Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 121, 561 (2014)	31-Mar-2014

Q(β^-)=−6272 *16*; S(n)=8747 *21*; S(p)=4011 *7*; Q(α)=6158.9 *22* 2012Wa38

^{210}Rn Levels

Cross Reference (XREF) Flags

- A ^{210}Fr ε decay (3.18 min)
- B ^{214}Ra α decay (2.46 s)
- C ^{214}Ra α decay (68.6 μs)
- D (HI,xnγ)

E(level)†‡#	J$^\pi$@	T$_{1/2}$†	XREF	Comments
0.0&	0$^+$	2.4 h *1*	ABCD	%α=96 *1*; %ε+%β^+=4 *1* T$_{1/2}$: from 1971Go35. Other values: 2.4 h (1963Uh01), 2.42 h *5* (1968Cr02). Others: 1949Gh16, 1955Mo68, 1971Ho01. From 1955Mo68, 1971Go35.
643.90& *10*	2$^+$		ABCD	J$^\pi$: 644γ E2 to 0$^+$.
1461.60& *14*	(4)$^+$		A CD	J$^\pi$: 818γ E2 to 2$^+$.
1545.10 *14*	(4)$^+$		A D	J$^\pi$: 901γ E2 to 2$^+$, 120γ E2 from (6)$^+$.
1664.70& *15*	(6)$^+$	7.6 ns *7*	A CD	J$^\pi$: 203γ E2 to (4)$^+$. Strong ε feeding from ^{210}Fr (J$^\pi$=6$^+$). T$_{1/2}$: from 1980Po07. Other values: 7.6 ns *14* (1982Po03); 10.4 ns *10* (1985Po13).
x+1664.6& *1*	(8$^+$)	644 ns *40*	CD	μ=7.184 *56*; Q=0.31 *4* XREF: C(1709). Additional information 1. E(level): 1709 *30* (^{214}Ra α decay:68.6 μs). J$^\pi$: energy systematics of J$^\pi$=8$^+$ state in ^{206}Rn, ^{208}Rn, and ^{212}Rn. T$_{1/2}$: weighted average of 631 ns *35* (1982Po03), 750 ns *40* (DPAD) (1981Ma28), 742 ns *35* (1979Po19), and 590 ns *20* (1980Po07). g-factor=0.898 *7* (TDPAD) (1986Po01); g-factor=0.883 *10* (DPAD) (1981Ma28). μ: Differential perturbed angular distribution of γ rays (DPAD) (1986Po01,1989Ra17). Other value: 7.064 *80* (DPAD) (1981Ma28,1989Ra17). Q: Differential perturbed angular distribution of γ rays (DPAD) (1986Be40,1989Ra17).
x+2031.60 *10*	(8$^+$)		D	J$^\pi$: 367γ to (8$^+$).
x+2265.79 *8*	(9)$^+$	<21 ns	D	J$^\pi$: 601γ M1+E2 to (8$^+$).
x+2376.88& *8*	(10)$^+$	<1.4 ns	D	J$^\pi$: 111γ M1 to (9)$^+$, 712γ stretched E2 to (8$^+$). T$_{1/2}$: from 1985Po13.
x+2562.31 *11*	(11)$^-$	64 ns *3*	D	μ=12.16 *11* J$^\pi$: 185γ E1 to (10)$^+$. T$_{1/2}$: weighted average of 64 ns *3* (1982Po03), 58 ns *4* (DPAD) (1981Ma28), 68 ns *4* (1979Po19). g-factor=1.105 *10* (DPAD) (1981Ma28). μ: differential perturbed angular distribution of γ rays (DPAD) (1981Ma28,1989Ra17).
x+2922.63& *12*	(12)$^+$	<1.4 ns	D	J$^\pi$: 546γ E2 to (10)$^+$. T$_{1/2}$: from 1985Po13.
x+3110.05 *13*	(12)$^-$	<5.5 ns	D	J$^\pi$: 547γ M1 to (11)$^-$.
x+3248.06& *13*	(14)$^+$	76 ns *7*	D	μ=14.92 *10* J$^\pi$: 325γ stretched E2 to (12)$^+$. T$_{1/2}$: weighted average of 72 ns *3* (1982Po03), 99 ns *8* (DPAD) (1981Ma28),

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Adopted Levels, Gammas (continued)

^{210}Rn Levels (continued)

E(level)[†‡#]	Jπ[@]	$T_{1/2}$[†]	XREF	Comments
				and 102 ns *18* (1979Po19). g-factor=1.066 *7* (TDPAD) (1986Po01); g-factor=1.043 *20* (DPAD) (1981Ma28). μ: Differential perturbed angular distributions of γ rays (DPAD) (1986Po01,1989Ra17). Other value: 14.60 *28* (DPAD) (1981Ma28).
x+3404.14 *12*	$(13)^-$	<5.5 ns	D	Jπ: 842γ E2 to $(11)^-$, 294γ M1 to $(12)^-$.
x+3782.81 *14*	$(14)^-$		D	Jπ: 378.7γ M1 to $(13)^-$.
x+3812.40[&] *16*	$(17)^-$	1.06 μs *5*	D	μ=17.88 *9*; Q=0.86 *10* Jπ: 564γ E3 to $(14)^+$. $T_{1/2}$: weighted average of 1102 ns *62* (1982Po03), 1000 ns *125* (DPAD) (1981Ma28), and 998 ns *83* (1979Po19). g-factor=1.052 *5* (TDPAD) (1986Po01); g-factor=1.039 *10* (DPAD) (1981Ma28). μ: Differential perturbed angular distribution of γ rays (DPAD) (1986Po01,1989Ra17). Other values: +17.87 *10* (DPAD) (1989Ra17), 17.66 *17* (DPAD) (1981Ma28). Q: Differential perturbed angular distribution of γ rays (DPAD) (1986Be40,1989Ra17).
x+3864.28 *14*	(15^-)	<8 ns	D	Jπ: 616γ (E1) to $(14)^+$.
x+3920.03 *16*	(15^+)	<5.5 ns	D	Jπ: 672γ to $(14)^+$. Expected from shell-model calculation (1982Po03).
x+4351.70 *19*	(17^-)		D	Jπ: 539.3γ M1 to $(17)^-$.
x+4614.20 *19*	(18^-)		D	Jπ: 801.8γ to $(17)^-$.
x+4730.70 *22*	(17^-)		D	Jπ: 379γ to (17^-).
x+4889.13 *19*	(15^+)		D	Jπ: 969γ M1+E2 to (15^+), 1106γ to $(14)^-$.
x+4898.94 *20*	(16^+)	<5.5 ns	D	Jπ: 1086.5γ E1 to $(17)^-$, 1035γ to (15^-).
x+4913.72 *22*	(17^+)		D	
x+4993.43[&] *19*	$(20)^+$	12.3 ns *9*	D	μ=22.3 *1* Jπ: 1181γ E3 to $(17)^-$. $T_{1/2}$: weighted average of 13.2 ns *7* (1985Po13) and 11.4 ns *7* (1982Po03). g-factor=1.116 *5* (TDPAD) (1986Po01). μ: Differential perturbed angular distribution of γ rays (DPAD) (1986Po01,1989Ra17).
x+5046.41 *22*	(17^+)		D	Jπ: 133γ to (17^+).
x+5056.20 *24*	(18^-)		D	Jπ: 325.5γ M1 to (17^-).
x+5162.8 *3*	(19^-)		D	Jπ: 548.6γ to (18^-).
x+5170.8 *3*	(19^-)		D	Jπ: 1358.4γ E2 to $(17)^-$.
x+5253.87 *22*	(17^+)		D	Jπ: 355γ M1 to (16^+).
x+5380.99 *21*	(18^+)	<5.5 ns	D	Jπ: 127.4γ M1 to (17^+).
x+5383.87 *20*	(19^+)	<5.5 ns	D	Jπ: 390γ (M1) to $(20)^+$.
x+5684.64 *21*	(19^+)	<5.5 ns	D	Jπ: 303γ M1+E2 to (18^+), 638.3γ to (17^+).
x+5861.0 *4*	(20^-)		D	Jπ: 690.2γ (M1) to (19^-).
x+5866.33 *20*	$(21)^+$	<5.5 ns	D	Jπ: 872.9γ M1 to $(20)^+$.
x+5876.31[&] *20*	$(20)^+$	<7 ns	D	Jπ: 882.9γ M1 to $(20)^+$, 491,4γ M1 to (19^+).
x+6036.02[&] *21*	$(21)^+$	<7 ns	D	Jπ: 160γ stretched M1 to $(20)^+$.
x+6469.02[&] *21*	$(23)^+$	1.04 μs *7*	D	μ=15.42 *15* Jπ: 433γ, 602.7γ E2 to $(21)^+$. g-factor=0.701 *7* (TDPAD) (1986Po01). μ: Differential perturbed angular distribution of γ rays (DPAD) (1986Po01,1989Ra17).
x+6525.83 *23*	$(22)^+$		D	Jπ: 659.5γ M1 to $(21)^+$.
x+6543.4 *3*	$(21)^+$		D	Jπ: 677.1γ M1 to $(21)^+$.
x+6895.12 *23*	(24^+)	<35 ns	D	Jπ: 426.1γ M1 to $(23)^+$.
x+7035.9 *4*	$(23)^+$		D	Jπ: 566.9γ M1 to $(23)^+$.
x+7224.3 *4*	(23^+)		D	Jπ: 1358γ to $(21)^+$.
x+7311.02[&] *23*	$(26)^-$	34 ns *2*	D	μ=18.33 *22*

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Adopted Levels, Gammas (continued)

^{210}Rn Levels (continued)

E(level)[†‡#]	J$^\pi$[@]	T$_{1/2}$[†]	XREF	Comments
				J$^\pi$: 842γ E3 to (23)$^+$. g-factor=0.733 *9* (TDPAD) (1986Po01). μ: Differential perturbed angular distribution of γ rays (DPAD) (1986Po01,1989Ra17).
x+7329.4 *5*	(24$^+$)		D	J$^\pi$: 293.5γ to (23)$^+$.
x+7379.8 *3*			D	
x+7419.3 *4*	(25$^+$)		D	J$^\pi$: 383.4γ to (23)$^+$.
x+7460.4 *5*	(24$^+$)		D	J$^\pi$: 236.1γ to (23$^+$).
x+7875.13 *25*	(27$^-$)		D	J$^\pi$: 564.2γ to (26)$^-$.
x+7973.4 *3*	(26)$^-$		D	J$^\pi$: 662.4γ M1 to (26)$^-$.
x+7978.6 *4*	(27$^-$)		D	J$^\pi$: 667.6γ to (26)$^-$.
x+8263.3 *5*	(27$^-$)		D	J$^\pi$: 284.7γ to (27$^-$).
x+8556.13[&] *25*	(29)$^+$	1.8 ns *2*	D	J$^\pi$: 1245γ stretched E3 to (26)$^-$. T$_{1/2}$: from 1985Po13.
x+8887.4 *9*			D	
x+8899.1 *4*	(29$^+$)		D	J$^\pi$: 343γ to (29)$^+$.
x+8928.6 *4*	(29$^+$)		D	J$^\pi$: 372.5γ to (29)$^+$.
x+9249.6[&] *3*	(30$^+$)	<0.69 ns	D	J$^\pi$: 693γ to (29)$^+$.
x+9569.3 *3*	(30$^-$)		D	J$^\pi$: 319.7γ to (30$^+$).
x+9735.6 *4*	(31$^-$)		D	J$^\pi$: 166.3γ to (30$^-$).
x+9764.7[&] *3*	(31$^+$)	<0.69 ns	D	J$^\pi$: 515γ (M1) to (30$^+$).
x+10079.9 *3*	(31$^+$)		D	J$^\pi$: 315.2γ to (31$^+$).
x+10086.8[&] *3*	(32$^+$)	<0.69 ns	D	J$^\pi$: 322γ to (31$^+$).
x+10752.1[&] *4*	(34$^+$)	<0.69 ns	D	J$^\pi$: 665.3γ to (32$^+$).
x+10835.6 *6*	(33$^+$)		D	J$^\pi$: 755.7γ to (31$^+$).
x+10975.4 *4*	(34$^+$)		D	J$^\pi$: 888.6γ to (32$^+$).
x+11185.9 *5*	(35$^-$)		D	J$^\pi$: 210.5γ to (34$^+$).
x+11492.3 *7*	(36$^-$)		D	J$^\pi$: 740.2γ to (34$^+$).
x+11978.4 *7*	(36$^-$)		D	J$^\pi$: 792.5γ to (35$^-$).
x+12026.0[&] *5*	(37$^-$)	<0.69 ns	D	J$^\pi$: 1273.9γ E3 to (34$^+$).

[†] From (HI,xnγ).
[‡] From least-squares fit to γ-ray energies.
[#] x ≈ 45, based on the excitation energy 1709 keV *30* in ^{214}Ra α decay (68.6 μs) for the x+1664.5 level. See comments in the Adopted Gamma table for x.
[@] Spin and parity assignments are based on γ-ray multipolarities and $\gamma(\theta)$ measurements in (HI,xnγ), shell model calculations, and systematics of B(E3) values in this mass region (2005Po10, 1982Po03). Specific arguments are given with the individual levels.
[&] Band(A): yrast sequence.

$\gamma(^{210}Rn)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$_f^\pi$	Mult.[†]	α[#]	Comments
643.90	2$^+$	643.9 *1*	100	0.0	0$^+$	E2	0.0198	α(K)=0.01440 *21*; α(L)=0.00409 *6*; α(M)=0.001021 *15* α(N)=0.000266 *4*; α(O)=5.63×10^{-5} *8*; α(P)=7.49×10^{-6} *11*
1461.60	(4)$^+$	817.7 *1*	100	643.90	2$^+$	E2	0.01207	α(K)=0.00918 *13*; α(L)=0.00218 *3*; α(M)=0.000535 *8* α(N)=0.0001392 *20*; α(O)=2.98×10^{-5} *5*; α(P)=4.06×10^{-6} *6*
1545.10	(4)$^+$	901.2 *1*	100	643.90	2$^+$	E2	0.00995	α(K)=0.00768 *11*; α(L)=0.001719 *24*; α(M)=0.000419 *6* α(N)=0.0001090 *16*; α(O)=2.34×10^{-5} *4*; α(P)=3.22×10^{-6} *5*

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Adopted Levels, Gammas (continued)

$\gamma(^{210}Rn)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	δ[@]	α[#]	Comments
1664.70	$(6)^+$	119.6 *1*	7.1 *5*	1545.10	$(4)^+$	E2		3.88	α(K)=0.361 *5*; α(L)=2.60 *4*; α(M)=0.700 *11* α(N)=0.182 *3*; α(O)=0.0368 *6*; α(P)=0.00411 *6* B(E2)(W.u.)=1.58 *19*
		203.1 *1*	100 *1*	1461.60	$(4)^+$	E2		0.495	α(K)=0.1594 *23*; α(L)=0.248 *4*; α(M)=0.0663 *10* α(N)=0.01727 *25*; α(O)=0.00352 *5*; α(P)=0.000405 *6* B(E2)(W.u.)=1.58 *15*
x+1664.6	(8^+)	(x)		1664.70	$(6)^+$				E_γ: γ ray not observed. x ≈ 45 based on level energy 1709 keV *30* in ^{214}Ra α decay:68.6 μs. Highly converted transition. Other:≤50 in 1979Po19, 1982Po03.
x+2031.60	(8^+)	367.0 *1*	100	x+1664.6	(8^+)				
x+2265.79	$(9)^+$	601.2 *1*	100	x+1664.6	(8^+)	M1+E2	−0.20 *5*	0.0893 *19*	α(K)=0.0724 *16*; α(L)=0.01282 *25*; α(M)=0.00304 *6* α(N)=0.000791 *15*; α(O)=0.000173 *4*; α(P)=2.53×10^{-5} *5*
x+2376.88	$(10)^+$	111.1 *1*	2.1 *3*	x+2265.79	$(9)^+$	M1		9.73	α(K)=7.85 *12*; α(L)=1.434 *21*; α(M)=0.341 *5* α(N)=0.0888 *13*; α(O)=0.0194 *3*; α(P)=0.00284 *4*
		712.3 *1*	100.0 *3*	x+1664.6	(8^+)	E2[‡]		0.01602	α(K)=0.01189 *17*; α(L)=0.00311 *5*; α(M)=0.000770 *11* α(N)=0.000201 *3*; α(O)=4.27×10^{-5} *6*; α(P)=5.74×10^{-6} *8*
x+2562.31	$(11)^-$	185.5 *1*	100 *5*	x+2376.88	$(10)^+$	E1		0.1032	B(E1)(W.u.)=3.5×10^{-7} *4* α(K)=0.0826 *12*; α(L)=0.01569 *22*; α(M)=0.00373 *6* α(N)=0.000962 *14*; α(O)=0.000204 *3*; α(P)=2.73×10^{-5} *4*
		897.6 *2*	23 *5*	x+1664.6	(8^+)	(E3)		0.0249	α(K)=0.01717 *24*; α(L)=0.00579 *9*; α(M)=0.001468 *21* α(N)=0.000384 *6*; α(O)=8.14×10^{-5} *12*; α(P)=1.085×10^{-5} *16* B(E3)(W.u.)=2.7 *6*
x+2922.63	$(12)^+$	360.4 *2*	0.3 *1*	x+2562.31	$(11)^-$	E1		0.0220	α(K)=0.0179 *3*; α(L)=0.00312 *5*; α(M)=0.000738 *11* α(N)=0.000191 *3*; α(O)=4.10×10^{-5} *6*; α(P)=5.71×10^{-6} *8*
		545.7 *1*	100 *3*	x+2376.88	$(10)^+$	E2[‡]		0.0287	α(K)=0.0199 *3*; α(L)=0.00661 *10*; α(M)=0.001668 *24* α(N)=0.000434 *6*; α(O)=9.15×10^{-5} *13*; α(P)=1.189×10^{-5} *17*
x+3110.05	$(12)^-$	547.7 *1*	100	x+2562.31	$(11)^-$	M1		0.1177	α(K)=0.0955 *14*; α(L)=0.01685 *24*; α(M)=0.00399 *6*

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Adopted Levels, Gammas (continued)

γ(^{210}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.001039 *15*; α(O)=0.000228 *4*; α(P)=3.33×10^{-5} *5*
x+3248.06	(14)$^+$	325.4 *1*	100	x+2922.63	(12)$^+$	E2[‡]	0.1086	B(E2)(W.u.)=0.0248 *23* α(K)=0.0578 *9*; α(L)=0.0378 *6*; α(M)=0.00987 *14* α(N)=0.00257 *4*; α(O)=0.000531 *8*; α(P)=6.43×10^{-5} *9*
x+3404.14	(13)$^-$	294.1 *1*	35 *8*	x+3110.05	(12)$^-$	M1	0.631	α(K)=0.511 *8*; α(L)=0.0914 *13*; α(M)=0.0217 *3* α(N)=0.00565 *8*; α(O)=0.001237 *18*; α(P)=0.000181 *3*
		841.9 *1*	100 *18*	x+2562.31	(11)$^-$	E2	0.01139	α(K)=0.00870 *13*; α(L)=0.00203 *3*; α(M)=0.000497 *7* α(N)=0.0001292 *18*; α(O)=2.77×10^{-5} *4*; α(P)=3.79×10^{-6} *6*
x+3782.81	(14)$^-$	378.7 *1*	100 *24*	x+3404.14	(13)$^-$	M1	0.316	α(K)=0.256 *4*; α(L)=0.0457 *7*; α(M)=0.01083 *16* α(N)=0.00282 *4*; α(O)=0.000617 *9*; α(P)=9.02×10^{-5} *13*
		672.7 *1*	71 *18*	x+3110.05	(12)$^-$			
x+3812.40	(17)$^-$	564.3 *1*	100	x+3248.06	(14)$^+$	E3	0.0851	B(E3)(W.u.)=22.1 *11* α(K)=0.0454 *7*; α(L)=0.0294 *5*; α(M)=0.00775 *11* α(N)=0.00203 *3*; α(O)=0.000423 *6*; α(P)=5.32×10^{-5} *8*
x+3864.28	(15$^-$)	460.2 *1*	10 *2*	x+3404.14	(13)$^-$			
		616.2 *1*	100 *12*	x+3248.06	(14)$^+$	E1	0.00725	α(K)=0.00596 *9*; α(L)=0.000982 *14*; α(M)=0.000230 *4* α(N)=5.97×10^{-5} *9*; α(O)=1.293×10^{-5} *19*; α(P)=1.84×10^{-6} *3*
x+3920.03	(15$^+$)	672.0 *1*	100	x+3248.06	(14)$^+$			
x+4351.70	(17$^-$)	539.3 *1*	100	x+3812.40	(17)$^-$	M1	0.1226	α(K)=0.0995 *14*; α(L)=0.01756 *25*; α(M)=0.00416 *6* α(N)=0.001083 *16*; α(O)=0.000237 *4*; α(P)=3.47×10^{-5} *5*
x+4614.20	(18$^-$)	801.8 *1*	100	x+3812.40	(17)$^-$	M1	0.0431	α(K)=0.0351 *5*; α(L)=0.00612 *9*; α(M)=0.001448 *21* α(N)=0.000377 *6*; α(O)=8.26×10^{-5} *12*; α(P)=1.208×10^{-5} *17*
x+4730.70	(17$^-$)	379.0 *1*	100	x+4351.70	(17$^-$)			
x+4889.13	(15$^+$)	969.2 *2*	55 *14*	x+3920.03	(15$^+$)	M1+E2	0.017 *9*	α(K)=0.014 *8*; α(L)=0.0026 *12*; α(M)=0.0006 *3* α(N)=0.00016 *7*; α(O)=3.5×10^{-5} *16*; α(P)=5.0×10^{-6} *23*
		1106.2 *2*	100 *23*	x+3782.81	(14)$^-$			
x+4898.94	(16$^+$)	1035.0 *3*	97 *19*	x+3864.28	(15$^-$)			
		1086.5 *2*	100 *19*	x+3812.40	(17)$^-$	E1	0.00254	α(K)=0.00211 *3*; α(L)=0.000332 *5*; α(M)=7.75×10^{-5} *11* α(N)=2.01×10^{-5} *3*; α(O)=4.38×10^{-6} *7*; α(P)=6.33×10^{-7} *9*
x+4993.43	(20)$^+$	1181.0 *1*	100	x+3812.40	(17)$^-$	E3	0.01333	B(E3)(W.u.)=11.6 *9* α(K)=0.00989 *14*; α(L)=0.00259 *4*; α(M)=0.000643 *9* α(N)=0.0001678 *24*; α(O)=3.60×10^{-5} *5*; α(P)=4.94×10^{-6} *7*; α(IPF)=6.95×10^{-7} *10*

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Adopted Levels, Gammas (continued)

$\gamma(^{210}Rn)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
x+5046.41	(17^+)	133.0 *2*	100	x+4913.72	(17^+)			
x+5056.20	(18^-)	325.5 *1*	100	x+4730.70	(17^-)	M1	0.478	α(K)=0.387 *6*; α(L)=0.0691 *10*; α(M)=0.01640 *23* α(N)=0.00427 *6*; α(O)=0.000935 *14*; α(P)=0.0001366 *20*
x+5162.8	(19^-)	548.6 *2*	100	x+4614.20	(18^-)			
x+5170.8	(19^-)	1358.4 *2*	100 *10*	x+3812.40	$(17)^-$	E2	0.00459	α(K)=0.00366 *6*; α(L)=0.000686 *10*; α(M)=0.0001638 *23* α(N)=4.26×10^{-5} *6*; α(O)=9.23×10^{-6} *13*; α(P)=1.313×10^{-6} *19*; α(IPF)=2.49×10^{-5} *4*
x+5253.87	(17^+)	355.0 *1*	100	x+4898.94	(16^+)	M1	0.377	α(K)=0.306 *5*; α(L)=0.0545 *8*; α(M)=0.01292 *19* α(N)=0.00337 *5*; α(O)=0.000737 *11*; α(P)=0.0001076 *15*
x+5380.99	(18^+)	127.4 *2*	16 *4*	x+5253.87	(17^+)	M1	6.59	α(K)=5.32 *8*; α(L)=0.967 *15*; α(M)=0.230 *4* α(N)=0.0599 *9*; α(O)=0.01311 *20*; α(P)=0.00191 *3*
		467.2 *1*	100 *20*	x+4913.72	(17^+)			
		482.0 *1*	52 *8*	x+4898.94	(16^+)			
x+5383.87	(19^+)	390.4 *1*	100	x+4993.43	$(20)^+$	(M1)	0.291	α(K)=0.236 *4*; α(L)=0.0420 *6*; α(M)=0.00996 *14* α(N)=0.00260 *4*; α(O)=0.000568 *8*; α(P)=8.30×10^{-5} *12*
x+5684.64	(19^+)	303.6 *1*	100 *4*	x+5380.99	(18^+)	M1+E2	0.36 *23*	α(K)=0.27 *20*; α(L)=0.066 *18*; α(M)=0.016 *4* α(N)=0.0043 *10*; α(O)=0.00091 *23*; α(P)=0.00012 *5*
		638.3 *1*	24 *3*	x+5046.41	(17^+)			
x+5861.0	(20^-)	690.2 *2*	100	x+5170.8	(19^-)	(M1)	0.0639	α(K)=0.0519 *8*; α(L)=0.00910 *13*; α(M)=0.00215 *3* α(N)=0.000561 *8*; α(O)=0.0001228 *18*; α(P)=1.80×10^{-5} *3* I_γ: weak transition and no intensity is given in (HI,XNG).
x+5866.33	$(21)^+$	872.9 *1*	100	x+4993.43	$(20)^+$	M1	0.0346	α(K)=0.0281 *4*; α(L)=0.00490 *7*; α(M)=0.001157 *17* α(N)=0.000301 *5*; α(O)=6.60×10^{-5} *10*; α(P)=9.66×10^{-6} *14*
x+5876.31	$(20)^+$	191.7 *1*	47 *10*	x+5684.64	(19^+)	M1	2.07	α(K)=1.675 *24*; α(L)=0.302 *5*; α(M)=0.0718 *11* α(N)=0.0187 *3*; α(O)=0.00409 *6*; α(P)=0.000598 *9*
		492.4 *1*	57 *7*	x+5383.87	(19^+)	M1+E2	0.10 *6*	α(K)=0.08 *6*; α(L)=0.016 *7*; α(M)=0.0038 *15* α(N)=0.0010 *4*; α(O)=0.00021 *9*; α(P)=3.0×10^{-5} *14*
		882.9 *2*	100 *9*	x+4993.43	$(20)^+$	M1	0.0336	α(K)=0.0273 *4*; α(L)=0.00475 *7*; α(M)=0.001123 *16* α(N)=0.000292 *4*; α(O)=6.40×10^{-5} *9*; α(P)=9.37×10^{-6} *14*
x+6036.02	$(21)^+$	159.7 *1*	100	x+5876.31	$(20)^+$	M1[‡]	3.47	α(K)=2.80 *4*; α(L)=0.507 *8*; α(M)=0.1204 *17* α(N)=0.0314 *5*; α(O)=0.00687 *10*; α(P)=0.001003 *15*
x+6469.02	$(23)^+$	433.0 *1*	100 *7*	x+6036.02	$(21)^+$	E2[‡]	0.0501	α(K)=0.0316 *5*; α(L)=0.01376 *20*; α(M)=0.00353 *5*

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

γ(^{210}Rn) (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(N)=0.000920 *13*; α(O)=0.000192 *3*; α(P)=2.42×10^{-5} *4*
								B(E2)(W.u.)=0.00043 *5*
x+6469.02	(23)$^+$	602.7 *1*	8 *1*	x+5866.33	(21)$^+$	E2	0.0229	α(K)=0.01635 *23*; α(L)=0.00494 *7*; α(M)=0.001237 *18*
								α(N)=0.000322 *5*; α(O)=6.81×10^{-5} *10*; α(P)=8.97×10^{-6} *13*
								B(E2)(W.u.)=6.5×10^{-6} *11*
x+6525.83	(22)$^+$	659.5 *1*	100	x+5866.33	(21)$^+$	M1	0.0720	α(K)=0.0585 *9*; α(L)=0.01027 *15*; α(M)=0.00243 *4*
								α(N)=0.000633 *9*; α(O)=0.0001385 *20*; α(P)=2.03×10^{-5} *3*
x+6543.4	(21)$^+$	677.1 *2*	100	x+5866.33	(21)$^+$	M1	0.0672	α(K)=0.0546 *8*; α(L)=0.00958 *14*; α(M)=0.00227 *4*
								α(N)=0.000590 *9*; α(O)=0.0001292 *19*; α(P)=1.89×10^{-5} *3*
x+6895.12	(24$^+$)	426.1 *1*	100	x+6469.02	(23)$^+$	M1	0.230	α(K)=0.187 *3*; α(L)=0.0331 *5*; α(M)=0.00785 *11*
								α(N)=0.00205 *3*; α(O)=0.000448 *7*; α(P)=6.54×10^{-5} *10*
x+7035.9	(23)$^+$	566.9 *3*	100	x+6469.02	(23)$^+$	M1	0.1074	α(K)=0.0872 *13*; α(L)=0.01537 *22*; α(M)=0.00364 *6*
								α(N)=0.000948 *14*; α(O)=0.000207 *3*; α(P)=3.03×10^{-5} *5*
x+7224.3	(23$^+$)	1358.0 *3*	100	x+5866.33	(21)$^+$			
x+7311.02	(26)$^-$	415.9 *1*	10 *1*	x+6895.12	(24$^+$)	‡		
		842.0 *1*	100 *13*	x+6469.02	(23)$^+$	E3‡	0.0291	α(K)=0.0196 *3*; α(L)=0.00709 *10*; α(M)=0.00181 *3*
								α(N)=0.000473 *7*; α(O)=0.0001001 *14*; α(P)=1.324×10^{-5} *19*
								B(E3)(W.u.)=40 *8*
x+7329.4	(24$^+$)	293.5 *2*	100	x+7035.9	(23)$^+$			
x+7379.8		854.0 *2*	100	x+6525.83	(22)$^+$			
x+7419.3	(25$^+$)	383.4 *1*	100	x+7035.9	(23)$^+$			
x+7460.4	(24$^+$)	236.1 *2*	100	x+7224.3	(23$^+$)			
x+7875.13	(27$^-$)	564.2 *1*	100	x+7311.02	(26)$^-$			
x+7973.4	(26)$^-$	662.4 *2*	100	x+7311.02	(26)$^-$	M1	0.0712	α(K)=0.0579 *9*; α(L)=0.01015 *15*; α(M)=0.00240 *4*
								α(N)=0.000625 *9*; α(O)=0.0001369 *20*; α(P)=2.00×10^{-5} *3*
x+7978.6	(27$^-$)	667.6 *3*	100	x+7311.02	(26)$^-$			
x+8263.3	(27$^-$)	284.7 *2*	100	x+7978.6	(27$^-$)			
x+8556.13	(29)$^+$	681.4 *2*	16 *4*	x+7875.13	(27$^-$)			
		1245.0 *1*	100 *9*	x+7311.02	(26)$^-$	E3‡	0.01189	α(K)=0.00891 *13*; α(L)=0.00225 *4*; α(M)=0.000555 *8*
								α(N)=0.0001448 *21*; α(O)=3.11×10^{-5} *5*; α(P)=4.29×10^{-6} *6*; α(IPF)=2.71×10^{-6} *4*
								B(E3)(W.u.)=47 *8*
x+8887.4		914.0 *8*	100	x+7973.4	(26)$^-$			
x+8899.1	(29$^+$)	343.0 *2*	100	x+8556.13	(29)$^+$			
x+8928.6	(29$^+$)	372.5 *2*	100	x+8556.13	(29)$^+$			
x+9249.6	(30$^+$)	693.5 *1*	100	x+8556.13	(29)$^+$	M1+E2	0.040 *23*	α(K)=0.032 *20*; α(L)=0.006 *3*; α(M)=0.0015 *7*
								α(N)=0.00038 *17*; α(O)=8.E−5 *4*; α(P)=1.2×10^{-5} *6*

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Adopted Levels, Gammas (continued)

$\gamma(^{210}Rn)$ (continued)

E_i(level)	J_i^π	E_γ[†]	I_γ[†]	E_f	J_f^π	Mult.[†]	α[#]	Comments
x+9569.3	(30^-)	319.7 *1*	100	x+9249.6	(30^+)			
x+9735.6	(31^-)	166.3 *2*	100	x+9569.3	(30^-)			
x+9764.7	(31^+)	515.1 *1*	100	x+9249.6	(30^+)	M1	0.1385	α(K)=0.1124 *16*; α(L)=0.0199 *3*; α(M)=0.00470 *7* α(N)=0.001226 *18*; α(O)=0.000268 *4*; α(P)=3.92×10^{-5} *6*
x+10079.9	(31^+)	315.2 *1*	100	x+9764.7	(31^+)			
x+10086.8	(32^+)	322.1 *1*	100	x+9764.7	(31^+)			
x+10752.1	(34^+)	665.3 *2*	100	x+10086.8	(32^+)			
x+10835.6	(33^+)	755.7 *5*	100	x+10079.9	(31^+)			
x+10975.4	(34^+)	888.6 *2*	100	x+10086.8	(32^+)			
x+11185.9	(35^-)	210.5 *2*	100	x+10975.4	(34^+)			
x+11492.3	(36^-)	740.2 *5*	100	x+10752.1	(34^+)			
x+11978.4	(36^-)	792.5 *5*	100	x+11185.9	(35^-)			
x+12026.0	(37^-)	1273.9 *2*	100	x+10752.1	(34^+)	E3	0.01132	α(K)=0.00851 *12*; α(L)=0.00211 *3*; α(M)=0.000521 *8* α(N)=0.0001359 *19*; α(O)=2.92×10^{-5} *4*; α(P)=4.03×10^{-6} *6*; α(IPF)=4.07×10^{-6} *6*

† From (HI,xnγ). Multipolarities are based on measured α(K)exp, α(L)exp, α(M)exp, etc.

‡ Stretched transition, from $\gamma(\theta)$ (1982Po03).

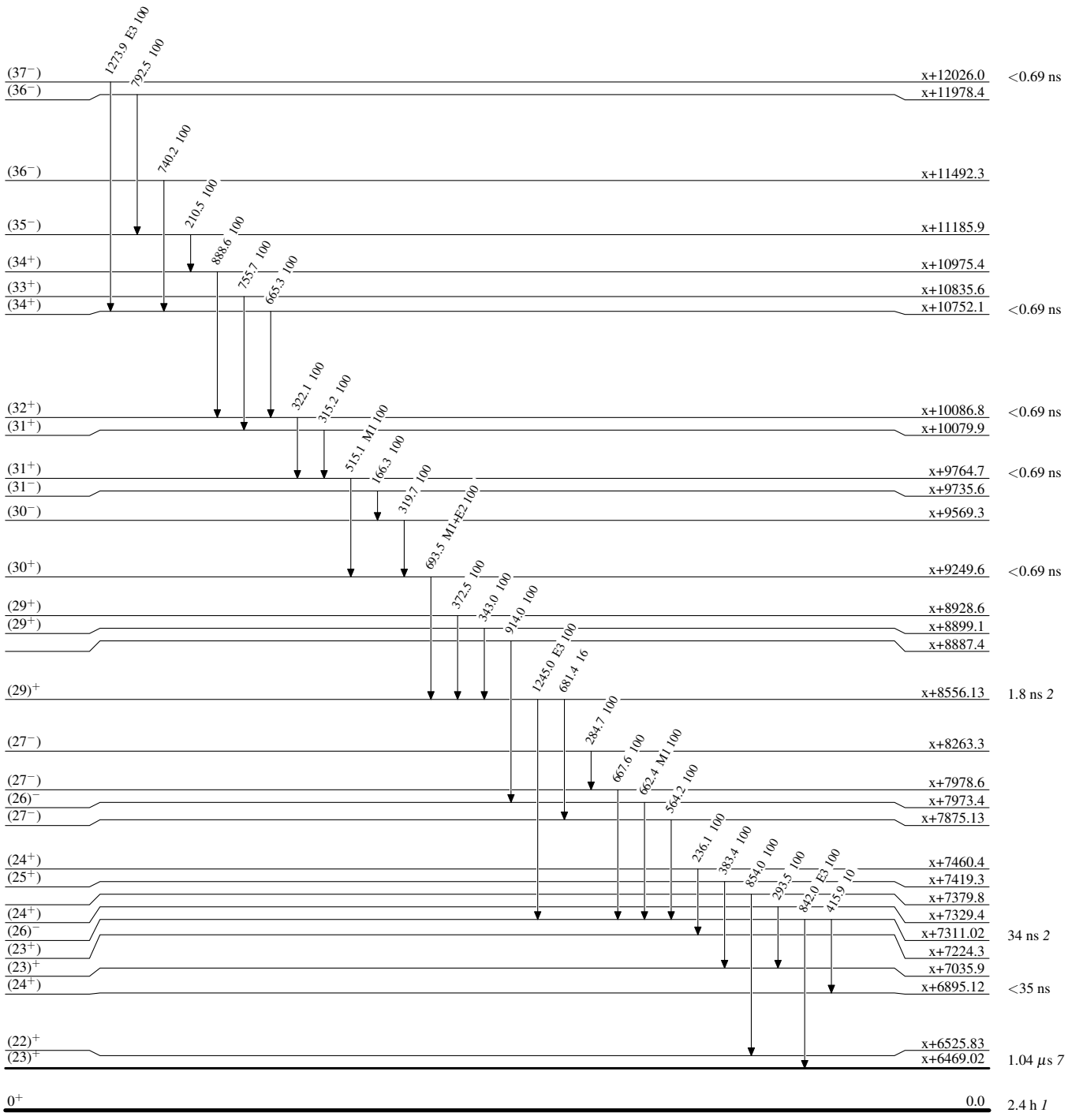
Additional information 2.

@ 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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

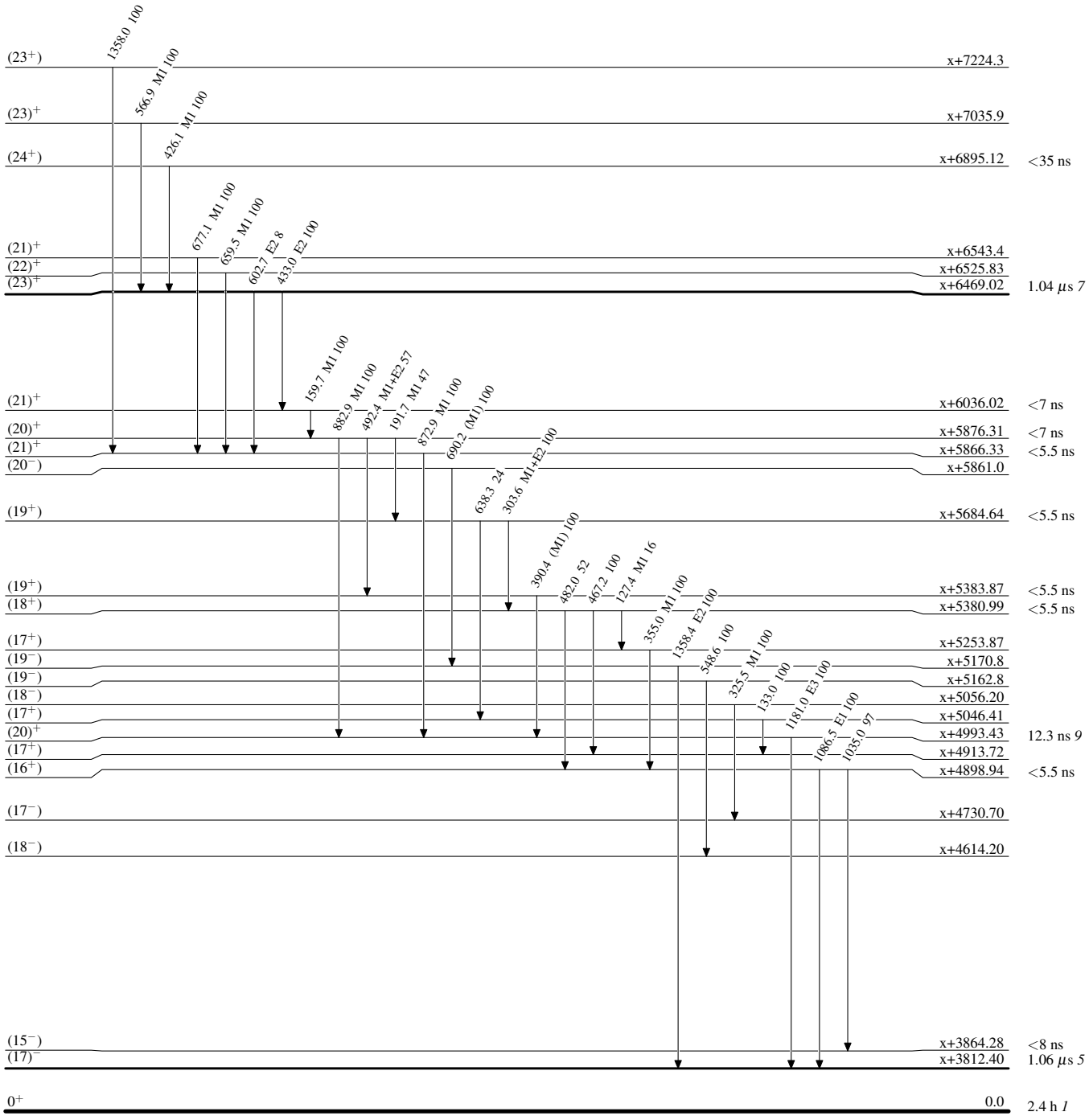


$^{210}_{86}Rn_{124}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{210}_{86}Rn_{124}$

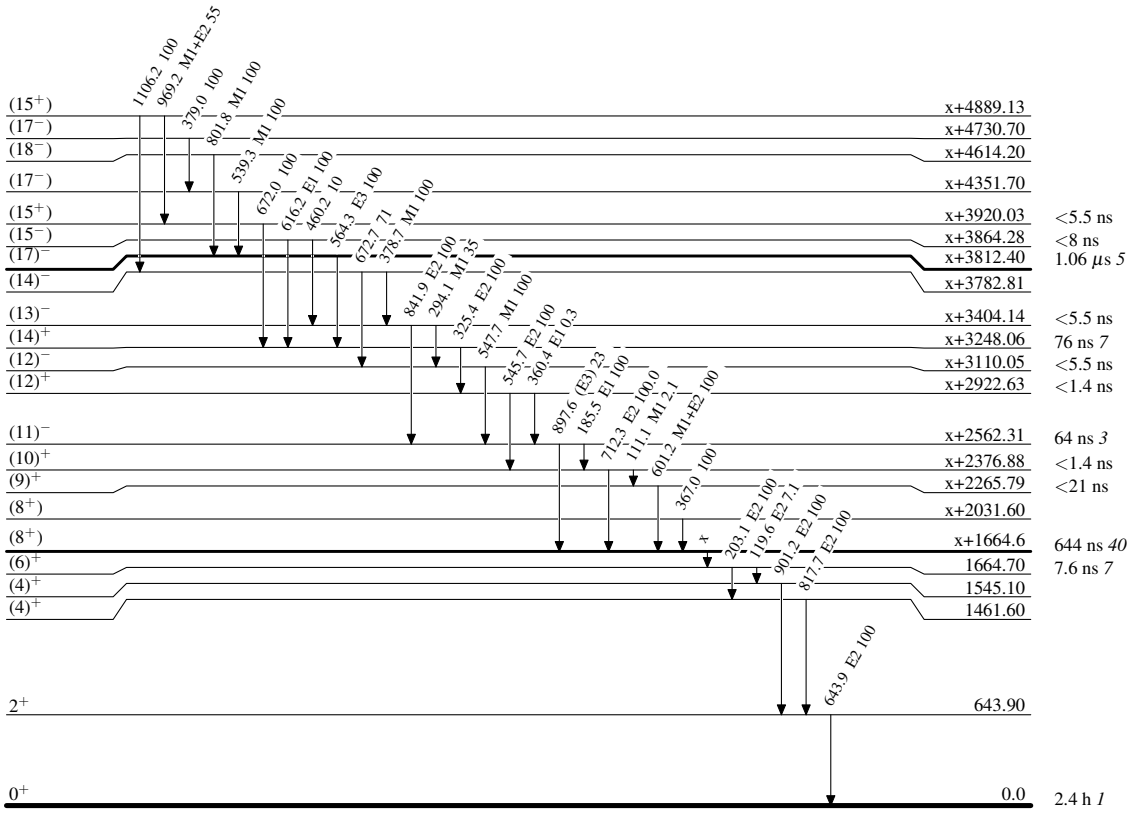
Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



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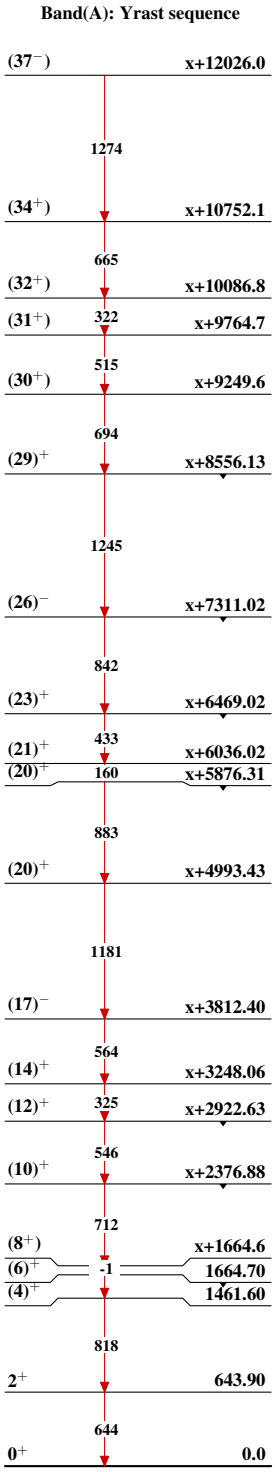
Adopted Levels, Gammas



$^{210}_{86}Rn_{124}$