^{198}Pt(α,4nγ) 1985Ko13,1977Gu05,1974Pr13

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong and Kang Mengxiao	NDS 133, 221 (2016)	1-Dec-2015

1985Ko13: E=50 MeV; measured Eγ, Iγ, $\gamma(\theta)$, I(ce), γce-coin.
1977Gu05: E=28-48 MeV; measured Eγ, Iγ, $\alpha\gamma$(t), and $\gamma(\theta)$ with Ge(Li) and iron-free orange-type β spectrometer.
1974Pr13: E=34-50 MeV; measured Eγ, Iγ, σ(Eγ,θ), $\gamma\gamma(\theta)$, and $\gamma\gamma$(t) with Ge(Li).

^{198}Hg Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$[#]	Comments
0.0[@]	0$^+$		
411.80[@] *20*	2$^+$		
1048.4[@] *3*	4$^+$		
1635.6[&] *4*	5$^-$		
1683.1[&] *5*	7$^-$		
1815.7[@] *4*	6$^+$		
1910.6[&] *5*	9$^-$	0.28 ns *5*	
2337.3[@] *4*	8$^+$		
2434.7[@] *5*	10$^+$	1.91 ns *8*	T$_{1/2}$: Weighted average of 1.85 ns *16* ($\alpha\gamma$(t),1977Gu05) and 1.94 ns *10* (cece(t),1985Ko13).
2466.7[&] *5*	11$^-$		
2577.9[@] *5*	12$^+$	1.38 ns *4*	
2925.8[@] *6*	14$^+$	<120 ps	
3325.3[&] *6*	13$^-$		
3485.8[@] *6*	16$^+$		
4262.3[@] *6*	18$^+$		
4302?[&]	(15$^-$)		
4635?[&]	(17$^-$)		
5284.1[@] *8*	(20$^+$)		

[†] From level scheme and Eγ's by using least-squares fit to Eγ values.
[‡] From cascades of stretched E2 γ's and band structure.
[#] From $\alpha\gamma$(t) measurements (1977Gu05), except as noted.
[@] Band(A): ground-state rotational band.
[&] Band(B): negative-parity band.

γ(^{198}Hg)

E$_\gamma$[†]	I$_\gamma$[‡]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[#]	α[&]	Comments
48		1683.1	7$^-$	1635.6	5$^-$	E2[@]	166.2	α(L)=124.5 *18*; α(M)=32.4 *5*; α(N+..)=9.33 *13*
97.3 *2*	6.0	2434.7	10$^+$	2337.3	8$^+$	E2	6.32 *11*	α(K)=0.624 *9*; α(L)=4.19 *8*; α(M)=1.095 *19*; α(N+..)=0.317 *6* B(E2)↓=2494 *228* (1985Ko13) $\gamma(\theta)$: A$_2$=+0.26 *4*, A$_4$=+0.04 *5* (1977Gu05).
143.2 *2*	23	2577.9	12$^+$	2434.7	10$^+$	E2	1.33	α(K)=0.363 *6*; α(L)=0.711 *11*; α(M)=0.185 *3*; α(N+..)=0.0537 *9* B(E2)↓=2909 *99* (1985Ko13) $\gamma(\theta)$: A$_2$=+0.31 *2*, A$_4$=−0.07 *3* (1977Gu05).

Continued on next page (footnotes at end of table)

^{198}Pt(α,4nγ) 1985Ko13,1977Gu05,1974Pr13 (continued)

$\gamma(^{198}Hg)$ (continued)

E_γ[†]	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[&]	Comments
227.5 *2*	40	1910.6	9^-	1683.1	7^-	E2	0.254	α(K)=0.1239 *18*; α(L)=0.0972 *14*; α(M)=0.0250 *4*; α(N+..)=0.00728 *11* $\gamma(\theta)$: A_2=+0.29 *5*, A_4=−0.08 *5* (1977Gu05).
333.5[a] *5*	4.6	4635?	(17^-)	4302?	(15^-)			
347.9 *2*	36	2925.8	14^+	2577.9	12^+	E2	0.0701	α(K)=0.0443 *7*; α(L)=0.0189 *3*; α(M)=0.00476 *7*; α(N+..)=0.001399 *20* $\gamma(\theta)$: A_2=+0.30 *3*, A_4=−0.11 *3* (1977Gu05).
411.8 *2*	100	411.80	2^+	0.0	0^+	E2	0.0443	α(K)=0.0300 *5*; α(L)=0.01055 *15*; α(M)=0.00263 *4*; α(N+..)=0.000774 *11* $\gamma(\theta)$: A_2=+0.32 *2*, A_4=−0.05 *2* (1977Gu05).
521.6 *2*	34	2337.3	8^+	1815.7	6^+	E2	0.0244	α(K)=0.01778 *25*; α(L)=0.00497 *7*; α(M)=0.001218 *18*; α(N+..)=0.000361 *5* $\gamma(\theta)$: A_2=+0.4 *1* (1974Pr13).
524.1 *2*	19	2434.7	10^+	1910.6	9^-	(E1)	0.00806	α(K)=0.00670 *10*; α(L)=0.001050 *15*; α(M)=0.000242 *4*; α(N+..)=7.24×10^{-5} *11* Mult.: From A_2=−0.2 *1* (tentative) (1974Pr13).
556.1 *2*	14	2466.7	11^-	1910.6	9^-	E2	0.0211	α(K)=0.01552 *22*; α(L)=0.00411 *6*; α(M)=0.001003 *14*; α(N+..)=0.000297 *5* $\gamma(\theta)$: A_2=+0.43 *6*, A_4=−0.07 *3* (1977Gu05).
560.0 *2*	21	3485.8	16^+	2925.8	14^+	E2	0.0208	α(K)=0.01529 *22*; α(L)=0.00403 *6*; α(M)=0.000982 *14*; α(N+..)=0.000291 *4* $\gamma(\theta)$: A_2=+0.34 *7*, A_4=−0.05 *8* (1977Gu05).
587.2 *2*	51	1635.6	5^-	1048.4	4^+	E1	0.00641	α(K)=0.00531 *8*; α(L)=0.000825 *12*; α(M)=0.000190 *3*; α(N+..)=5.68×10^{-5} *8* Mult.: From α(K)exp (1971Be09) in ^{198}Tl ε decay (1.87 h). $\gamma(\theta)$: A_2=−0.20 *3*, A_4=−0.05 *3* (1977Gu05).
636.6 *2*	95	1048.4	4^+	411.80	2^+	E2	0.0154	α(K)=0.01172 *17*; α(L)=0.00280 *4*; α(M)=0.000677 *10*; α(N+..)=0.000201 *3* $\gamma(\theta)$: A_2=+0.24 *2*, A_4=−0.03 *2* (1977Gu05).
767.3 *2*	34	1815.7	6^+	1048.4	4^+	E2	0.0104	α(K)=0.00807 *12*; α(L)=0.001712 *24*; α(M)=0.000409 *6*; α(N+..)=0.0001220 *18* $\gamma(\theta)$: A_2=+0.20 *3*, A_4=−0.08 *4* (1977Gu05).
776.5 *2*	8.2	4262.3	18^+	3485.8	16^+	E2	0.0102	α(K)=0.00788 *11*; α(L)=0.001661 *24*; α(M)=0.000397 *6*; α(N+..)=0.0001184 *17* $\gamma(\theta)$: A_2=+0.46 *9*, A_4=+0.02 *10* (1977Gu05).
858.6 *2*	6.7	3325.3	13^-	2466.7	11^-	E2	0.00824	α(K)=0.00648 *9*; α(L)=0.001297 *19*; α(M)=0.000308 *5*; α(N+..)=9.20×10^{-5} *13* $\gamma(\theta)$: A_2=+0.31 *10*, A_4=−0.14 *12* (1977Gu05).
976.7[a] *5*	4.3	4302?	(15^-)	3325.3	13^-			
1021.8 *5*	3.4	5284.1	(20^+)	4262.3	18^+			

[†] From 1977Gu05.
[‡] Relative intensities normalized to Iγ(411.8γ)=100. Values are from 1977Gu05. Uncertainties of ±15% estimated by authors.
[#] Based on stretched E2 from $\gamma(\theta)$ and level scheme, except as noted.
[@] Mult. for 48 keV is from L- and M-subshell ratios (1957An55) in ^{198}Tl ε decay (1.87 h).
[&] 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.
[a] Placement of transition in the level scheme is uncertain.

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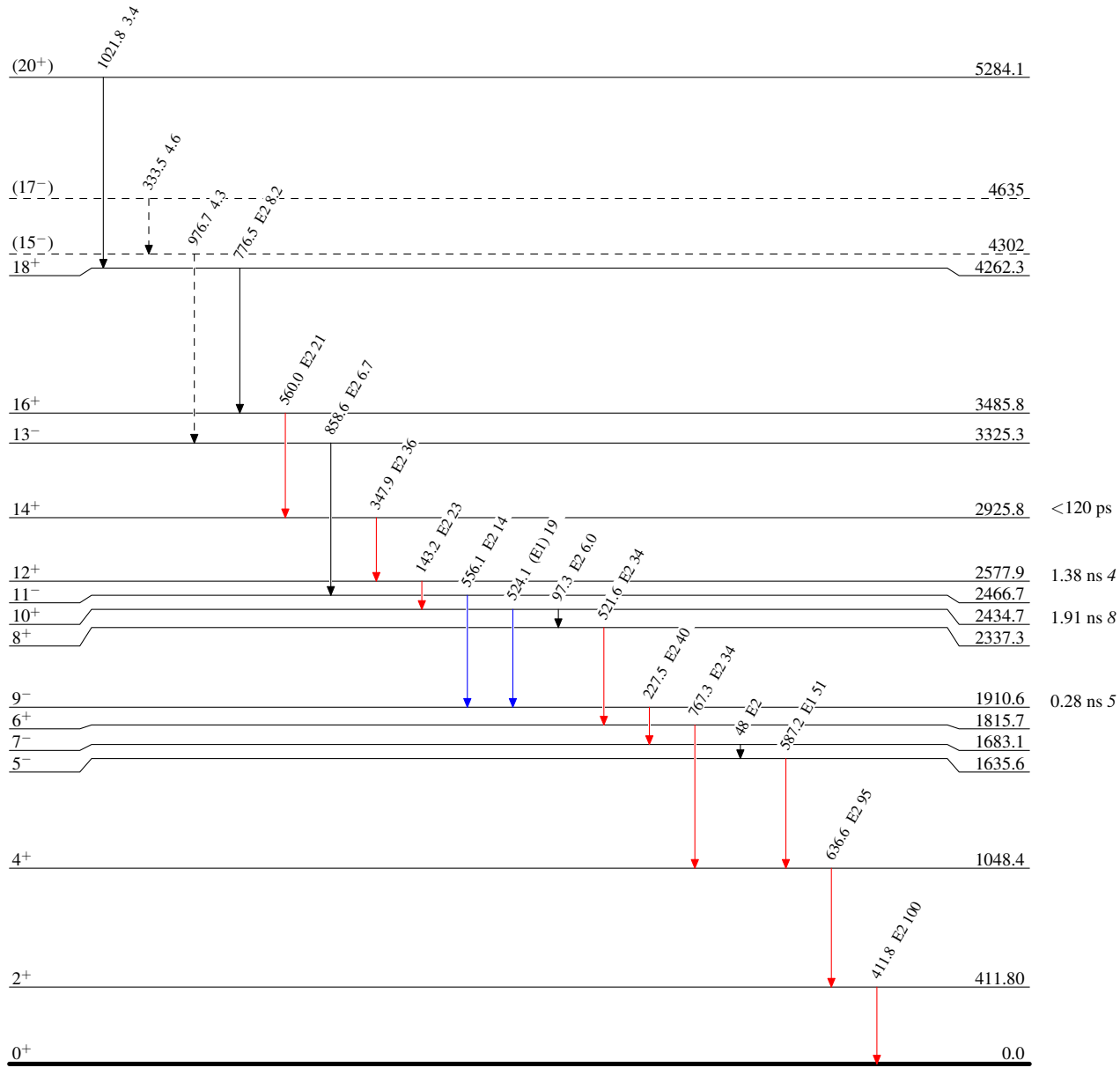
Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{198}_{80}Hg_{118}$

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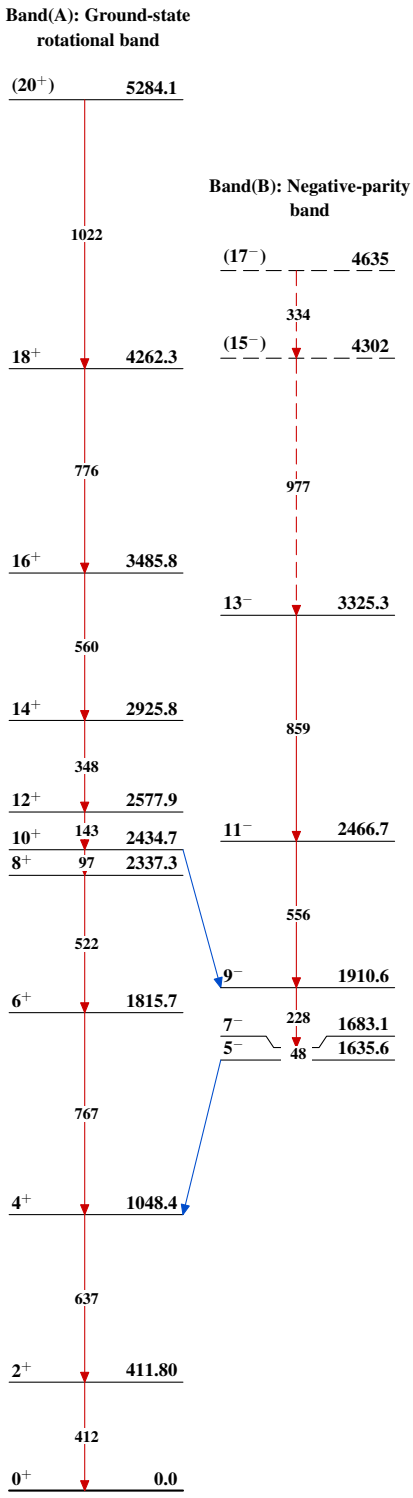

$^{198}_{80}Hg_{118}$