(HI,xnγ) 1987Dr08,1983Lo01,1981Go06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Shaofei Zhu and E. A. Mccutchan	NDS 175, 1 (2021)	1-May-2021

1987Dr08: ^{208}Pb(^{9}Be,3nγ), E(^{9}Be)=45-57 MeV; measured Eγ, Iγ, I(ce), γ(θ), γ(t), γγ(t). Levels, J^{π} and $T_{1/2}$ by γγ(t) and pulsed beam-γ(t); Compton-suppressed Ge detectors, planar Ge detector for γ's and Si(Li) detector for conversion electrons.
1983Lo01: ^{208}Pb(^{13}C,α3nγ), E(^{13}C)=75-95 MeV; measured Eγ, Iγ, αγ-coin., γγ(t), γ(θ). Levels, J^{π} and $T_{1/2}$ by pulsed beam-γ(t); Ge(Li), Si(Li) detectors.
1981Go06: ^{208}Pb(^{12}C,α2nγ), E(^{12}C)=79 MeV; measured Eγ, Iγ, Eα, Iα, αγ-coin., αγ(t). Levels, J^{π} and $T_{1/2}$ by α-γ(t); ΔE-E, Si-surface barrier and Ge(Li) detector.
α: Additional information 1.

^{214}Rn Levels

E(level)†	Jπ‡	$T_{1/2}$	Comments
0.0	0^{+}#		%α=100
694.7 *10*	2^{+}#	<1.4 ns	$T_{1/2}$: from τ<2 ns (1987Dr08).
1141.2 *15*	4^{+}#	<1.4 ns	$T_{1/2}$: from τ<2 ns (1987Dr08).
1331.7 *15*			
1442.7 *18*	6^{+}#	0.69 ns *21*	%α>0; %IT<100 %α: Eα measured without Iα determined (1981Go06). $T_{1/2}$: from τ=1.0 ns *3* (1987Dr08).
1625.1 *20*	8^{+}#	6.5 ns *17*	%IT=95.7 *10*; %α=4.3 *10* $T_{1/2}$: unweighted average of 7.3 ns *15* (1981Go06); 9 ns *1* (1983Lo01) and 3.3 ns *2* (1987Dr08). %IT,%A$from Iα=I(10630 from 8^{+})/I(9040 from g.s.)=0.043 *7* assuming I(IT from 8^{+})=I(α from g.s.) with additional %15 uncertainty due to side feeding to states below 8^{+} (1981Go06); other: %α≤14% from partial $T_{1/2}$α(8^{+} to 0^{+})≈100 ns and $T_{1/2}$α(8^{+} to 8^{+})≥180 ns with $T_{1/2}$(8^{+})=9 ns *1* (1983Lo01).
1800.5 *18*			
1928.0 *22*	10^{+}@	0.90 ns *21*	$T_{1/2}$: from τ=1.3 ns *3* (1987Dr08); other: 22 ns *5* (1983Lo01). E(level): assigned to be 1787 keV decaying through Eγ=162.0 keV in 1983Lo01. From this level and above the proposed decay scheme was different drastically from 1983Lo01 to 1987Dr08.
1944.9 *23*	(10)		
2028.2 *23*	(10)		
2099.7 *25*			
2208.6 *20*			
2320.5 *25*			
2377.1 *22*			
2394.7 *23*	11^{-}&	<1.4 ns	$T_{1/2}$: from τ<2 ns (1987Dr08).
2504.6 *23*			
2557.1 *24*	(12)		
2648.6 *24*	$(11,12)^{-}$		
2668.2 *25*			
2676.1 *23*	13^{-}*a*	3.7 ns *3*	$T_{1/2}$: from τ=5.4 ns *4*; τ=6.4 ns in the level scheme drawing seems a typo (1987Dr08).
2682.2 *23*			
2689.1 *25*			
2878.2 *23*	12^{+}#	<1.4 ns	$T_{1/2}$: from τ<2 ns (1987Dr08).
2917.1 *25*			
3148.0 *24*	14^{+}#	<1.4 ns	$T_{1/2}$: from τ<2 ns (1987Dr08).
3268.7 *25*	(14^{+})@		
3327.8 *25*	16^{+}#	5.1 ns *3*	$T_{1/2}$: from τ=7.4 ns *4* (1987Dr08). $T_{1/2}$(180γ)=116 ns *15* with different placement in the decay scheme (1983Lo01).

Continued on next page (footnotes at end of table)

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06 (continued)

^{214}Rn Levels (continued)

E(level)[†]	Jπ[‡]	$T_{1/2}$	Comments
3465 *3*	(16$^+$)		
3490 *3*	18$^+$[@]	44 ns *2*	$T_{1/2}$: from τ=63 ns *3* (1987Dr08). $T_{1/2}$(162γ)=22 ns *15* with different placement in the decay scheme (1983Lo01).
3540 *3*			
3579 *3*	18$^-$[&]		
3610.4 *24*	(16$^+$)[@]		
3746 *3*	19$^-$[&]	2.4 ns *3*	$T_{1/2}$: from τ=3.4 ns *4* (1987Dr08).
3753 *3*			
3791 *3*			
3827 *3*	(20)$^-$[*a*]		
3907 *3*			
3941 *3*			
4064 *3*			
4220 *3*			
4250 *4*	(21$^-$)		
4262 *3*			
4517 *4*			
4555 *3*			
4595 *4*	(22$^+$)	260 ns *35*	$T_{1/2}$: from τ=380 ns *50* (1987Dr08); $T_{1/2}$=230 ns *30* with different placement in the decay scheme (1983Lo01).
4751 *4*	(23$^+$)		
4859 *4*			
4977 *4*	(25$^+$)		$T_{1/2}$: no life-time measured in 1987Dr08; while $T_{1/2}$(227γ)=8.0 ns *3* suggesting $T_{1/2}$=8.0 ns *3* for a level differently placed in the decay scheme (1983Lo01).
5051 *4*			

[†] From a least squares fit to adopted Eγ's by evaluators, unless otherwise noted.
[‡] From assignments in 1987Dr08.
[#] Configuration=$(\pi\ h_{9/2})^{+4}(\nu\ g_{9/2})^{+2}$.
[@] Configuration=$(\pi\ h_{9/2})^{+4}(\nu\ g_{9/2})(\nu\ i_{11/2})$.
[&] Configuration=$(\pi\ h_{9/2})^{+3}(\pi\ i_{13/2})(\nu\ g_{9/2})^{+2}$.
[*a*] Configuration=$(\pi\ h_{9/2})^{+4}(\nu\ i_{11/2})(\nu\ j_{15/2})$.

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06 (continued)

γ(^{214}Rn)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
[x]29.7	1.8 *3*							
[x]41	≈1							
45.3	3.6 *4*	3791		3746	19^-			
[x]46	1.1 *4*							
[x]48.5	2.0 *5*							
[x]55.0	≈1							
[x]57.1	1.8 *4*							I_γ: from E(^{9}Be)=45 MeV (1987Dr08).
59		3327.8	16^+	3268.7	(14^+)			E_γ: the observation is not conclusive, inferred from decay scheme (1987Dr08).
81.7	29 *5*	3827	$(20)^-$	3746	19^-	(M1+E2)	13 *8*	α(L)=9 *6*; α(M)=2.5 *17*; α(N)=0.6 *4*; α(O)=0.13 *9*; α(P)=0.015 *9* Mult.: from α(tot)exp=5.6 *10* (1987Dr08).
88.6	20 *1*	3579	18^-	3490	18^+	[E1]	0.1432 *20*	α(L)=0.1088 *15*; α(M)=0.0261 *4*; α(N)=0.00669 *9*; α(O)=0.001386 *19*; α(P)=0.0001745 *24* E_γ: from decay scheme, Eγ=88.1 listed in γ table seems a typo (1987Dr08).
120.6	7.5 *5*	3268.7	(14^+)	3148.0	14^+			
154.8	2 *1*	2099.7		1944.9	(10)			
155.4	8 *2*	4751	(23^+)	4595	(22^+)	(M1)	3.75 *5*	α(K)=3.03 *4*; α(L)=0.548 *8*; α(M)=0.1302 *18*; α(N)=0.0339 *5*; α(O)=0.00743 *10* α(P)=0.001084 *15* E_γ: other: 155.0 (1983Lo01). I_γ: others: 3 *1* with E(^{9}Be)=45 MeV (1987Dr08); ≤10 (1983Lo01). Mult.: on the basis of intensity balance with 226.8γ (1987Dr08); assigned as E1 based on Iγ(θ) and intensity balance referring to a incorrect theoretical α(tot)=8.3 for M1 transition (1983Lo01).
162.2	122 *2*	3490	18^+	3327.8	16^+	E2	1.137 *16*	α(K)=0.2467 *35*; α(L)=0.658 *9*; α(M)=0.1765 *25*; α(N)=0.0460 *6*; α(O)=0.00932 *13* α(P)=0.001057 *15* E_γ: other: 162.0 (1983Lo01). I_γ: others: 46 *1* with E(^{9}Be)=45 MeV (1987Dr08); 44 (1983Lo01). Mult.: α(L)exp=0.58 *6*; A_2=+0.25 *3*; A_4=0.00 *5* (1987Dr08); A_2=+0.02 *3*; A_4=−0.03 *5* (1983Lo01).
167.1	10 *1*	3746	19^-	3579	18^-	[M1+E2]	2.0 *10*	α(K)=1.3 *11*; α(L)=0.51 *7*; α(M)=0.130 *24*; α(N)=0.034 *6*; α(O)=0.0071 *11*; α(P)=0.000905 *27* I_γ: other: 3 *1* with E(^{9}Be)=45 MeV (1987Dr08).
179.8	167 *3*	3327.8	16^+	3148.0	14^+	E2	0.771 *11*	α(K)=0.2037 *29*; α(L)=0.419 *6*; α(M)=0.1122 *16*; α(N)=0.0292 *4*; α(O)=0.00594 *8* α(P)=0.000678 *9* E_γ: other: 180.3 (1983Lo01). I_γ: others: 71 *1* with E(^{9}Be)=45 MeV (1987Dr08); 34 (1983Lo01). Mult.: from α(L)exp=0.46 *2*; A_2=+0.27 *3*; A_4=+0.06 *5* (1987Dr08); A_2=+0.11 *2*; A_4=−0.03 *4* (1983Lo01).
182.4	537 *3*	1625.1	8^+	1442.7	6^+	E2	0.731 *10*	α(K)=0.1981 *28*; α(L)=0.394 *6*; α(M)=0.1054 *15*; α(N)=0.0274 *4*; α(O)=0.00558 *8* α(P)=0.000637 *9*

$^{214}_{86}Rn_{128}$-3

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06 (continued)

γ(^{214}Rn) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								E_γ: other: 182 (1981Go06) and 182.5 (1983Lo01). I_γ: others: 446 *2* with E(^{9}Be)=45 MeV (1987Dr08); 31 (1983Lo01). Mult.: from α(M)exp=0.14 *2*; α(tot)exp=0.7 *1*; A_2=+0.25 *1*; A_4=−0.06 *2* (1987Dr08); A_2=+0.12 *1*; A_4=−0.06 *3* (1983Lo01).
[x]192.8	2.8 *3*							192.8γ might deexcite a possible level at 3682.9 keV to the 3490.1 level as tentatively suggested in 1987Dr08.
202.2	4.7 *4*	2878.2	12^+	2676.1	13^-	[E1]	0.0838 *12*	α(K)=0.0673 *9*; α(L)=0.01261 *18*; α(M)=0.00300 *4*; α(N)=0.000773 *11*; α(O)=0.0001642 *23* α(P)=2.212×10^{-5} *31*
212.2	4.5 *5*	3540		3327.8	16^+			
[x]223.0	1.6 *4*							
226.8	24 *3*	4977	(25^+)	4751	(23^+)	(E2)	0.338 *5*	α(K)=0.1263 *18*; α(L)=0.1565 *22*; α(M)=0.0416 *6*; α(N)=0.01084 *15*; α(O)=0.002213 *31* α(P)=0.000258 *4* E_γ: other: 227.4 (1983Lo01). I_γ: other: 8 *2* with E(^{9}Be)=45 MeV (1987Dr08); 16 (1983Lo01). Mult.: from A_2=+0.16 *4*; A_4=−0.11 *7* (1983Lo01).
229.6	2.5 *5*	2878.2	12^+	2648.6	$(11,12)^-$	[E1]	0.0619 *9*	α(K)=0.0498 *7*; α(L)=0.00917 *13*; α(M)=0.002177 *30*; α(N)=0.000562 *8* α(O)=0.0001197 *17*; α(P)=1.626×10^{-5} *23*
254.0	19 *2*	2648.6	$(11,12)^-$	2394.7	11^-	M1	0.945 *13*	α(K)=0.765 *11*; α(L)=0.1373 *19*; α(M)=0.0326 *5*; α(N)=0.00849 *12*; α(O)=0.001858 *26* α(P)=0.000271 *4* I_γ: other: 26 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from α(K)exp=1.0 *2*; α(L)exp≤0.25; A_2=+0.18 *4*; A_4=+0.06 *6* (1987Dr08).
255.8	146 *3*	3746	19^-	3490	18^+	E1	0.0480 *7*	α(K)=0.0388 *5*; α(L)=0.00703 *10*; α(M)=0.001667 *23*; α(N)=0.000431 *6*; α(O)=9.20×10^{-5} *13* α(P)=1.257×10^{-5} *18* E_γ: other 255.5 (1983Lo01). I_γ: others: 47 *1* with E(^{9}Be)=45 MeV (1987Dr08); 42 (1983Lo01). Mult.: from α(tot)exp<0.3; A_2=−0.26 *2*; A_4=−0.01 *4* (1987Dr08); A_2=−0.13 *3*; A_4=+0.04 *5* (1983Lo01).
[x]261.4	2.0 *8*							
269.9	98 *4*	3148.0	14^+	2878.2	12^+	[E2]	0.1911 *27*	α(K)=0.0867 *12*; α(L)=0.0774 *11*; α(M)=0.02044 *29*; α(N)=0.00532 *7*; α(O)=0.001092 *15* α(P)=0.0001294 *18* E_γ: other: 270.1 (1983Lo01). I_γ: others: 54 *1* with E(^{9}Be)=45 MeV (1987Dr08); ≈20 (1983Lo01). Mult.: from decay scheme (1987Dr08); assigned as E1 based on A_2=−0.04 *2*; A_4=−0.03 *3* (1983Lo01).
281.5	362 *5*	2676.1	13^-	2394.7	11^-	E2	0.1676 *23*	α(K)=0.0791 *11*; α(L)=0.0656 *9*; α(M)=0.01730 *24*; α(N)=0.00450 *6*; α(O)=0.000925 *13* α(P)=0.0001102 *15* E_γ: other: 280.4 (1983Lo01).

$^{214}_{86}Rn_{128}$-4

(HI,xnγ) **1987Dr08,1983Lo01,1981Go06 (continued)**

γ(^{214}Rn) (continued)

E_γ [†]	I_γ [‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
								I_γ: others: 229 *1* with E(^{9}Be)=45 MeV (1987Dr08); 23 (1983Lo01). Mult.: from α(L)exp≤0.11; α(M)exp≤0.06; A_2=+0.23 *1*; A_4=−0.07 *1* (1987Dr08). Other: (E1), from A_2=−0.15 *7*; A_4=−0.01 *13* (1983Lo01).
292.3	2.8 *6*	2320.5		2028.2	(10)			
296.0	3.6 *9*	2504.6		2208.6				
300.2	6 *1*	5051		4751	(23^+)			
301.5	885 *10*	1442.7	6^+	1141.2	4^+	E2	0.1360 *19*	α(K)=0.0682 *10*; α(L)=0.0503 *7*; α(M)=0.01322 *19*; α(N)=0.00344 *5*; α(O)=0.000709 *10* α(P)=8.51×10^{-5} *12* E_γ: others: 302 (1981Go06) and 302.5 (1983Lo01). I_γ: others: 862 *3* with E(^{9}Be)=45 MeV (1987Dr08); ≈65 (1983Lo01). Mult.: from α(K)exp(301.5γ+302.9γ)=0.077 *4*; α(L)exp(301.5γ+302.9γ)=0.055 *3*; α(M)exp(301.5γ+302.9γ)=0.020 *3* with both transitions are of E2 character; A_2=+0.26 *5*; A_4=−0.05 *1* (1987Dr08); A_2=−0.29 *3*; A_4=0.10 *4* (1983Lo01).
302.9	732 *8*	1928.0	10^+	1625.1	8^+	E2	0.1341 *19*	α(K)=0.0675 *9*; α(L)=0.0495 *7*; α(M)=0.01299 *18*; α(N)=0.00338 *5*; α(O)=0.000696 *10* α(P)=8.36×10^{-5} *12* E_γ: other: 300.4 (1983Lo01). I_γ: others: 560 *3* with E(^{9}Be)=45 MeV (1987Dr08); ≈50 (1983Lo01). Mult.: from α(K)exp(301.5γ+302.9γ)=0.077 *4*; α(L)exp(301.5γ+302.9γ)=0.055 *3*; α(M)exp(301.5γ+302.9γ)=0.020 *3* with both transitions are of E2 character; A_2=+0.22 *1*; A_4=−0.08 *1* (1987Dr08); A_2=+0.29 *3*; A_4=+0.10 *4* (1983Lo01).
305.1	9 *2*	2682.2		2377.1				I_γ: from data of E(^{9}Be)=48 MeV (1987Dr08).
317.3	12 *2*	3465	(16^+)	3148.0	14^+	(Q)		I_γ: other: 10 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.58 *10* (1987Dr08).
318.3	9 *1*	4064		3746	19^-	(D)		Mult.: from Iγ(θ) (1987Dr08).
319.8	24 *2*	1944.9	(10)	1625.1	8^+	(Q)		I_γ: other: 30 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.10 *3*; A_4=−0.01 *5* (1987Dr08).
[x]320.0	1.9 *5*							
341.3	1.9 *3*	4859		4517				
355.0	2.1 *6*	4262		3907				
403.1	20 *3*	2028.2	(10)	1625.1	8^+	(Q)		I_γ: other: 32 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.25 *4*; A_4=−0.07 *6* (1987Dr08).
417.1	18 *2*	3907		3490	18^+			I_γ: other: 6 *2* with E(^{9}Be)=45 MeV (1987Dr08).
422.6	12 *3*	4250	(21^-)	3827	$(20)^-$	(D)		Mult.: from Iγ(θ) (1987Dr08).
425.4	29 *2*	3753		3327.8	16^+			I_γ: other: 33 *8* with E(^{9}Be)=45 MeV (1987Dr08).
446.5	963 *10*	1141.2	4^+	694.7	2^+	E2	0.0463 *6*	α(K)=0.0297 *4*; α(L)=0.01243 *17*; α(M)=0.00318 *4*; α(N)=0.000829 *12*; α(O)=0.0001732 *24* α(P)=2.190×10^{-5} *31* E_γ: others: 446 (1981Go06) and 446.0 (1983Lo01). I_γ: others: 928 *6* with E(^{9}Be)=45 MeV (1987Dr08); 79 (1983Lo01). Mult.: from α(K)exp=0.029 *2*; α(L)exp=0.011 *1*; α(M)exp=0.0032 *5*; A_2=+0.19 *2*; A_4=−0.06 *2* (1987Dr08); A_2=+0.09 *3*; A_4=−0.03 *6* (1983Lo01).
449.2	12 *2*	2377.1		1928.0	10^+			

$^{214}_{86}Rn_{128}$-5

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06 (continued)

γ(^{214}Rn) (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α	Comments
462.4	22 *4*	3610.4	(16$^+$)	3148.0	14$^+$				
466.7	483 *8*	2394.7	11$^-$	1928.0	10$^+$	E1+M2	0.147 *+13−14*	0.0235 *20*	α(K)=0.0186 *15*; α(L)=0.00369 *35*; α(M)=0.00089 *9*; α(N)=0.000232 *23*; α(O)=5.0×10^{-5} *5* α(P)=7.2×10^{-6} *7* E_γ: other: 465.8 (1983Lo01). I_γ: others: 367 *2* with E(^{9}Be)=45 MeV (1987Dr08); 42 (1983Lo01). Mult.,δ: from α(K)exp=0.0163 *15*; α(L)exp=0.008 *1*; A_2=−0.26 *1*; A_4=−0.01 *1* (1987Dr08); A_2=−0.19 *5*; A_4=+0.25 *7* (1983Lo01).
468.8		1800.5		1331.7					
471.9	334 *6*	3148.0	14$^+$	2676.1	13$^-$	E1+M2	0.13 *+2−3*	0.0206 *33*	α(K)=0.0164 *25*; α(L)=0.0032 *6*; α(M)=0.00076 *15*; α(N)=0.00020 *4*; α(O)=4.3×10^{-5} *8* α(P)=6.1×10^{-6} *12* E_γ: other: 471.1 (1983Lo01). I_γ: others: 225 *1* with E(^{9}Be)=45 MeV (1987Dr08); 48 (1983Lo01). Mult.,δ: from α(K)exp=0.0150 *22*; α(L)exp=0.008 *2*; A_2=−0.24 *1*; A_4=+0.01 *1* (1987Dr08); A_2=−0.15 *6*; A_4=+0.16 *10* (1983Lo01).
474.6	9 *2*	4220		3746	19$^-$				
475.5	20 *3*	3941		3465	(16$^+$)				I_γ: from data of E(^{9}Be)=45 MeV (1987Dr08).
483.4	1.1 *3*	2878.2	12$^+$	2394.7	11$^-$	[E1]		0.01180 *17*	α(K)=0.00966 *14*; α(L)=0.001629 *23*; α(M)=0.000383 *5*; α(N)=9.93×10^{-5} *14* α(O)=2.143×10^{-5} *30*; α(P)=3.02×10^{-6} *4*
522.4	15 *1*	2917.1		2394.7	11$^-$				I_γ: other: 17 *4* with E(^{9}Be)=45 MeV (1987Dr08).
x563.4	9 *1*								I_γ: other: 21 *1* with E(^{9}Be)=45 MeV (1987Dr08).
x583.4	8 *1*								E_γ: observation is inconclusive (1987Dr08).
x616.4	11 *1*								616.4γ might feed the 2676.2 level from a level at 3292.6 keV as tentatively suggested in 1987Dr08.
629.1	15 *3*	2557.1	(12)	1928.0	10$^+$	(Q)			I_γ: other: 22 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.35 *9*; A_4=−0.11 *13* (1987Dr08).
637.0	7 *1*	1331.7		694.7	2$^+$				I_γ: other: 25 *1* with E(^{9}Be)=45 MeV (1987Dr08). A_2=−0.05 *6* (1987Dr08).
694.7	1000	694.7	2$^+$	0.0	0$^+$	E2		0.01688 *24*	α(K)=0.01246 *17*; α(L)=0.00333 *5*; α(M)=0.000825 *12*; α(N)=0.0002148 *30* α(O)=4.57×10^{-5} *6*; α(P)=6.12×10^{-6} *9* E_γ: others: 696 (1981Go06) and 693.6 (1983Lo01). I_γ: others: 1000 with E(^{9}Be)=45 MeV (1987Dr08); 100 (1983Lo01). Mult.: from α(K)exp=0.0125 *9*; α(L)exp=0.0031 *2*; α(M)exp=0.00104 *2*; A_2=+0.18 *1*; A_4=−0.05 *2* (1987Dr08); A_2=+0.29 *6*; A_4=−0.09 *9* (1983Lo01).
x722.8	5 *1*								722.8γ might feed the 3490.1 level from a level at 4212.9 keV as tentatively suggested in 1987Dr08.

$^{214}_{86}Rn_{128}$-6

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06 (continued)

γ(^{214}Rn) (continued)

E_γ †	I_γ ‡	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α	Comments
723.3	5 *2*	2668.2		1944.9	(10)			
726.3	17 *2*	4517		3791		(D)		Mult.: from Iγ(θ) (1987Dr08).
744.2	12 *3*	2689.1		1944.9	(10)			I_γ: other: 16 *1* with E(^{9}Be)=45 MeV (1987Dr08).
748.2	19 *2*	2676.1	13^-	1928.0	10^+	(E3)	0.0391 *5*	α(K)=0.02498 *35*; α(L)=0.01049 *15*; α(M)=0.00270 *4*; α(N)=0.000707 *10* α(O)=0.0001490 *21*; α(P)=1.942×10^{-5} *27* I_γ: other: 13 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.47 *10*; A_4=+0.05 *15* (1987Dr08).
[x]748.5	≈2							E_γ: observation is inconclusive (1987Dr08).
752.0	20 *2*	2377.1		1625.1	8^+	(Q)		I_γ: other: 27 *1* with E(^{9}Be)=45 MeV (1987Dr08). Mult.: from A_2=+0.25 *4*; A_4=+0.01 *7* (1987Dr08).
[x]753.2	4 *1*							753.2γ might deexcite the 14^+ state at 3148.1 keV to the 11^- state at 2394.7 keV as tentatively suggested in 1987Dr08. E_γ: observation is inconclusive (1987Dr08). I_γ: other: 4 *1* with E(^{9}Be)=45 MeV (1987Dr08).
754.2	12 *2*	2682.2		1928.0	10^+			I_γ: from data of E(^{9}Be)=45 MeV (1987Dr08).
765.9	15 *2*	2208.6		1442.7	6^+			I_γ: other: 12 *1* with E(^{9}Be)=45 MeV (1987Dr08). A_2=+0.04 *10* (1987Dr08).
767.7	62 *4*	4595	(22^+)	3827	$(20)^-$	(M2)	0.1209 *17*	α(K)=0.0950 *13*; α(L)=0.01960 *27*; α(M)=0.00475 *7*; α(N)=0.001242 *17*; α(O)=0.000271 *4* α(P)=3.93×10^{-5} *6* E_γ: other: 768.9 (1983Lo01). I_γ: others: 10 *3* with E(^{9}Be)=45 MeV (1987Dr08); 29 (1983Lo01). Mult.: from α(K)exp=0.11 *2*; α(L)exp=0.025 *4* with K conversion line contaminated by a transition in ^{213}Rn (1987Dr08); assigned as E3 based on A_2=+0.18 *6*; A_4=−0.01 *10* (1983Lo01).
[x]769.9	3 *1*							E_γ: observation is inconclusive (1987Dr08).
808.9	6 *1*	4555		3746	19^-			
[x]817.7								E_γ: observation is inconclusive (1987Dr08).
934.3	6 *2*	3610.4	(16^+)	2676.1	13^-			
950.1	141 *5*	2878.2	12^+	1928.0	10^+	E2	0.00897 *13*	α(K)=0.00697 *10*; α(L)=0.001516 *21*; α(M)=0.000368 *5*; α(N)=9.58×10^{-5} *13* α(O)=2.059×10^{-5} *29*; α(P)=2.85×10^{-6} *4* E_γ: other: 947.1 (1983Lo01). I_γ: others: 104 *1* with E(^{9}Be)=45 MeV (1987Dr08); 24 (1983Lo01). Mult.: from α(K)exp=0.008 *1*; A_2=+0.25 *2*; A_4=−0.90 *4* (1987Dr08).
[x]954.3	7 *2*							

† From 1987Dr08. Uncertainties on Eγ′s are not given in 1987Dr08. ΔE=0.1-0.2 keV for the strongest gammas and ΔE=0.2-0.5 keV for all other gammas is estimated by the evaluator.

‡ From data in ^{208}Pb(^{9}Be,3nγ) reaction at E(^{9}Be)=48 MeV (1987Dr08), unless otherwise noted.

[x] γ ray not placed in level scheme.

$^{214}_{86}Rn_{128}$-7

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06

Level Scheme

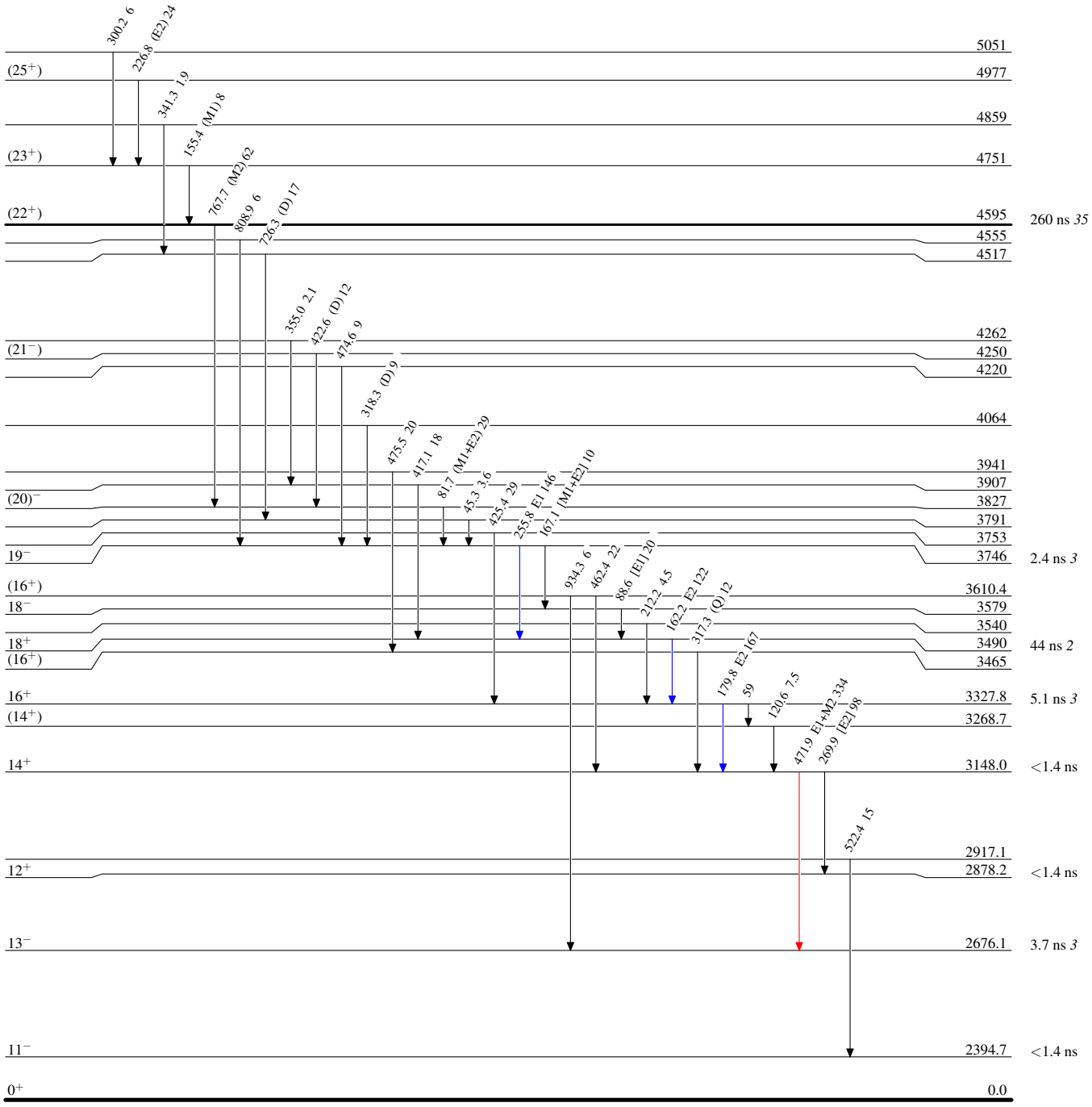
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$

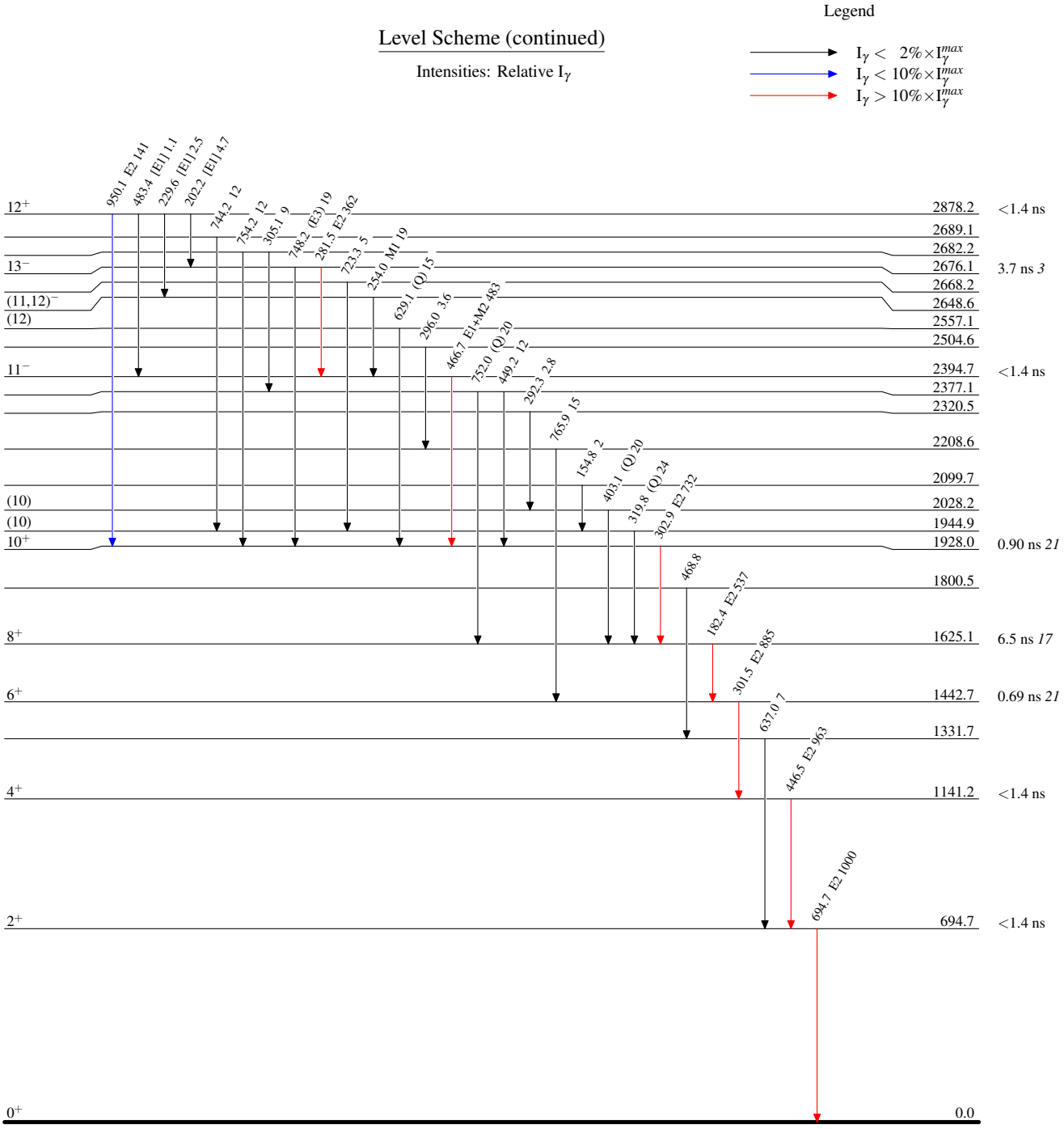


$^{214}_{86}Rn_{128}$

(HI,xnγ) 1987Dr08,1983Lo01,1981Go06

Level Scheme (continued)

Intensities: Relative I_γ



$^{214}_{86}Rn_{128}$