L)=0.0259 *4*; α(M)=0.00613 *9*; α(N+..)=0.00200 *3* α(N)=0.001596 *23*; α(O)=0.000349 *5*; α(P)=5.11×10^{-5} *8* Mult.: A_2=−0.33 *7* (1993Da10). A_2=−0.79 *4*, A_4=+0.09 *6*. α(K)exp=0.17 *2* (1981Po08).
478.0	30 *2*	6577.9+y	(49/2$^-$)	6100.3+y	(49/2$^+$)	(D+Q)			Mult.: A_2=+0.40 *12* (1993Da10).
487.8	58 *5*	5733.7+y	(45/2$^-$)	5245.8+y	(43/2$^-$)	M1		0.1602	Mult.: A_2=−0.33 *6*, α(K)exp=0.20 *1* (1993Da10).
492.0	8[#] *2*	4417.7+x	(37/2$^+$)	3925.9+x	(35/2$^+$)	[M1]		0.1566	
502.7	47 *3*	2650.2+x	(23/2$^+$)	2147.5+x	(21/2$^-$)	E1		0.01089	B(E1)(W.u.)=2.15×10^{-7} *22* Mult.: A_2=−0.03 *7*, α(K)exp<0.04 (1993Da10). A_2=−0.15 *4*, A_4=0.00 *5*. α(K)exp≤0.023 (1981Po08).
511.5	700 *10*	3243.2+x	(29/2$^-$)	2731.7+x	(25/2$^-$)	E2		0.0333	B(E2)(W.u.)=0.078 *18* Mult.: A_2=+0.16 *2* (1993Da10). A_2=+0.13 *1*, A_4=+0.01 *2*. α(K)exp=0.024 *3* (1981Po08).
531.6	5 *1*	8162.1+y		7630.2+y					
536.3	158 *4*	2114.2+x	(19/2$^-$)	1577.7+x	(17/2$^-$)	(M1+E2)	2.46 *15*	0.0433 *17*	Mult.: A_2=−0.10 *2*, A_4=+0.21 *3* (1981Po08). A_2=+0.02

γ(^{211}Rn) (continued)

E_γ[a]	I_γ[a]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[a]	α[†]	Comments
								5, α(K)exp=0.032 4 (1993Da10). δ: deduced by evaluators from BrIccMixing.
537.1	11 3	8167.4+y	(57/2$^+$)	7630.2+y				
539.9	1000	539.9	5/2$^-$	0.0	1/2$^-$	E2	0.0294	B(E2)(W.u.)>0.040 Mult.: A_2=+0.15 2 (1993Da10). A_2=+0.09 1, A_4=−0.02 1. α(K)exp=0.024 3 (1981Po08).
548.0	47 10	4473.8+x	(37/2$^+$)	3925.9+x	(35/2$^+$)	M1	0.1175	Mult.: A_2=−0.64 7, α(K)exp=0.15 5 (1993Da10).
569.9	709 9	2147.5+x	(21/2$^-$)	1577.7+x	(17/2$^-$)	E2	0.0260	B(E2)(W.u.)>0.031 Mult.: A_2=0.14 2 (1993Da10). A_2=0.28 1, A_4=−0.07 1. α(K)exp=(0.019 2) (1981Po08).
583.7	296[#] 8	4509.7+x	(37/2$^+$)	3925.9+x	(35/2$^+$)	(M1)[&]	0.0994	E_γ,I_γ: from P.M. Davidson′s Masters Thesis, University of Auckland, Australia (1990). This γ ray not listed in 1993Da10.
584.2	709 13	2731.7+x	(25/2$^-$)	2147.5+x	(21/2$^-$)	E2[&]	0.0246	B(E2)(W.u.)>0.036 A_2=+0.19 1, A_4=−0.06 1 (1981Po08).
601.0	674 9	3844.2+x	(31/2$^+$)	3243.2+x	(29/2$^-$)	E1	0.00761	B(E1)(W.u.)>4.2×10^{-7} Mult.: A_2=−0.09 3 (1993Da10). A_2=−0.11 1, A_4=+0.01 2. α(K)exp=0.0053 8 (1981Po08).
613.7	73 1	6713.8+y	(51/2$^+$)	6100.3+y	(49/2$^+$)	M1	0.0871	Mult.: A_2=−0.90 6; α(K)exp=0.11 2, α(L)exp=0.046 9 (1993Da10).
624.7	8[#] 2	4550.4+x		3925.9+x	(35/2$^+$)			
630.6[‡]	38 2	3873.8+x		3243.2+x	(29/2$^-$)			A_2=+0.38 18 (1993Da10).
685.2	40 2	7398.8+y	(55/2$^-$)	6713.8+y	(51/2$^+$)	M2	0.1672	B(M2)(W.u.)=0.59 16 Mult.: A_2=+0.28 13; α(K)exp=0.19 4, α(L)exp=0.07 1 (1993Da10).
687.0	128 4	8854.4+y	(63/2$^-$)	8167.4+y	(57/2$^+$)	E3	0.0488	B(E3)(W.u.)=30.2 6 Mult.: A_2=+0.10 4 (1993Da10).
730.0	120 2	5239.8+x	(39/2$^-$)	4509.7+x	(37/2$^+$)	E1	0.00524	B(E1)(W.u.)>6.4×10^{-8} Mult.: A_2=−0.10 4 (1993Da10). A_2=−0.13 3, A_4=+0.05 4. α(K)exp<0.005 (1981Po08).
^{x}732.2[@]	2.3 5							
758.3	10 2	8925.7+y		8167.4+y	(57/2$^+$)			
768.7	160 3	8167.4+y	(57/2$^+$)	7398.8+y	(55/2$^-$)	(E1)	0.00476	B(E1)(W.u.)=1.70×10^{-7} 16 Mult.: A_2=−0.10 3 (1993Da10).
772.1	11 4	5245.8+x	(41/2$^-$)	4473.8+x	(37/2$^+$)	[M2]	0.1190	B(M2)(W.u.)=0.020 11 E_γ: Eγ=722.1 keV (Table 1), Eγ=772.1 keV (level scheme) (1993Da10).
773.1	7 4	9627.5+y		8854.4+y	(63/2$^-$)			
776.1	11 1	3426.2+x	(27/2$^+$)	2650.2+x	(23/2$^+$)	(E2)	0.01342	Mult.: A_2=+0.12 14, α(K)exp<0.01 (1993Da10).
854.3 2	442 7	6100.3+y	(49/2$^+$)	5245.8+y	(43/2$^-$)	E3	0.0280	B(E3)(W.u.)=42.1 24 Mult.: A_2=+0.21 3 (1993Da10). A_2=+0.40 2, A_4=−0.03 2. α(K)exp=0.0198 18, α(L)exp=0.0059 13 (1981Po08).
880.0 2	22 2	7593.8+y	(53/2$^+$)	6713.8+y	(51/2$^+$)	M1	0.0338	Mult.: A_2=−0.28 13, α(K)exp=0.028 3 (1993Da10).
896.2	6.1[#] 8	10814.2+y	(69/2$^+$)	9918.0+y	(65/2$^+$)	(E2)	0.01006	Mult.: α(K)exp=0.012 3 (1993Da10). The α(K)exp is also consistent with M1+E2, δ=1.8 4.
903.7	54 3	7003.7+y	(51/2$^+$)	6100.3+y	(49/2$^+$)	M1	0.0316	Mult.: A_2=−0.44 7; α(K)exp=0.044 4, α(L)exp=0.008 1 (1993Da10).

γ(^{211}Rn) (continued)

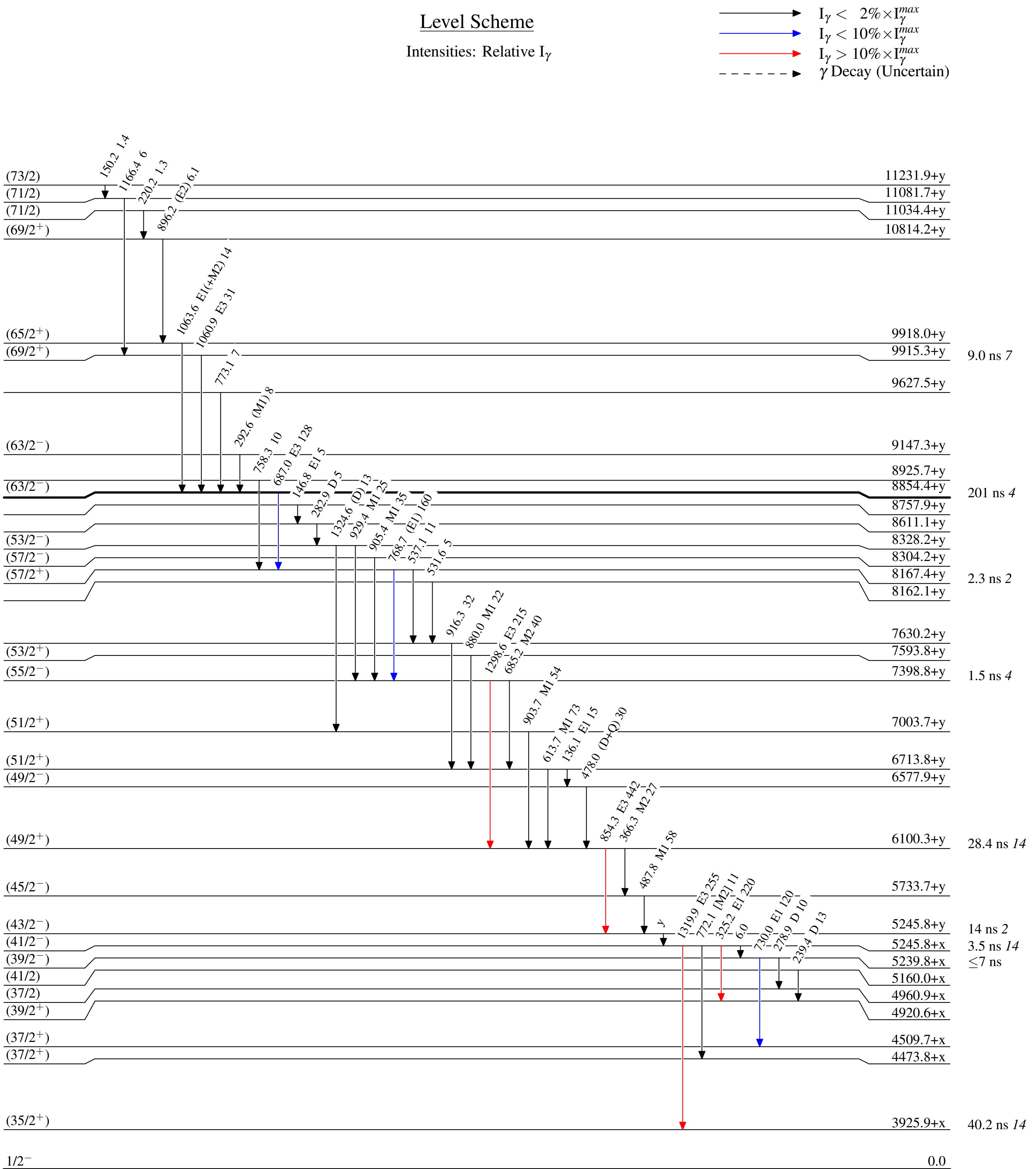
E_γ[a]	I_γ[a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[a]	δ	α[†]	Comments
905.4	35 4	8304.2+y	(57/2$^-$)	7398.8+y	(55/2$^-$)	M1		0.0314	Mult.: A_2=−0.97 10, α(K)exp=0.033 5 (1993Da10).
916.3	32 3	7630.2+y		6713.8+y	(51/2$^+$)				
[x]916.5[@]	3.6 8								
918.3	979 7	1458.1	9/2$^-$	539.9	5/2$^-$	E2		0.00959	Mult.: A_2=+0.10 2 (1993Da10). A_2=+0.10 1, A_4=−0.03 1. α(K)exp=0.0071 3, α(L)exp=0.0016 3 (1981Po08).
929.4	25 1	8328.2+y	(53/2$^-$)	7398.8+y	(55/2$^-$)	M1		0.0294	Mult.: A_2=−0.77 7, α(K)exp=0.032 5 (1993Da10).
[x]952.2[@]	4 1								
979.5	30 1	3127.1+x	(25/2$^+$)	2147.5+x	(21/2$^-$)				
994.7	33 1	4920.6+x	(39/2$^+$)	3925.9+x	(35/2$^+$)	(E2)		0.00821	Mult.: A_2=−0.14 9, α(K)exp=0.0082 6 (1993Da10).
1034.9	10 1	4960.9+x	(37/2)	3925.9+x	(35/2$^+$)	(D)			Mult.: A_2=−0.32 22 (1993Da10).
1060.9	31 1	9915.3+y	(69/2$^+$)	8854.4+y	(63/2$^-$)	E3		0.01691	B(E3)(W.u.)=33 3 Mult.: A_2=+0.45 9; α(K)exp=0.0131 7, α(L)exp=0.0033 3, α(M)exp=0.0011 2 (1993Da10).
1063.6	14 1	9918.0+y	(65/2$^+$)	8854.4+y	(63/2$^-$)	E1(+M2)	0.23 1	0.00498 21	Mult.: A_2=−0.37 18, α(K)exp=0.004 2 (1993Da10). Originally proposed (1993Da10) as pure E1, but both A_2 and εK(exp) are consistent with a small M2 admixture.
1068.9[‡]	38 1	3216.3+x	(25/2$^-$)	2147.5+x	(21/2$^-$)	E2		0.00715	Mult.: A_2=+0.23 8, α(K)exp=0.0063 14 (1993Da10).
1072.6	1.4[#] 5	2650.2+x	(23/2$^+$)	1577.7+x	(17/2$^-$)	[E3]		0.01650	B(E3)(W.u.)=1.2 5
[x]1156.0[@]	3.4 6								
1166.4[‡]	6[#] 4	11081.7+y	(71/2)	9915.3+y	(69/2$^+$)				
1298.6	215 2	7398.8+y	(55/2$^-$)	6100.3+y	(49/2$^+$)	E3		0.01086	B(E3)(W.u.)=40 11 Mult.: A_2=+0.27 3 (1993Da10). A_2=+0.40 4, A_4=−0.04 6. α(K)exp=0.0099 12 (1981Po08).
1319.9	255 2	5245.8+x	(41/2$^-$)	3925.9+x	(35/2$^+$)	E3		0.01049	B(E3)(W.u.)=10 4 Mult.: A_2=+0.23 3 (1993Da10). A_2=+0.48 2, A_4=−0.02 4. α(K)exp=0.0070 11 (1981Po08).
1324.6	13 2	8328.2+y	(53/2$^-$)	7003.7+y	(51/2$^+$)	(D)			Mult.: A_2=−0.58 15, α(K)exp<0.06 (1993Da10).

[†] Additional information 5.
[‡] Placement in the level scheme is uncertain.
[#] From coincidence measurement.
[@] γ ray de-excites a level above the 8854.7+y (290 ns) level. Iγ is from coincidence measurement.
[&] α(K)exp=0.029 3 and α(L)exp=0.0071 12 measured for the 583.7γ + 584.2γ doublet is consistent with 583.7γ (M1) and 584.2γ (E2) (1981Po08).
[a] From ^{198}Pt(^{18}O,5nγ) (1993Da10), unless otherwise specified.
[x] γ ray not placed in level scheme.

^{198}Pt(^{18}O,5nγ),^{205}Tl(^{11}B,5nγ) 1993Da10,1981Po08

Level Scheme

Intensities: Relative I_γ



$^{211}_{86}Rn_{125}$

^{198}Pt(^{18}O,5nγ),^{205}Tl(^{11}B,5nγ) 1993Da10,1981Po08

Level Scheme (continued)

Intensities: Relative I_γ