

$^{198}\text{Hg}(\alpha,6n\gamma)$, $^{196}\text{Hg}(\alpha,4n\gamma)$ **1987Pe13,1986Va03,1985St16**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Huang Xiaolong	NDS 108, 1093 (2007)	1-Jan-2006

Additional information 1.

1987Pe13,1986Va03: target: 98% enriched ^{198}Hg . $E(\alpha)=75$ MeV. Ge(BGO+NaI Compton suppression), Si(Li) detectors, mini-orange filter. Measured $E\gamma$, $I\gamma(t)$, $\gamma\gamma(\theta)$, Ice, γ -ce coin, γ - Σ γ coin.

1985St16,1983St15: $^{196}\text{Hg}(\alpha,4n\gamma)$ 46% enriched; $^{198}\text{Hg}(\alpha,6n\gamma)$ 98% enriched; $E=60$ MeV. Measured $I\gamma(\theta,H,t)$.

1981Zy02: $^{196}\text{Hg}(\alpha,4n\gamma)$ $E=55$ MeV. Measured $E\gamma$, $\gamma(t)$, $\gamma(\theta,H,t)$.

Others: **1986PeZX**, **1985PeZU**, **1984PeZS**.

For $T_{1/2}$, μ , Q measurements see (HI,xn γ) data set.

 ^{196}Pb Levels

γ rays from the member of band coincident with K and L electrons from 1143 E0 transition (**1987Pe13**).

E(level) [†]	J ^π [‡]	T _{1/2} [‡]	Comments
0.0	0 ⁺	37 min 3	
1049.22 9	2 ⁺		
1142.64 [#] 25	0 ⁺		collective band on J ^π =0 ⁺ intruder state (1987Pe13).
1449.5 [#] 3	2 ⁺		
1738.23 13	4 ⁺		
1797.46 16	5 ⁻		J ^π : configuration=(i _{13/2})(p _{3/2}) (1985St16).
1861.3 [#] 6	(4 ⁺)		
2169.5 4	7 ⁻		
2201.5 11	4 ⁺		
2307.9 4	9 ⁻		
2423.5 [#] 8	(6 ⁺)		
2591.0 4	8 ⁻		
2621.5 [#] 9	(8 ⁺)		Configuration=(9/2 ⁻ [514] 7/2 ⁻ [514])8 ⁺ . Proton 2p- ² H intruder state. Band-structure is disturbed by this J ^π =8 ⁺ isomer (1983St15). B(E2)=0.0028 (1987Pe13). T _{1/2} : from time spectra (1987Pe13).
2644.8 5	10 ⁺		
2693.0 7	(12 ⁺)		
3190.8 7	(11 ⁻)		$\Delta J=-1$ from angular distribution coefficient and DCO ratio (1986Va03). J ^π : configuration=((9/2 ⁻ [514])(13/2 ⁺ [606])11 ⁻ . interpreted As proton 2p- ² H state of which the particle pair is broken and coupled to maximum angular momentum. theoretical value g=0.93 for Configuration=(9/2 ⁻ [514] 13/2 ⁺ [606])11 ⁻ . g: from spin precession (1986PeZV), from TDPAD (1985PeZU).
3738.2 8	12 ⁻		

[†] From least-squares fit to $E\gamma$'s.

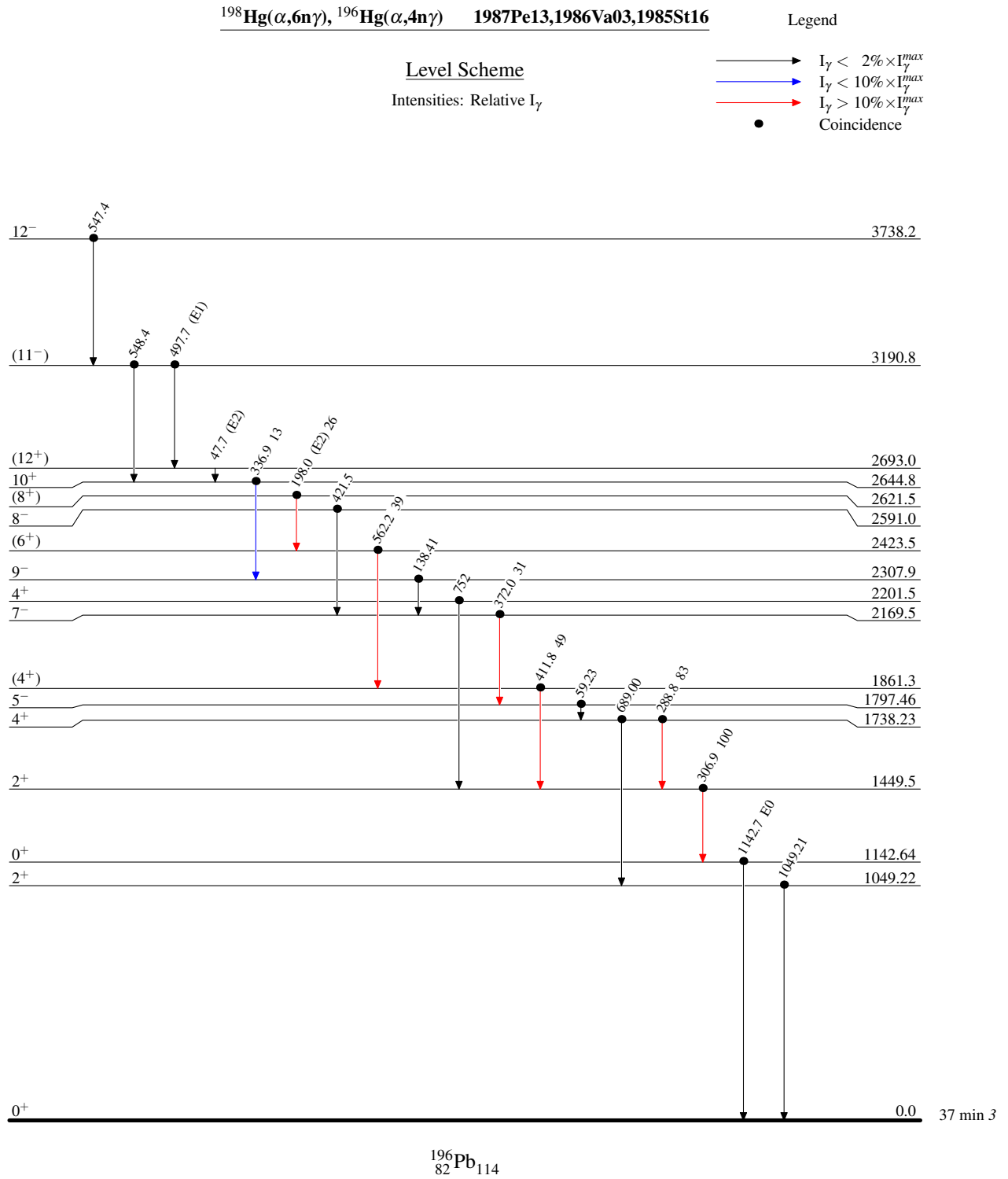
[‡] From ^{196}Pb Adopted Levels.

[#] Band(A): collective band based on the 0⁺ 1143 intruder state.

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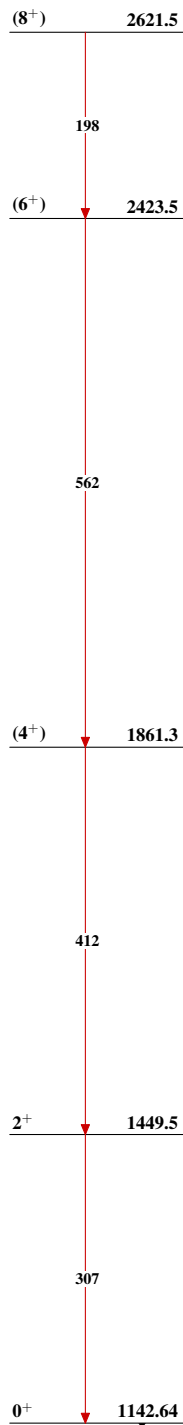
$\gamma(^{196}\text{Pb})$								
E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult.	$\alpha^\&$	Comments
47.7 5		2693.0	(12 ⁺)	2644.8	10 ⁺	(E2)	202 11	$\alpha(\text{L})=151.9$; $\alpha(\text{M})=39.6$ 22; $\alpha(\text{N}+..)=11.8$ 7 E_γ : from ce measurement (1989Su12). 49.0 5 from 1986Pa16. $E_\gamma=50.7$ keV, there is some structure in the single spectrum (1986Va03).
59.23 [†] 9		1797.46	5 ⁻	1738.23	4 ⁺			
138.41 [†] 7		2307.9	9 ⁻	2169.5	7 ⁻			
198.0 5	26 [#] 7	2621.5	(8 ⁺)	2423.5	(6 ⁺)	(E2)	0.443 8	$\alpha(\text{K})=0.172$ 3; $\alpha(\text{L})=0.202$ 4; $\alpha(\text{M})=0.0529$ 10; $\alpha(\text{N}+..)=0.0159$ 3 B(E2)(W.u.)=0.55 17.
288.8 3	83 [#] 30	1738.23	4 ⁺	1449.5	2 ⁺			
306.9 3	100 [#]	1449.5	2 ⁺	1142.64	0 ⁺			
336.9 3	13 [@] 5	2644.8	10 ⁺	2307.9	9 ⁻			
372.0 3	31 [@] 14	2169.5	7 ⁻	1797.46	5 ⁻			
411.8 5	49 [#] 20	1861.3	(4 ⁺)	1449.5	2 ⁺			
421.5 [†] 1		2591.0	8 ⁻	2169.5	7 ⁻			
497.7 [†] 2		3190.8	(11 ⁻)	2693.0	(12 ⁺)	(E1)	0.00966	$\alpha(\text{K})=0.00798$ 12; $\alpha(\text{L})=0.001284$ 18; $\alpha(\text{M})=0.000298$ 5; $\alpha(\text{N}+..)=9.16\times 10^{-5}$ 13 Mult.: $\alpha(\text{K})\text{exp}<0.025$ exclude M1, DCO=0.9 2 (1986Va03). Mult.: $A_2=-0.14$ 6 from R(t) function of 498 γ (1987Pe13,1986PeZV, 1985PeZU); $A_2=-0.09$ 6, $A_4=0.07$ 8 from $\gamma(\theta)$ (1986Va03). I_γ : $I_\gamma=5\%$ of 1049 γ (1986PeZV). I_γ : a member of a triplet, $I_\gamma\approx I_\gamma(497.7\gamma)$ in prompt and delayed coincidence (1986Va03).
547.4 [†] 4		3738.2	12 ⁻	3190.8	(11 ⁻)			
548.4		3190.8	(11 ⁻)	2644.8	10 ⁺			
562.2 5	39 [#] 18	2423.5	(6 ⁺)	1861.3	(4 ⁺)			
689.00 [†] 9		1738.23	4 ⁺	1049.22	2 ⁺			
752		2201.5	4 ⁺	1449.5	2 ⁺			
^x 884								
1049.21 [†] 9		1049.22	2 ⁺	0.0	0 ⁺			
1142.7 [‡] 3		1142.64	0 ⁺	0.0	0 ⁺	E0		I_γ : $I(1143\gamma)/I(1049\gamma)=10\times 10^{-3}$ (1987Pe13,1986PeZV). Mult.: K/L=5.95 21 from exp., 5.91 from calculation (1990Tr01).

[†] From 1986Va03.[‡] From 1990Tr01.[#] Relative intensity, delayed ce from 1049 γ – delayed γ coin.[@] Relative intensity, delayed ce from 1049 γ – prompt γ coin.[&] 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.^x γ ray not placed in level scheme.



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Band(A): Collective band
based on the 0^+ 1143
intruder state



$^{196}_{82}\text{Pb}_{114}$