^{204}Hg(t,dγ) 1985Ma48

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

1985Ma48: 1) E=16 MeV ($\gamma\gamma$(t)); 2) E=16 MeV ($\gamma(\theta)$); 3) E=14.2 MeV pulsed beam with 1 ns on and 12.8 μs off; 4) E=16 MeV, pulsed beam with 25 ms on and 25 ms off, but the data were collected only during beam off period; Target: metallic liquid Mercury, enriched to 98.2% in ^{204}Hg; Detectors: Ge(Li); Measured: Eγ, Iγ, $\gamma(\theta)$, $\gamma\gamma$(t), γ(t); Deduced: levels, J$^\pi$, T$_{1/2}$, transition multipolarities.

Others: 1984Be14.

^{205}Hg Levels

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	Comments
0.0	1/2$^-$	5.14 min *9*	T$_{1/2}$: From Adopted Levels. configuration: $\nu(p^{-1}_{1/2})$.
379.48 *11*	(5/2)$^-$		configuration: $\nu(f^{-1}_{5/2})$.
467.51 *11*	(3/2)$^-$		
1346.14 *13*	(7/2$^-$)		
1395.12 *22*	(9/2$^-$)		configuration: $\nu(f^{-1}_{5/2})\otimes 2^+$.
1556.5 *4*	13/2$^+$	1.10 ms *4*	J$^\pi$: From Adopted Levels. T$_{1/2}$: From γ(t) (ms pulsed-beam experiment) using gates on the 379.42γ, 966.62γ and 1015.63γ. configuration: $\nu(i^{-1}_{13/2})$.
1847.42 *18*	(9/2)$^+$		configuration: $\nu(g^{+1}_{9/2})$.

[†] From a least-squares fit to Eγ.
[‡] From 1985Ma48, unless otherwise stated.

$\gamma(^{205}$Hg)

E$_\gamma$[†]	I$_\gamma$[#]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[@]	α[&]	Comments
(49.0 *3*)	0.166 *10*	1395.12	(9/2$^-$)	1346.14	(7/2$^-$)	[M1]	11.5 *3*	α(L)=8.82 *21*; α(M)=2.06 *5* α(N)=0.516 *12*; α(O)=0.0975 *23*; α(P)=0.00746 *18* E$_\gamma$: Unobserved, but required from the intensity balance arguments. Deduced using the level's energy difference. I$_\gamma$: From the measured branching ratios of 19% *1* (1985Ma48) and Iγ(1015.63γ)=8.8 *1*.
161.4[‡] *5*		1556.5	13/2$^+$	1395.12	(9/2$^-$)			E$_\gamma$: 161γ in 1985Ma48 (unplaced in the level scheme). In coincidence with 379.42γ.
[x]164								E$_\gamma$: In coincidence with 379.42, 501.28 and 966.62 keV γ-rays.
[x]188								E$_\gamma$: In coincidence with 379.42 and 501.28 keV γ-rays.
210.3[‡] *5*		1556.5	13/2$^+$	1346.14	(7/2$^-$)			
379.42 *11*	18.5 *2*	379.48	(5/2)$^-$	0.0	1/2$^-$	E2	0.0546	α(K)=0.0362 *5*; α(L)=0.01395 *20*; α(M)=0.00349 *5* α(N)=0.000870 *13*; α(O)=0.0001522 *22*; α(P)=4.74×10^{-6} *7* Mult.: A$_2$=+0.18 *1*.
467.58 *12*	7.1 *1*	467.51	(3/2)$^-$	0.0	1/2$^-$	M1	0.1095	α(K)=0.0901 *13*; α(L)=0.01486 *21*; α(M)=0.00345 *5*

Continued on next page (footnotes at end of table)

^{204}Hg(t,dγ) 1985Ma48 (continued)

γ(^{205}Hg) (continued)

E_γ [†]	I_γ [#]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	α [&]	Comments
								α(N)=0.000865 *13*; α(O)=0.0001638 *23*; α(P)=1.261×10^{-5} *18*
501.28 *12*	7.6 *3*	1847.42	(9/2)$^+$	1346.14	(7/2$^-$)	(E1)	0.00885	Mult.: A_2=−0.11 *4*. α(K)=0.00735 *11*; α(L)=0.001156 *17*; α(M)=0.000267 *4* α(N)=6.65×10^{-5} *10*; α(O)=1.237×10^{-5} *18*; α(P)=8.63×10^{-7} *12* Mult.: A_2=−0.22 *3*.
[x]506.5								E_γ: In coincidence with 379.42γ.
[x]567								E_γ: In coincidence with 379.42γ.
878.83 *21*	0.60 *10*	1346.14	(7/2$^-$)	467.51	(3/2)$^-$	[E2]	0.00780	α(K)=0.00620 *9*; α(L)=0.001226 *18*; α(M)=0.000291 *4* α(N)=7.27×10^{-5} *11*; α(O)=1.340×10^{-5} *19*; α(P)=8.17×10^{-7} *12* I_γ: From the measured branching ratios of 6% *1* (1985Ma48) and Iγ(966.62γ)=10.0 *2*.
[x]945								E_γ: In coincidence with 379.42γ.
966.62 *10*	10.0 *2*	1346.14	(7/2$^-$)	379.48	(5/2)$^-$	(M1)	0.01663	α(K)=0.01374 *20*; α(L)=0.00222 *4*; α(M)=0.000513 *8* α(N)=0.0001286 *18*; α(O)=2.44×10^{-5} *4*; α(P)=1.90×10^{-6} *3* Mult.: A_2=−0.22 *4*.
1015.63 *25*	8.8 *1*	1395.12	(9/2$^-$)	379.48	(5/2)$^-$	[E2]	0.00586	α(K)=0.00471 *7*; α(L)=0.000876 *13*; α(M)=0.000206 *3* α(N)=5.16×10^{-5} *8*; α(O)=9.57×10^{-6} *14*; α(P)=6.18×10^{-7} *9* I_γ: Unresolved doublet in the singles spectrum.

[†] From 1985Ma48, unless otherwise stated.
[‡] From adopted gamas.
[#] From continuous beam measurements (E=16 MeV), unless otherwise stated.
[@] From γ(θ) and multiple decay branches in 1985Ma48.
[&] Additional information 1.
[x] γ ray not placed in level scheme.

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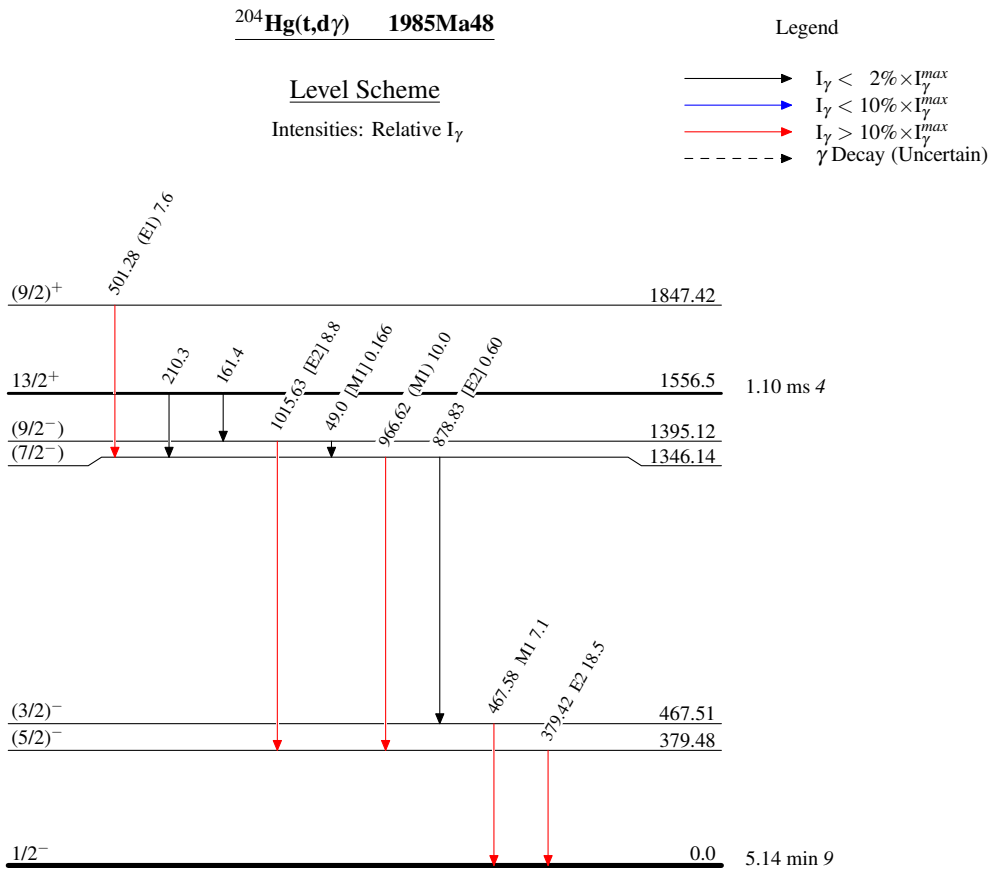
Level Scheme

Intensities: Relative I_γ



$^{205}_{80}Hg_{125}$