Adopted Levels, Gammas

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

Q(β^-)=3520 *SY*; S(n)=6.19×10^3 *SY*; S(p)=8.14×10^3 *SY*; Q(α)=−1.3×10^3 *SY* 2017Wa10

^{205}Au Levels

Cross Reference (XREF) Flags

A ^{9}Be(^{208}Pb,Xγ)

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0	(3/2$^+$)	32.0 s *14*	A	%β^-=100 J$^\pi$: Systematics in neighboring Au nuclei; shell model predictions. T$_{1/2}$: Weighted average of 31 s *2*, using β-gated 379γ, 467γ and 946γ(t) spectra, (1994We02) and 32.5 s *14*, using implant-β(t) (2014Mo15), and the smallest experimental uncertainty. Other: 34 s *2* (2009Po01) superseded by 2014Mo15, and 34 s *15* using implant-β(t) in 2017Ca12 and 2016Ca25. configuration: $\pi(d^{-1}_{3/2})$ and spherical shape.
907 *5*	(11/2$^-$)	6 s *2*	A	%β^->0; %IT<100 Additional information 1. E(level): From 2009Po01, based on the observed K- and L-conversion electron lines of 825 keV and 896 keV, respectively. %β^-: The β^- decay branch is postulated from the observed in 2009Po01 966- and 1015-keV γ rays of the ^{205}Hg daughter, depopulating the known 1346-keV (J^π=7/2$^-$) and 1395-keV (J^π=9/2$^-$) levels, that are not directly fed in the β^- decay of the ^{205}Au ground state (J^π=(3/2$^+$)). J$^\pi$: 907γ (M4) to (3/2$^+$); systematics in neighboring Au isotopes; shell model. T$_{1/2}$: From 825ce(t) and 896ce(t) in 2009Po01. configuration: $\pi(h^{-1}_{11/2})$ and spherical shape.
1643.93 *24*	(11/2$^-$)		A	J$^\pi$: 736.9γ to (11/2$^-$); shell model.
1853.06 *25*	(15/2$^-$)		A	J$^\pi$: 946.1γ to (11/2$^-$); shell model.
1887.22 *24*	(13/2$^-$)		A	J$^\pi$: 980.2γ to (11/2$^-$); shell model.
2815.51 *25*	(15/2$^+$)		A	J$^\pi$: 962.5γ to (15/2$^-$); shell model. configuration: $\pi((h^{-2}_{11/2})_{8^+}(s^{-1}_{1/2}))$.
2849.7 *4*	(19/2$^+$)	163 ns *5*	A	J$^\pi$: 962.5γ to (13/2$^-$); shell model. T$_{1/2}$: From γ(t) in 2009Po14 using all γ rays below the isomer (except the 243.4 keV one). configuration: $\pi((h^{-2}_{11/2})_{10^+}(s^{-1}_{1/2}))$.

$\gamma(^{205}Au)$

E$_i$(level)	J$_i^\pi$	E$_\gamma$	I$_\gamma$	E$_f$	J$_f^\pi$	Mult.	$\alpha^\dagger$	Comments
907	(11/2$^-$)	(907 *5*)		0.0	(3/2$^+$)	(M4)	0.177 *5*	α(K)=0.132 *3*; α(L)=0.0338 *9*; α(M)=0.00834 *22* α(N)=0.00209 *6*; α(O)=0.000377 *10*; α(P)=2.15×10^{-5} *6* E$_\gamma$: From the observed K- and L-conversion electron lines of 825 keV and 896 keV, respectively. The Eγ was not directly observed. Mult.: From the measured K/L(exp)=3.4 *9* (2009PoZZ), but E3 assignment (K/L(theory)=3.7) cannot be unambiguously excluded.
1643.93	(11/2$^-$)	736.9 *3*	100	907	(11/2$^-$)			

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

$\gamma(^{205}Au)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	α[†]	Comments
1853.06	$(15/2^-)$	946.1 *3*	100	907	$(11/2^-)$			
1887.22	$(13/2^-)$	243.4 *5*	18 *8*	1643.93	$(11/2^-)$			
		980.2 *3*	100 *8*	907	$(11/2^-)$			
2815.51	$(15/2^+)$	928.3 *3*	23 *2*	1887.22	$(13/2^-)$			
		962.5 *3*	100 *5*	1853.06	$(15/2^-)$			
		1171.5 *3*	32 *2*	1643.93	$(11/2^-)$			
2849.7	$(19/2^+)$	(34.2 *5*)	1.75 *16*	2815.51	$(15/2^+)$	[E2]	8.1×10^2 *7*	α(L)=6.1×10^2 *5*; α(M)=157 *12* α(N)=38 *3*; α(O)=6.1 *5*; α(P)=0.0052 *4* B(E2)(W.u.)=1.19 *14* E_γ: From level energy differences.
		962.5 *3*	100 *36*	1887.22	$(13/2^-)$	[E3]	0.01435	α(K)=0.01075 *15*; α(L)=0.00273 *4*; α(M)=0.000664 *10* α(N)=0.0001651 *24*; α(O)=2.92×10^{-5} *4*; α(P)=1.352×10^{-6} *19* B(E3)(W.u.)=0.26 *10*

[†] Additional information 2.

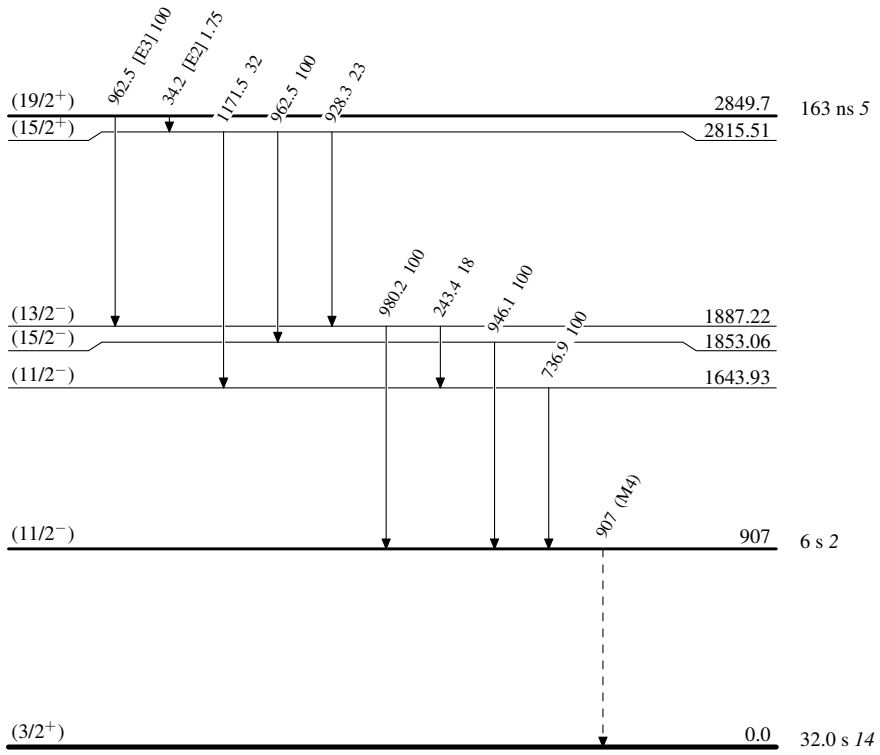
Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{205}_{79}Au_{126}$