

$^{238}\text{U}(^{208}\text{Pb},\text{X}\gamma)$ **2001Fo08,2002Pf01**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 201,346 (2025)	21-Jan-2025

2001Fo08: ^{206}Hg produced in bombardment of ^{208}Pb ions on a 50 mg/cm² thick ^{238}U target; $E(^{208}\text{Pb})=1360$ MeV, pulsed beam with 1.6 μs repetition time; Detectors: Gammasphere spectrometer consisting of 101 Compton-suppressed Ge detectors; Measured: $E\gamma$, $I\gamma$, $\gamma\gamma\gamma(t)$ coin; Deduced: J^π , $T_{1/2}$, level scheme. Other publications using the same data: [2001Br35](#), [2001La09](#) and [2004Br19](#).

Shell model calculations presented in [2001Ma26](#).

2002Pf01: ^{206}Hg produced using interaction of ^{208}Pb primary beams at 1 GeV per nucleon with a 1.6 g/cm² beryllium target; Detectors: fragment mass separator, four HPGe (CLOVER) detectors located at the focal plane, multi-wire proportional counters and two scintillation detectors; Measured: $E\gamma$, $I\gamma$, $\gamma\gamma$ coin., $\gamma(t)$. Other publications using the same data: [2001Pf03](#) and [2005Ca02](#).

 ^{206}Hg Levels

$E(\text{level})^\dagger$	$J^\pi^\ddagger$	$T_{1/2}^\ddagger$	Comments
0	0^+	8.32 min 13	$T_{1/2}$: From Adopted Levels.
1068.0 10	2^+		Configuration= $\pi(s_{1/2}^{-1}, d_{3/2}^{-1})$.
2102.0 15	5^-	2.09 μs 2	$T_{1/2}$: From Adopted Levels. Configuration= $\pi(s_{1/2}^{-1}, h_{11/2}^{-1})$. Isomeric ratio is 3.7% 7 (2002Pf01).
2466.0 18	(7^-)		Configuration= $\pi(d_{3/2}^{-1}, h_{11/2}^{-1})$.
3623.0 20	(8^+)		Configuration= $\pi(h_{11/2}^{-1})$.
3723.0 20	(10^+)	92 ns 8	$T_{1/2}$: From 2001Fo08 using a time spectrum produced by summing gates on 364 $\gamma(t)$, 1157 $\gamma(t)$ and 1257 $\gamma(t)$. Other: 90 ns 10 in 2001La09 using a time spectrum produced by gating on the same transitions as in 2001Fo08 . Configuration= $\pi(h_{11/2}^{-2})$.
4605.8 21	(10^+)		Configuration= $\nu(g_{9/2}, i_{13/2}^{-1})$.
4987.1 21	(11^+)		Configuration= $\nu(g_{9/2}, i_{13/2}^{-1})$.
5643.4 21	(12^+)		Configuration= $\pi(d_{3/2}^{-1}, h_{11/2}^{-1})_{7-} \nu(g_{9/2} p_{1/2}^{-1})_{5-}$.
6067.2 21	(13^-)		Configuration= $\nu(h_{11/2}^{-2})_{10+}$ coupled to 3^- octupole phonon.
6276.2? 23			Configuration= $\nu(i_{15/2}, i_{13/2}^{-1})$. The assignment is tentative.

† From a least-squares fit to $E\gamma$.

‡ From [2001Fo08](#), unless otherwise stated.

 $\gamma(^{206}\text{Hg})$

$E_\gamma^\dagger$	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Comments
100 1	3723.0	(10^+)	3623.0	(8^+)	$I(\gamma+\text{ce})(100\gamma)/I(\gamma+\text{ce})(1257\gamma)=3.2$ 3, determined using the $I(\gamma+\text{ce})(1157\gamma)/I(\gamma+\text{ce})(1257\gamma)$ ratio.
209 1	6276.2?		6067.2	(13^-)	
364 1	2466.0	(7^-)	2102.0	5^-	
381 1	4987.1	(11^+)	4605.8	(10^+)	
424 1	6067.2	(13^-)	5643.4	(12^+)	
656 1	5643.4	(12^+)	4987.1	(11^+)	
883 1	4605.8	(10^+)	3723.0	(10^+)	
1034 ‡ 1	2102.0	5^-	1068.0	2^+	
1038 1	5643.4	(12^+)	4605.8	(10^+)	
1068 ‡ 1	1068.0	2^+	0	0^+	
1157 1	3623.0	(8^+)	2466.0	(7^-)	
1257 1	3723.0	(10^+)	2466.0	(7^-)	

Continued on next page (footnotes at end of table)

²³⁸U(²⁰⁸Pb,Xγ) [2001Fo08,2002Pf01](#) (continued)

γ(²⁰⁶Hg) (continued)

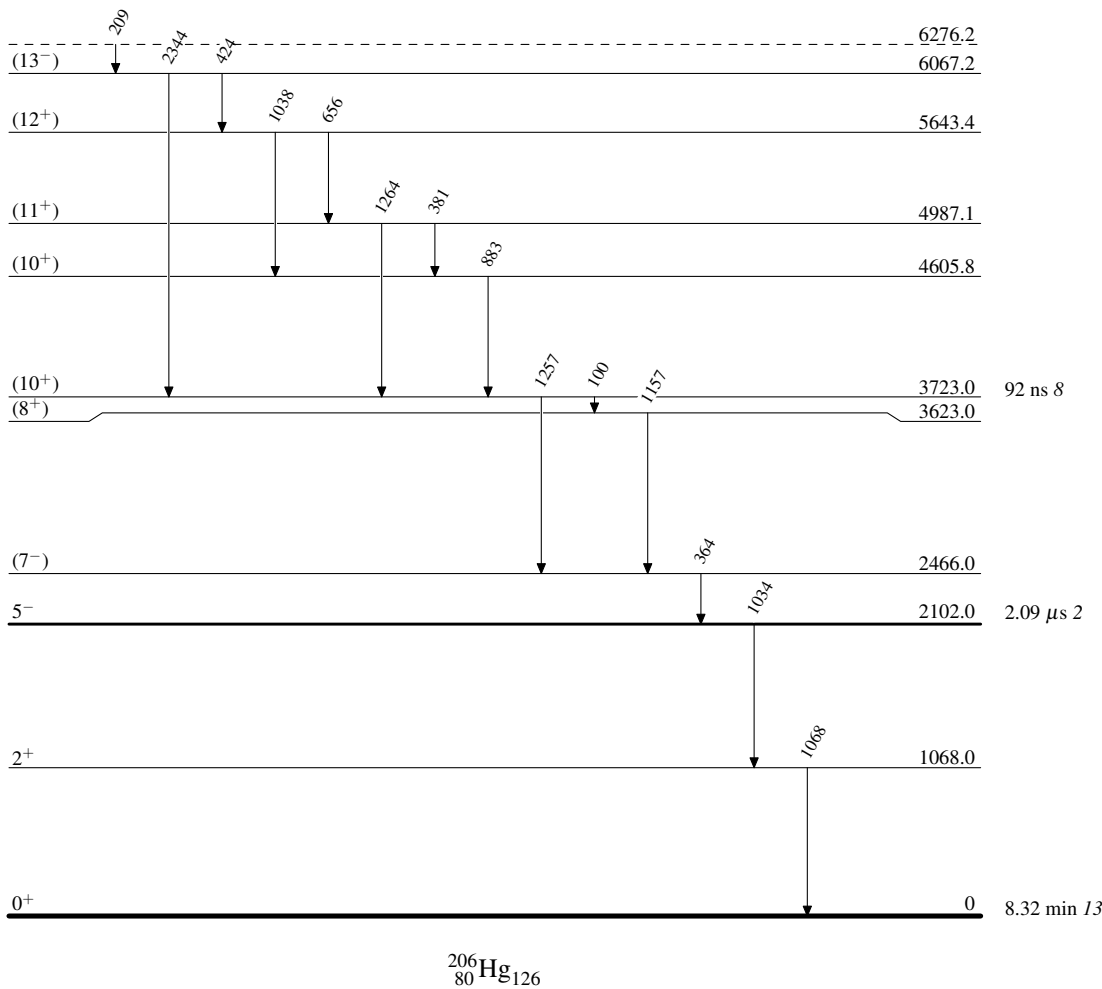
<u>E_γ[†]</u>	<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_f</u>	<u>J_f^π</u>
1264 <i>I</i>	4987.1	(11 ⁺)	3723.0	(10 ⁺)
2344 <i>I</i>	6067.2	(13 ⁻)	3723.0	(10 ⁺)

[†] From the level scheme of [2001Fo08](#). Uncertainties were assigned by the evaluator.

[‡] The ordering of 1034γ and 1068γ is reversed in [2001La09](#), when compared to [2001Fo08](#).

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Level Scheme



$^{206}_{80}\text{Hg}_{126}$