Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne	NDS 110,1745 (2009)	31-Dec-2008

Q(β^-)=−5684 *9*; S(n)=10572 *6*; S(p)=7809 *7*; Q(α)=−2131 *7* 2012Wa38
Note: Current evaluation has used the following Q record −5.66E3 3 *10568* 187806 17-2126 7 2003Au03.

^{102}Pd Levels

All band information from (HI,xnγ) (1996Je02).

Cross Reference (XREF) Flags

A	^{102}Rh β^- decay (207.3 d)	E	^{102}Pd(p,p′γ)	I	^{92}Zr(^{13}C,3nγ)
B	^{102}Ag ε decay (12.9 min)	F	Coulomb excitation	J	^{92}Zr(^{13}C,3nγ),^{94}Zr(^{12}C,4nγ)
C	^{102}Ag ε decay (7.7 min)	G	^{103}Rh(p,2nγ)		
D	^{99}Ru(α,nγ),^{100}Ru(α,2nγ)	H	^{76}Ge(^{34}S,α4nγ)		

E(level)†	J$^\pi$#	T$_{1/2}$‡	XREF	Comments
0@	0$^+$	stable	ABCDEFGHIJ	<r^2>$^{1/2}$=4.4839 fm *44* (2004An14, evaluation).
556.44@ *5*	2$^+$	11.5 ps *8*	ABCDEFGHIJ	Q=−0.20 *15* (1989Ra17) μ=0.82 *8* (1989Ra17) β_2=0.196 *6* (2001Ra27) T$_{1/2}$: From evaluation of 2001Ra27. E(level): from ^{102}Rh β^- decay (207 d). J$^\pi$: E2 γ to 0$^+$.
1275.91@ *7*	4$^+$	2.04 ps *10*	BCDEFGHIJ	J$^\pi$: E2 γ to 2$^+$ (HI,xnγ), strong (ε+β^+) feeding from 5$^+$ (^{102}Ag ε decay (12.9 min)).
1534.48 *10*	2$^+$	0.65 ps *5*	BCDEF IJ	J$^\pi$: J=2 from p$\gamma(\theta)$ in (p,p′γ); positive parity from observation in Coul. ex.
1593.16 *22*	0$^+$	14.5 ns *4*	C EFG	J$^\pi$: E0 γ to 0$^+$. T$_{1/2}$: weighted average of 14.3 ns *5* (p,2nγ), 14.6 ns *7* (p,p′γ) and 17 ns *2* (7.7-min ^{102}Ag ε decay).
1658.1 *5*	0$^+$	0.87 ps *22*	C EF	T$_{1/2}$: deduced from B(E2)(J=second 2$^+$ to third 0$^+$)=0.008 *2*. J$^\pi$: from $\gamma\gamma(\theta)$ in ^{102}Ag ε decay (7.7 min).
1715.0?			D	
1919.0?			D	
1944.48 *25*	2$^+$	1.9 ps *7*	BC EF	T$_{1/2}$: deduced by the evaluator from B(E2)(J=0 to fourth 2$^+$)=0.0010 *3*. J$^\pi$: E2+M1 γ to 2$^+$; p′$\gamma(\theta)$ in (p,p′γ) consistent with J=2 only.
2111.41@ *8*	6$^+$		B DE GHIJ	E(level): the existence of a close-lying doublet was established by comparing the Iγ(835)/Iγ(1555) ratio in different reactions.
2111.66 *12*	3$^+$		B DE HIJ	J$^\pi$: E2+M1 γ to 2$^+$; p′$\gamma(\theta)$ in (p,p′γ) consistent with J=3 only.
2138.03 *8*	4$^+$	0.52 ps *13*	B DEF HIJ	T$_{1/2}$: deduced by the evaluator from B(E2)(J=2 to 4′)=0.017 *4*. J$^\pi$: E2 γ to 2$^+$; log *ft* in ^{102}Ag ε decay (12.9 min).
2248.8 *4*	(2,3)		BC E	J$^\pi$: from p′$\gamma(\theta)$ in (p,p′γ).
2294.57 *9*	(4$^-$)	1.1 ns *1*	D IJ	J$^\pi$: from $\gamma(\theta)$ in γ(linear pol) in (HI,xnγ), (5$^+$) is proposed by 1981Pi02. J=(4$^-$), proposed by 1976Gr12 from the same reaction, is in contradiction to γ(linear pol) results of 1981Pi02. However, 1981Pi02 take into account the possibility of a very close-lying doublet. This possibility is ruled out by 1986An03. From systematics J=4$^-$ most probable. T$_{1/2}$: from (a,γ(t)) in ^{100}Ru(α,2n) (1986An03).
2301.28 *9*	(4)$^+$		B DE HIJ	J$^\pi$: log *ft* in ^{102}Ag ε decay (129 min); γ to 2$^+$.
2342.95 *21*	(3$^-$)		B DEF	J$^\pi$: from p′$\gamma(\theta)$ in (p,p′γ). *J$^\pi$*=(3$^-$) from B(E3) and level systematics in Coul. ex. B(E3)=0.060 *6* (2002Ki06, evaluation).

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Adopted Levels, Gammas (continued)

^{102}Pd Levels (continued)

E(level)[†]	J$^{\pi}$[#]	XREF	Comments
2391.2 *3*	(1,2)$^{+}$	C E	J$^{\pi}$: J=(1,2) from p′γ in (p,p′γ); π=+ from log *ft* in ^{102}Ag ε decay (7.7 min).
2431.5 *7*		E	
2474.35 *8*	5^{-}	B D HIJ	J$^{\pi}$: J=5 from γ(θ) results of 1981Pi02; level populated by E2-cascade from 3727 level (J$^{\pi}$=9^{-}).
2480.3 *10*		B E	
2490.0 *10*		E	
2533.0 *3*	(4)$^{+}$	B E	J$^{\pi}$: J=(3,4) from p′γ(θ) in (p,p′γ); from log *ft* in ^{102}Ag ε decay (12.0 min) J=3, and negative parity can be excluded.
2546.2 *7*		E	
2553.5 *10*		D	
2574.3 *4*	(1,2)	C E	J$^{\pi}$: J=(1,2) from p′γ(θ) in (p,p′γ) probably positive parity.
2582.9 *10*		B E	
2606.5 *5*		B DE	
2610.78 *25*	(1,2)$^{+}$	C E	J$^{\pi}$: J=(1,2) from p′γ(θ) in (p,p′γ); log *ft* in ^{102}Ag ε decay (7.7 min).
2651.34 *12*	(4^{+})	B D J	J$^{\pi}$: from γ(θ) and γ(linear pol) in (HI,xnγ). J=5^{-} not excluded.
2660.7 *7*		E	
2669.62 *22*		B	
2675.1 *10*		E	
2695.9 *10*	(1,2)	E	J$^{\pi}$: from p′γ(θ) in (p,p′γ).
2716.3 *3*	(1,2)$^{+}$	C E	J$^{\pi}$: J=(1,2) from p′γ(θ) in (p,p′γ); log *ft* in ^{102}Ag ε decay (7.7 min).
2734.02 *22*		B E	
2737.0 *4*		C	
2749.93 *12*		B	
2769.0? *4*		B D	
2798.9 *4*	(4^{+})	B	J$^{\pi}$: log ft=6.1 in ^{102}Ag ε decay (12.9 min); γ to 2^{+}.
2863.60 *12*		B	
2914.19[&] *10*	6^{-}	D HIJ	J$^{\pi}$: E2+M1 γ to 5^{-}; J=5,7 ruled out from γ(θ) and γ(linear pol) in (HI,xnγ).
2977.0 *4*	4$^{(+)}$,5$^{(+)}$,6$^{(+)}$	B DE	J$^{\pi}$: J=4,5,6 from log *ft*=5.94 in ^{102}Ag ε decay (12.9 min); π probably +.
3002.9 *4*	4^{+},5^{+},6^{+}	B DE	J$^{\pi}$: from log *ft* in ^{102}Ag ε decay (12.9 min).
3008.79 *14*	(4)	E	J$^{\pi}$: from log *ft*=6.05 in ^{102}Ag ε decay (12.9 min) and γ-decay to 2^{+}.
3013.13[@] *9*	8^{+}	D HIJ	
3040.0 *10*		E	
3075.26 *9*	4^{+},5^{+},6^{+}	B E	J$^{\pi}$: from log *ft* in ^{102}Ag ε decay (12.9 min).
3113.2 *3*		B	
3123.3 *4*	1^{+},2^{+},3^{+}	C E	J$^{\pi}$: from log *ft*=5.74 in ^{102}Ag ε decay (7.7 min).
3166.36 *11*	4,5,6	B E	J$^{\pi}$: from log *ft*=6.2 in ^{102}Ag ε decay (12.9 min).
3178.61 *13*	4,5,6	B	J$^{\pi}$: from log *ft*=6.6 in ^{102}Ag ε decay (12.9 min).
3188.19[b] *10*	7^{-}	D HIJ	J$^{\pi}$: E2 to 5^{-}. Band structure.
3238.17 *25*	1^{+},2^{+}	C E	J$^{\pi}$: from logft=5.13 in ^{102}Ag ε decay (7.7 min) and γ decay to 0^{+}.
3278.9 *8*		B	
3295.9 *5*		B	
3340.35 *10*	8^{+}	D HIJ	J$^{\pi}$: E2 to 6^{+}, ΔJ=2 for 1228γ (from γγ(θ) from oriented nuclei in (HI,xnγ), 1976Gr12). Consistent with γ(θ) results of 1981Pi02 in (HI,xnγ).
3389.74 *23*	(7^{-})	IJ	J$^{\pi}$: populated from 3727 level (J$^{\pi}$=9^{-}), M2+E1 γ to 6^{+}.
3670.64[&] *11*	8^{-}	D HIJ	
3727.84[a] *10*	9^{-}	HIJ	J$^{\pi}$: 1981Pi02: only 9^{-} is consistent with γ(θ) and γ(linear pol) with J$^{\pi}$(3340)=8^{+}.
3889.39?[b] *14*	(9^{-})	HIJ	J$^{\pi}$: E2 γ to 7^{-}.
3992.78[@] *10*	10^{+}	D HIJ	
4033.2 *8*		H J	
4317.82[&] *11*	10^{-}	HIJ	
4328.77 *12*	(10^{+})	HIJ	J$^{\pi}$: (E2) γ to 8^{+}; γ(θ) and γ(linear pol) also consistent with 8^{+},9^{-}.
4432.82[a] *10*	11^{-}	HIJ	

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Adopted Levels, Gammas (continued)

^{102}Pd Levels (continued)

E(level)[†]	J^{π}[#]	XREF	Comments
4646.09[b] *25*	(11⁻)	HIJ	
4747.2 *3*		HIJ	
4836.9?		I	
4944.77 *18*	(11⁻)	H	
5055.17[@] *11*	12⁺	HIJ	
5094.11[&] *12*	12⁻	HIJ	
5260.68 *15*	(12⁺)	HIJ	J^{π}: E2 γ to (10⁺).
5325.97[a] *12*	13⁻	HIJ	
5577.2?[b] *4*	(13⁻)	H J	
5768.88 *25*		H J	
5984.80[&] *13*	14⁻	HIJ	
6138.70 *19*	14⁺	HIJ	J^{π}: E2 γ to 12⁺.
6179.9[@] *5*	14⁺	H	
6222.7?	(14⁺)	IJ	J^{π}: E2 γ to (12⁺).
6345.06[a] *15*	15⁻	HIJ	
6539.1?[b] *5*	(15⁻)	H	
6988.16[&] *17*	16⁻	HIJ	
7428.9[@] *6*	16⁺	H	
7461.36[a] *18*	17⁻	HIJ	
7585.7?[b] *6*	(17⁻)	H	
8063.3[&] *4*	18⁻	H	
8707.1[@] *7*	18⁺	H	
8737.6[a] *10*	19⁻	H	
8778.7?[b] *11*	(19⁻)	H	
9214.2[&] *7*	20⁻	H	
9892.9 *11*	20⁺	H	J^{π}: E2 to 18⁺.
10178.2[a] *13*	21⁻	H	
10223.1[@] *8*	20⁺	H	
10540.2[&] *11*	22⁻	H	
11227.7 *13*	(22⁺)	H	J^{π}: γ decay to 20⁺.
11886.2[@] *9*	22⁺	H	
12025.2[&] *15*	24⁻	H	
13592.9[@] *10*	24⁺	H	
15414.4?[@] *12*	(26⁺)	H	

[†] From a least squares procedure using adopted gammas.
[‡] Deduced from B(E2) in Coul. ex., unless noted otherwise.
[#] Unless noted otherwise, from $I\gamma(\theta)$, $\gamma\gamma$-coin, $\gamma\gamma(\theta)$ from oriented nuclei and γ linear pol. and observed band structure in different (HI,xnγ).
[@] Band(A): probable member of the g.s. $\Delta J=2$ rotational band.
[&] Band(B): probable member of $\Delta J=2$ rotational band on $J^{\pi}=6^-$ level.
[a] Band(C): probable member of $\Delta J=2$ rotational band on $J^{\pi}=9^-$ level.
[b] Band(D): probable member of $\Delta J=2$ rotational band on $J^{\pi}=7^-$ level.

Adopted Levels, Gammas (continued)

$\gamma(^{102}Pd)$

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[#]	Comments
556.44	2^+	556.41 *5*	100	0	0^+	E2		B(E2)(W.u.)=32.6 *23* E_γ: from (HI,xnγ). Mult.: from α in (p,p′γ) see also ^{102}Ag ε decay and (p,2nγ).
1275.91	4^+	719.38 *6*	100	556.44	2^+	E2		B(E2)(W.u.)=50.9 *25* Mult.: from α in (p,p′γ) see also ^{102}Ag ε decay and (p,2nγ).
1534.48	2^+	259[&]		1275.91	4^+			
		977.78 *18*	97 *8*	556.44	2^+	E2+M1	2.8 *2*	B(M1)(W.u.)=0.0020 *4*; B(E2)(W.u.)=15.0 *20* Mult.: from on-line nuclear orientation in 12.9-min ^{102}Ag decay (1987Wo04). B(E2)(W.u.),B(M1)(W.u.): deduced from B(E2) (J=2 to second 2^+) in Coul. ex. and adopted decay properties of 1534 level. δ from ^{102}Ag ε decay.
		1534.71 *16*	100 *10*	0	0^+			B(E2)(W.u.)=4.2 *21* B(E2)(W.u.): deduced from B(E2) (J=2 to 2′) in Coul. ex. and adopted decay properties of 1534 level.
1593.16	0^+	58.3		1534.48	2^+			
		1035.6		556.44	2^+			
		1592.6 *5*		0	0^+	E0		From Coul. ex. ρ^2(J=second 0^+ to 0)=4.0×10^{-3}. q^2_K(E0/E2) > 2, X(E0/E2) > 0.0048, ρ^2(E0)=0.004 *15* (2005Ki02, evaluation).
1658.1	0^+	1101.7 *5*	100	556.44	2^+			
		1658.1		0	0^+	E0		From Coul. ex. ρ^2(J=third 0^+ to 0)<0.3×10^{-3}. q^2_K(E0/E2) < 0.0014 , X(E0/E2) < 0.00038 ρ^2(E0) < 0.002 (2005Ki02, evaluation).
1715.0?		439[&]	100	1275.91	4^+			
1919.0?		383[&]	100	1534.48	2^+			
1944.48	2^+	351.4 *2*		1593.16	0^+			
		1387.8 *4*	100	556.44	2^+	E2+M1	+8.1 *+73−26*	B(M1)(W.u.)=5.E−5 *+10−5*; B(E2)(W.u.)=1.6 *6* Mult.: from (p,p′γ).
		1943.8	23	0	0^+			
2111.41	6^+	835.48 *5*	100	1275.91	4^+	E2		
2111.66	3^+	1555.24 *17*	100	556.44	2^+	E2(+M1)	>15	δ: From (p,p′γ); +0.24 *16* (1976Gr12) is in disagreement with the (p,p′γ) results of 1977La16.
2138.03	4^+	27[&]		2111.41	6^+			It is unclear if 27γ decays to 2111.41 or 2111.66 level or both if it is an unresolved doublet.
		221[&]		1919.0?				
		603.59 *18*	11.6 *14*	1534.48	2^+			
		861[&]		1275.91	4^+			
		1581.54 *9*	100 *9*	556.44	2^+	E2		B(E2)(W.u.)=3.5 *10*

From ENSDF

$\gamma(^{102}Pd)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.‡	δ#	Comments
2248.8	(2,3)	1692.3 *4*	100	556.44	2^+			
2294.57	(4^-)	156.7 *2*	23 *10*	2138.03	4^+	E1		B(E1)(W.u.)=9.E−6 *5* Mult.: from (α,2nγ).
		182.88 *12*	47 *11*	2111.66	3^+	E1(+M2)	−0.05 *5*	B(E1)(W.u.)=1.6×10^{-5} *5*; B(M2)(W.u.)=4.E+1 *+6−4*
		1018.56 *9*	100 *28*	1275.91	4^+	E1		B(E1)(W.u.)=1.4×10^{-7} *5* Mult.: from $\alpha\gamma(\theta)$ in (α,2nγ) (1986An03).
2301.28	$(4)^+$	1025.0 *3*	24.6 *25*	1275.91	4^+	M1(+E2)	0.01 *8*	Mult.: from on-line nuclear orientation in 12.9-min ^{102}Ag decay (1987Wo04).
		1745.05 *9*	100 *9*	556.44	2^+			
2342.95	(3^-)	1786.5 *2*	100	556.44	2^+			
2391.2	$(1,2)^+$	1834.7 *3*	100	556.44	2^+			
2431.5		897.2	28	1534.48	2^+			
		1874.9	100	556.44	2^+			
2474.35	5^-	173.3 *1*	43 *10*	2301.28	$(4)^+$	M2+E1	−0.12 *4*	
		179.75 *7*	54 *8*	2294.57	(4^-)	E2+M1	+0.47 *6*	
		336.30 *7*	100 *20*	2138.03	4^+			
		1198.38 *9*	40.2 *20*	1275.91	4^+	E1(+M2)	−0.04 *6*	
2480.3		946.4	33 *4*	1534.48	2^+			
		1924.1	100 *11*	556.44	2^+			
2490.0		1933.5	100	556.44	2^+			
2533.0	$(4)^+$	231.7 *1*	1.79 *17*	2301.28	$(4)^+$			
		998.3 *3*	0.8 *3*	1534.48	2^+			
		1257.1 *3*	100 *6*	1275.91	4^+			
		1976.0 *3*	0.8 *4*	556.44	2^+			
2546.2		1012.2	100	1534.48	2^+			
		1989.3	87	556.44	2^+			
2553.5		1277.7 *10*	100	1275.91	4^+			
2574.3	(1,2)	2017.8 *4*	100	556.44	2^+			
2582.9		1307.0	100	1275.91	4^+			
2606.5		1330.6 *5*	100	1275.91	4^+			
2610.78	$(1,2)^+$	1017.6 *2*		1593.16	0^+			
		2054.5 *4*	100 *16*	556.44	2^+			
		2609.8	17	0	0^+			
2651.34	(4^+)	176		2474.35	5^-			
		512.5 *9*		2138.03	4^+			
		540.0 *2*	36	2111.41	6^+			
		1375.42 *10*	100	1275.91	4^+	M1(+E2)	+0.61@ *63*	δ: if J(8651)=5^-, δ(M2/E1)≈0.1.
2660.7		1126.5	40	1534.48	2^+			
		2103.9	100	556.44	2^+			
2669.62		1393.7 *2*	100	1275.91	4^+			
2675.1		2118.6	100	556.44	2^+			

$^{102}_{46}Pd_{56}$-5

Adopted Levels, Gammas (continued)

$\gamma(^{102}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[‡]	δ[#]	Comments
2695.9	(1,2)	2695.9	100	0	0^+			
2716.3	$(1,2)^+$	2159.5 4	100 18	556.44	2^+			
		2716.5 4	37 13	0	0^+			
2734.02		1458.1 2	100	1275.91	4^+			
2737.0		1461.1 4	100	1275.91	4^+			
2749.93		1215.5 3	4.6 12	1534.48	2^+			
		1474.0 1	100 18	1275.91	4^+			
2769.0?		1493.10[&] 30	100	1275.91	4^+			
2798.9	(4^+)	660.5 1	10 5	2138.03	4^+			
		854.3 1	8 5	1944.48	2^+			
		1263.9 1	34 4	1534.48	2^+			
		1522.7 4	100 10	1275.91	4^+			
		2241.6 8	37 16	556.44	2^+			
2863.60		1329.1 1	33 7	1534.48	2^+			
		1587.7 2	100 11	1275.91	4^+			
2914.19	6^-	439.90 7	100 13	2474.35	5^-	E2+M1	+0.32 3	δ: δ=+0.40 9 from1981Pi02.
		619.50 19	34 4	2294.57	(4^-)	E2		
2977.0	$4^{(+)},5^{(+)},6^{(+)}$	865.0 2	100 9	2111.41	6^+			
		1700.4 3		1275.91	4^+			
3002.9	$4^+,5^+,6^+$	891.5 3	100 11	2111.41	6^+			
		1727.9 3	6.6 8	1275.91	4^+			
3008.79	(4)	1474.3 1	100	1534.48	2^+			
3013.13	8^+	719.4[&]		2294.57	(4^-)			
		901.71 4	100	2111.41	6^+	E2		
3040.0		2483.5	100	556.44	2^+			
3075.26	$4^+,5^+,6^+$	424.4 1	3.1 9	2651.34	(4^+)			
		937.7 2	62 5	2138.03	4^+			
		963.3 5	9 5	2111.66	3^+			
		964.2 1	55 5	2111.41	6^+			
		1799.5 1	100 11	1275.91	4^+			
3113.2		1837.3 3	100	1275.91	4^+			
3123.3	$1^+,2^+,3^+$	1588.8 4	100 33	1534.48	2^+			
		2566.9 5	67 44	556.44	2^+			
3166.36	4,5,6	634.1 1	32 5	2533.0	$(4)^+$			
		1054.9 5	19 8	2111.66	3^+			
		1055.4 2	100 12	2111.41	6^+			
		1889.4 3	68 8	1275.91	4^+			E_γ: poor fit. Level-energy difference=1890.6.
3178.61	4,5,6	1067.2 1	100	2111.41	6^+			
3188.19	7^-	274.1 2	36 7	2914.19	6^-	E2+M1	+0.20[@] 7	δ: Other: +0.48 21 or +0.17 2 (1976Gr12).
		713.8 1	100 15	2474.35	5^-	E2		E_γ: from (HI,xnγ) (1996Je02).
3238.17	$1^+,2^+$	1644.1 4		1593.16	0^+			

$^{102}_{46}Pd_{56}$-6

Adopted Levels, Gammas (continued)

$\gamma(^{102}Pd)$ (continued)

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. ‡	δ #	Comments
3238.17	$1^+,2^+$	2682.1 *4*	35 *14*	556.44	2^+			
		3238.6 *4*	100 *22*	0	0^+			
3278.9		1167.5 *8*	100	2111.41	6^+			
3295.9		1184.5 *5*	100	2111.41	6^+			
3340.35	8^+	327.22 *4*	100 *11*	3013.13	8^+	E2+M1	−0.19 *5*	δ: Other: −0.27 *13* from $^{92}Zr(^{13}C,3n\gamma)$ (1981Pi02).
		1228.94 *20*	20.4 *21*	2111.41	6^+	E2		
3389.74	(7^-)	1278.31& *15*	100	2111.41	6^+	M2+E1	−0.05 *4*	
3670.64	8^-	482.4 *1*	28 *5*	3188.19	7^-	E2+M1	+1.5@ *5*	δ: Other: +1.6 *7* in $^{92}Zr(^{13}C,3n\gamma)$.
		756.5 *1*	100 *6*	2914.19	6^-	E2		
3727.84	9^-	338.1 *2*	18.7 *14*	3389.74	(7^-)			
		387.5 *1*	23 *4*	3340.35	8^+	M2+E1	−0.15 *4*	
		539.7 *1*	35 *9*	3188.19	7^-	E2		
		714.6 *1*	100 *9*	3013.13	8^+	E1(+M2)	−0.05 *4*	
3889.39?	(9^-)	701.2 *1*	100	3188.19	7^-	E2		The relative order of the 756.7γ and 701.22γ is not established, and the reverse ordering would define a level at 3945.0 rather than at 3889.5.
3992.78	10^+	979.66 *5*	100	3013.13	8^+	E2		E_γ: from (HI,xnγ) (1996Je02).
4033.2		1020&		3013.13	8^+			
4317.82	10^-	428.5& *4*	44 *4*	3889.39?	(9^-)	M1(+E2)	−0.05@ *7*	
		590.0 *3*	16 *3*	3727.84	9^-	E2+M1	+0.14@ *9*	
		647.18 *5*	100 *8*	3670.64	8^-	E2		
4328.77	(10^+)	336.0 *1*	89 *14*	3992.78	10^+			
		988.4 *1*	100 *11*	3340.35	8^+	(E2)		
4432.82	11^-	440.1 *1*	6 *1*	3992.78	10^+			
		704.95 *5*	100 *2*	3727.84	9^-	E2		
4646.09	(11^-)	756.7 *2*	100	3889.39?	(9^-)	E2		
4747.2		1019.5 *4*	100	3727.84	9^-			
4836.9?		508.3& *3*	100	4328.77	(10^+)			
4944.77	(11^-)	951.6 *2*	100	3992.78	10^+			
5055.17	12^+	110.0 *2*		4944.77	(11^-)			
		1022.0 *8*	60 *19*	4033.2				
		1062.41 *5*	100 *2*	3992.78	10^+	E2		
5094.11	12^-	661.3 *1*	32 *3*	4432.82	11^-	D		
		776.3 *1*	100 *9*	4317.82	10^-	E2		
5260.68	(12^+)	513.5 *3*	81 *11*	4747.2				
		931.9 *1*	100 *11*	4328.77	(10^+)	E2		
5325.97	13^-	893.14 *7*	100	4432.82	11^-	E2		
5577.2?	(13^-)	931.1 *3*	100	4646.09	(11^-)	E2		
5768.88		508.2 *2*	100	5260.68	(12^+)			
5984.80	14^-	658.8 *1*	19 *4*	5325.97	13^-	D		
		890.7 *1*	100 *10*	5094.11	12^-	E2		

$^{102}_{46}Pd_{56}$-7

$\gamma(^{102}$Pd) (continued)

E_i(level)	J^π_i	E_γ †	I_γ †	E_f	J^π_f	Mult. ‡
6138.70	14+	1083.53 *15*	100	5055.17	12+	E2
6179.9	14+	1124.7 *4*	100	5055.17	12+	E2
6222.7?	(14+)	962.2& *2*	100	5260.68	(12+)	E2
6345.06	15−	1019.1 *1*	100	5325.97	13−	E2
6539.1?	(15−)	961.9 *3*	100	5577.2?	(13−)	(E2)
6988.16	16−	643.1 *1*	26 *4*	6345.06	15−	
		1003.3 *2*	100 *8*	5984.80	14−	E2
7428.9	16+	1249.0 *4*	100	6179.9	14+	E2
7461.36	17−	1116.3 *1*	100	6345.06	15−	E2
7585.7?	(17−)	1046.6 *3*	100	6539.1?	(15−)	E2
8063.3	18−	602.1 *4*	13 *3*	7461.36	17−	
		1074.9 *5*	100 *11*	6988.16	16−	E2
8707.1	18+	1278.2 *3*	100	7428.9	16+	E2
8737.6	19−	1276.2 *9*	100	7461.36	17−	
8778.7?	(19−)	1193.0 *9*	100	7585.7?	(17−)	E2
9214.2	20−	1150.9 *5*	100	8063.3	18−	
9892.9	20+	1185.8 *9*	100	8707.1	18+	E2
10178.2	21−	1440.6 *9*	100	8737.6	19−	
10223.1	20+	1516.0 *4*	100	8707.1	18+	E2
10540.2	22−	1326.0 *9*	100	9214.2	20−	
11227.7	(22+)	1334.8 *6*	100	9892.9	20+	
11886.2	22+	1663.1 *4*	100	10223.1	20+	E2
12025.2	24−	1485.0 *9*	100	10540.2	22−	E2
13592.9	24+	1706.7 *5*	100	11886.2	22+	
15414.4?	(26+)	1821.4 *5*	100	13592.9	24+	

† Unless noted otherwise, from a weighted average of decay, ^{99}Ru(α,nγ),^{100}Ru(α,2nγ) and (HI,xnγ) data if available.

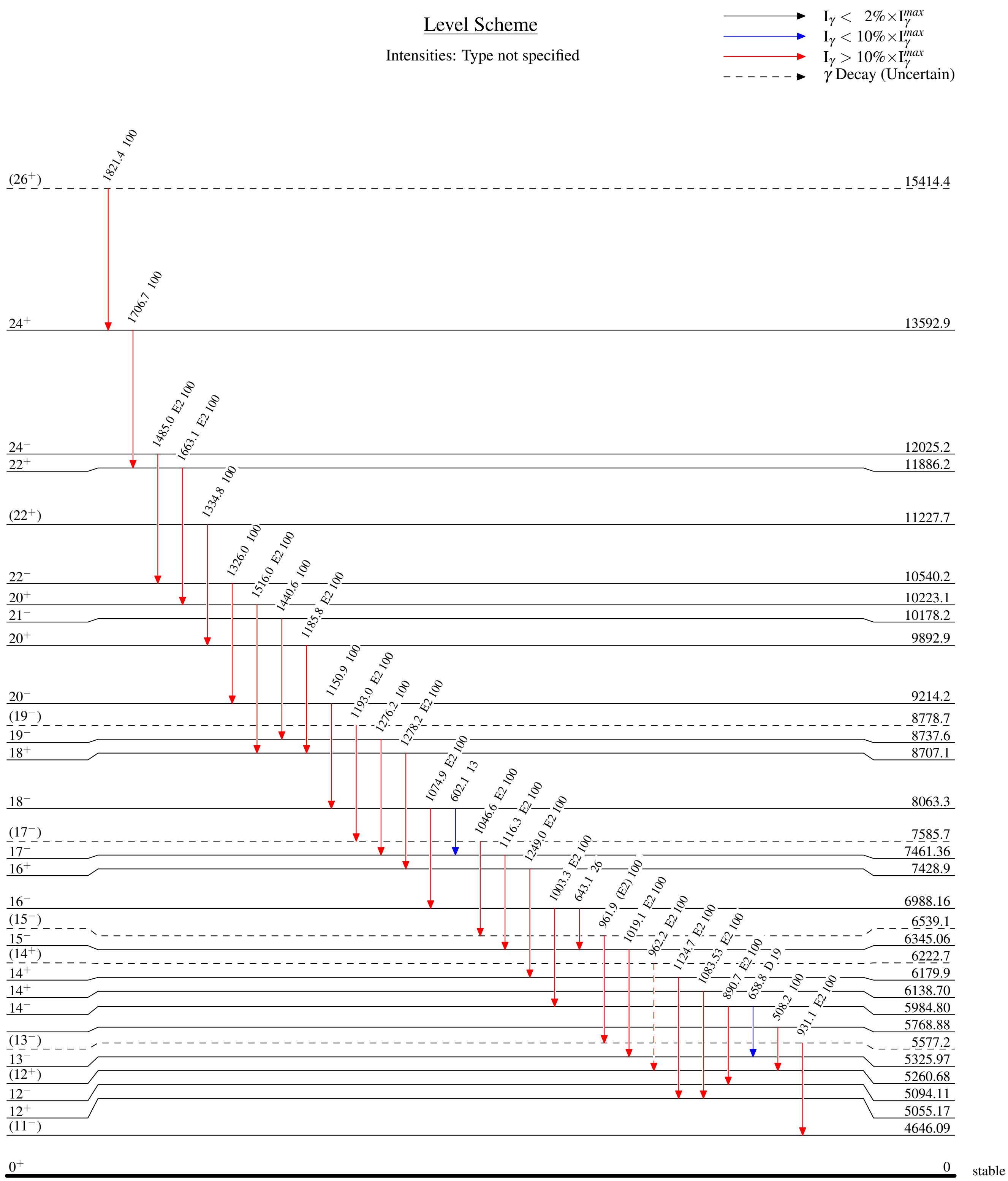
‡ Normally from $\gamma(\theta)$ and γ(linear pol) (1981Pi02) but for levels above 7461 keV, only observed by 1996Je02, stretched Q were assumed E2.

Unless noted otherwise, from ^{92}Zr(^{13}C,3nγ) (1976Gr12): weighted average of values from directional correlation of oriented nuclei (R(DCO)) and angular distribution results.

@ From ^{92}Zr(^{13}C,3nγ) (1981Pi02).

& Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas



$^{102}_{46}Pd_{56}$

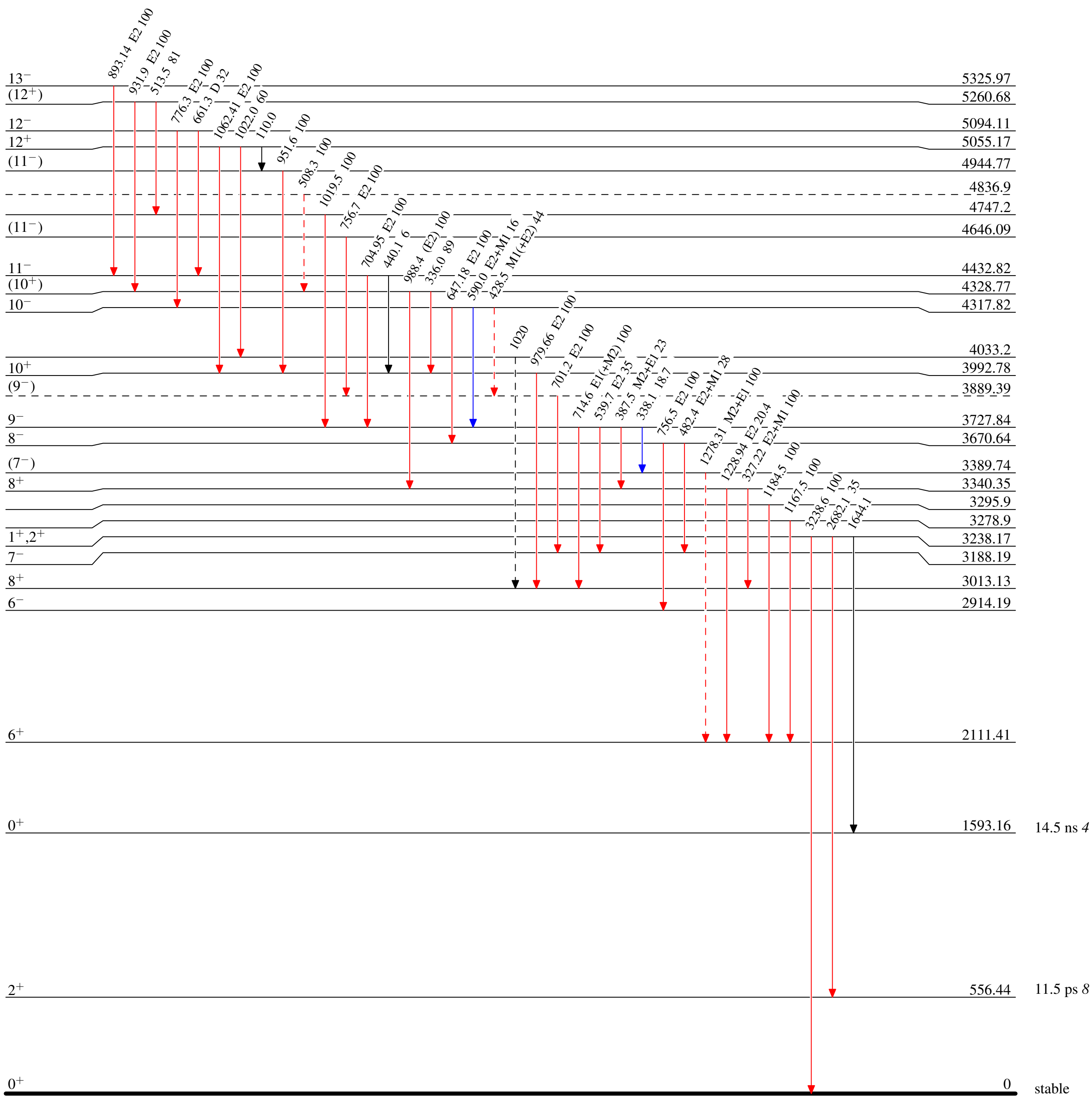
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

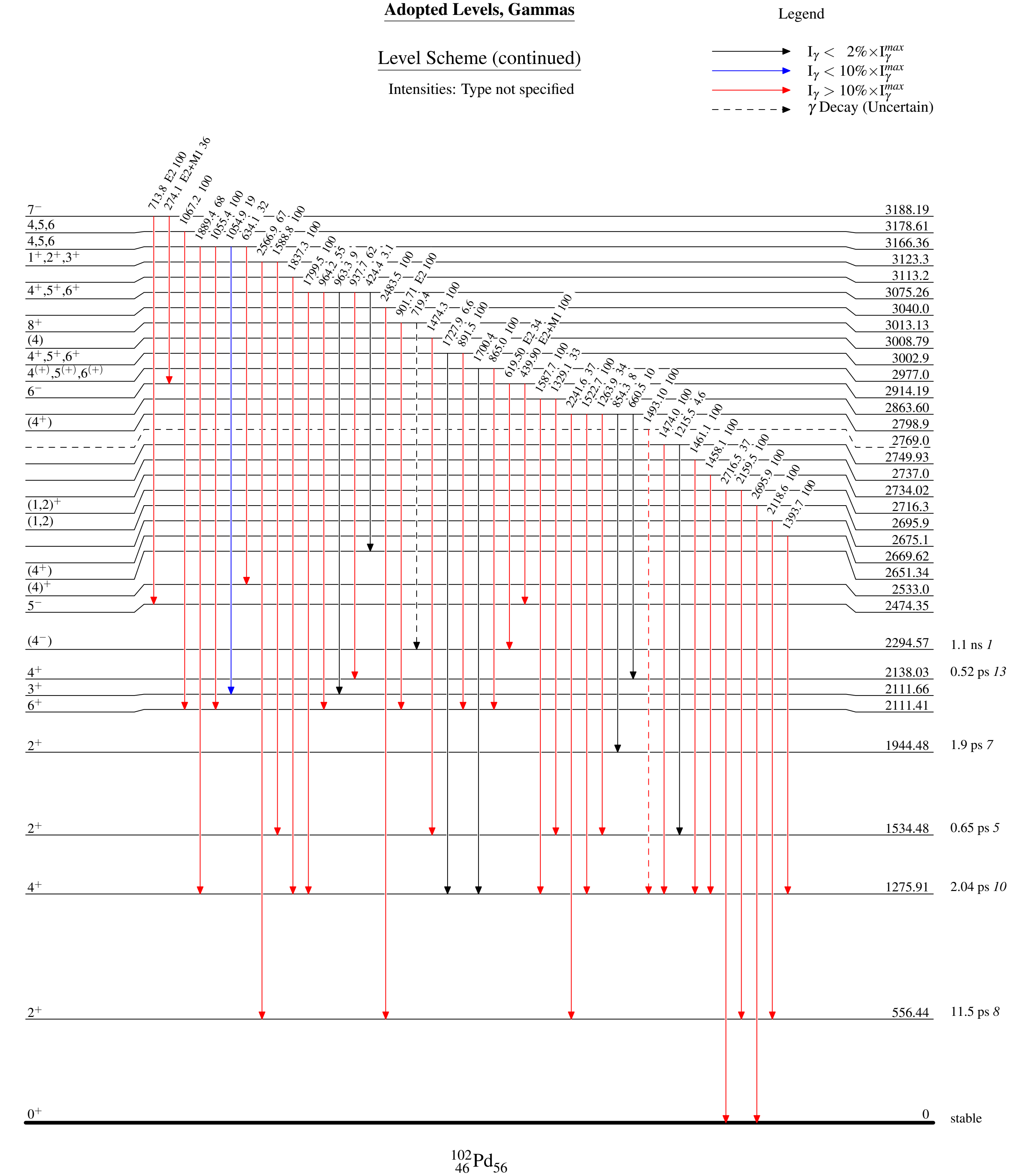
Legend

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



$^{102}_{46}Pd_{56}$

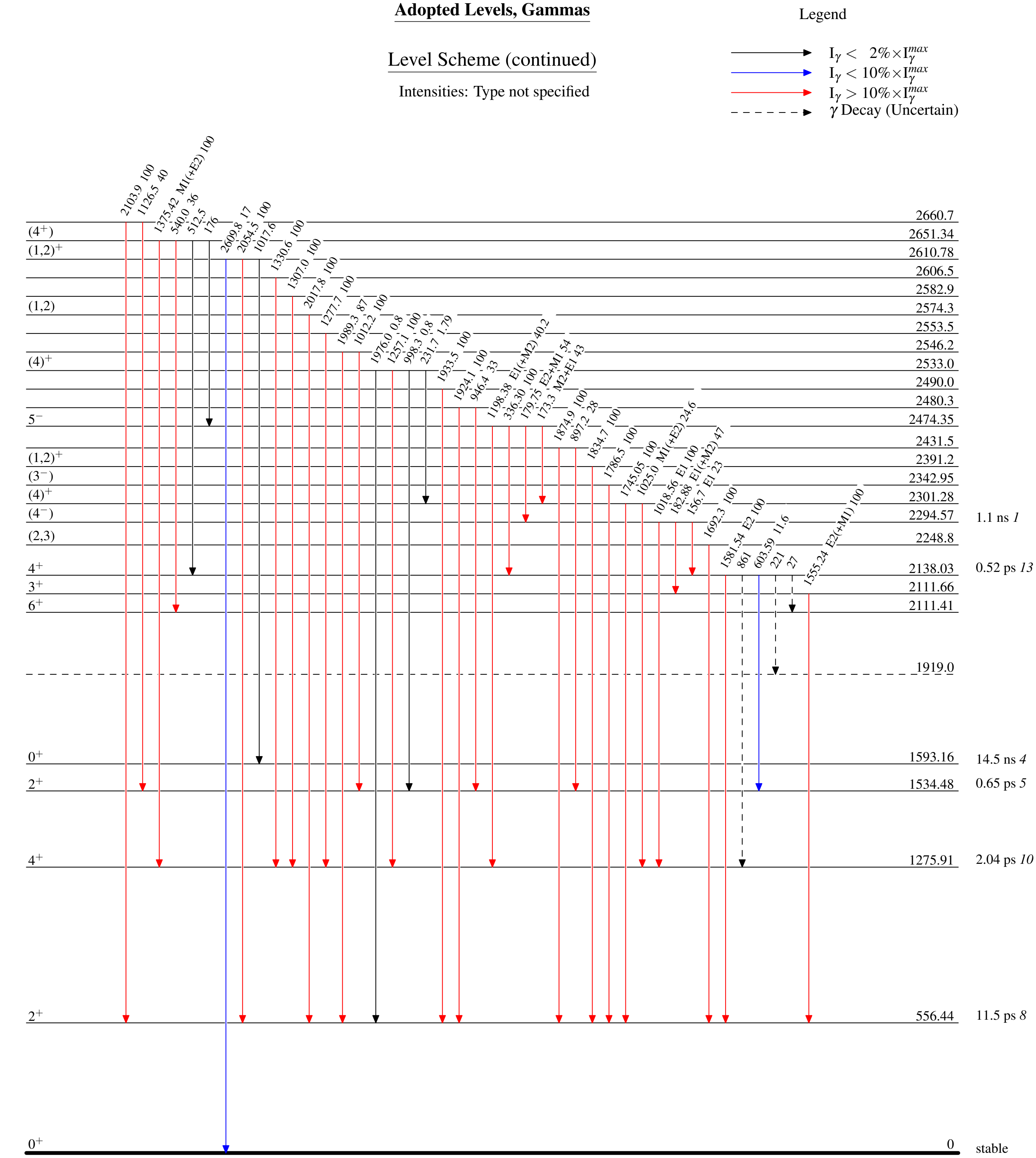
Adopted Levels, Gammas



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



$^{102}_{46}Pd_{56}$

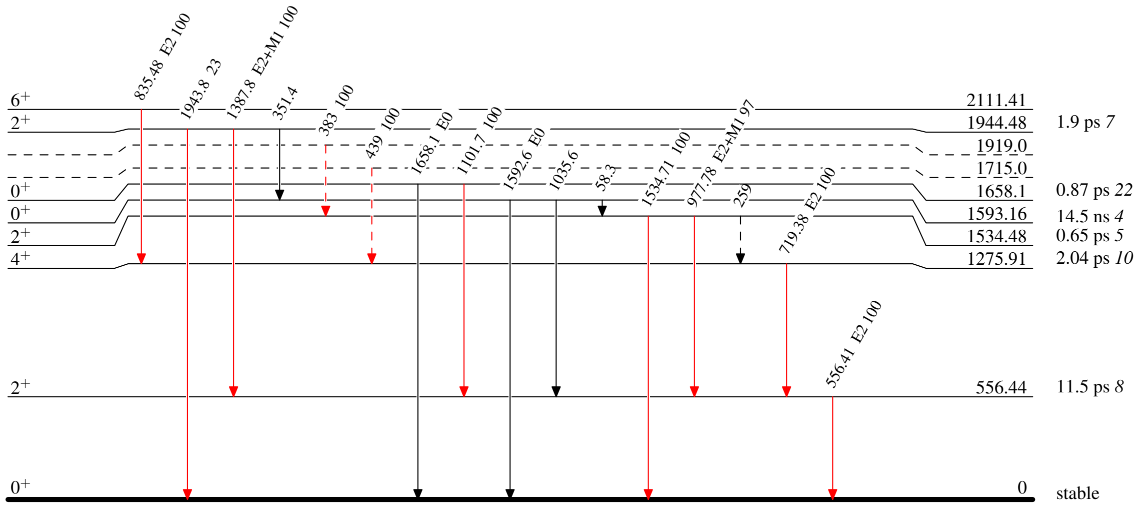
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified

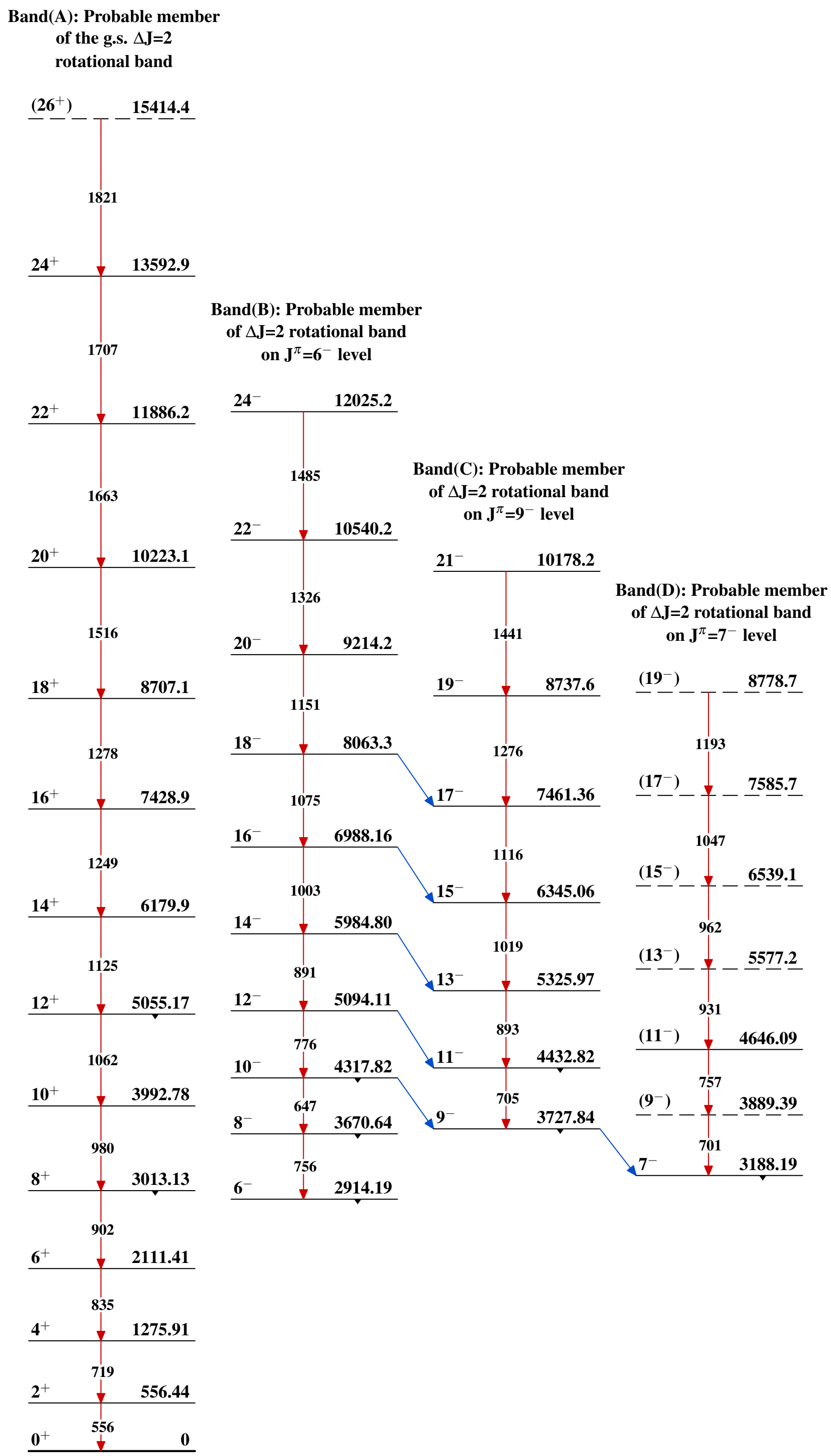
Legend

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



$^{102}_{46}Pd_{56}$

Adopted Levels, Gammas



$^{102}_{46}Pd_{56}$

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

Q(β^-)=−4279 *4*; S(n)=9981 *3*; S(p)=8656 *3*; Q(α)=−2596.1 *17* 2012Wa38
Note: Current evaluation has used the following Q record −4279 4 *9982* 5 *8657* 5 −2596 5 2003Au03.
For comparison of strongly populated high-spin sequences observed in ^{102}Pd, ^{104}Pd, ^{106}Pd, see 1976Gr12.

^{104}Pd Levels

Cross Reference (XREF) Flags

A	^{104}Rh β^- decay (42.3 s)	F	^{104}Ru(α,4nγ)	K	^{106}Pd(p,t)
B	^{104}Rh β^- decay (4.34 min)	G	^{104}Pd(n,n$'\gamma$)	L	^{107}Ag(p,α)
C	^{104}Ag ε decay (69.2 min)	H	^{104}Pd(p,p$'$)	M	^{64}Ni(^{48}Ca,6n2pγ)
D	^{104}Ag ε decay (33.5 min)	I	Coulomb excitation	N	^{104}Pd(p,p$'\gamma$)
E	^{94}Zr(^{13}C,3nγ)	J	^{105}Pd(d,t)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[#]	0$^+$	stable	ABCDEFGHIJKLMN	
555.81[#] *4*	2$^+$	9.9 ps *5*	ABCDEFGHIJKLMN	μ=+0.92 *8* (1980Br01); Q=−0.47 *10* (1989Ra17) Q: other: −0.45 *10*. Method: Coul. ex. reorientation precession technique. μ: IMPAC. Other: see 1989Ra17. J$^\pi$: L(p,t)=2. T$_{1/2}$: from B(E2)(0-2)=0.535 *35* (1987Ra01).
1323.59[#] *6*	4$^+$	1.5 ps *2*	ABCDEFGHIJK MN	J$^\pi$: L(p,t)=4, 767$\gamma(\theta)$. T$_{1/2}$: from B(E2) in Coul. ex.
1333.59 *8*	0$^+$	5.2 ps *5*	AB D GH JKL N	J$^\pi$: L(p,t)=0.
1341.68 *5*	2$^+$	1.60 ps *4*	ABCDEFGHIJK N	J$^\pi$: E2 γ to 0$^+$. T$_{1/2}$: from B(E2) in Coul. ex.
1792.86 *6*	0$^+$	<0.25 ps	AB D G IJKL	T$_{1/2}$: from B(E2) in Coul. ex. J$^\pi$: (555γ)(777γ)(θ) (1960Bu05), no γ to (g.s.).
1794.3 *5*	2$^+$	<1.4 ps	AB D GHIJ N	XREF: J(1797). T$_{1/2}$: from B(E2) in Coul. ex. J$^\pi$: log *ft*=6.1 from 2$^+$. 1794γ to 0$^+$ g.s., M2 γ would not be likely, M1 γ to 2$^+$.
1820.65 *16*	3$^+$		ABCDEFG J L N	J$^\pi$: (1265γ)(555γ)(θ), M1 γ to 2$^+$, L=1 in ^{107}Ag(p,α) is inconsistent with the adopted *J*$^\pi$.
1941.2 *5*			BC GH	
1948 *4*			H	
1999.1 *4*	(1,2)		D H	J$^\pi$: 1999γ to 0$^+$ g.s.
2070			L	
2082.38 *6*	4$^+$	1.2 ps *12*	BC EFGHIJK N	T$_{1/2}$: from B(E2) in Coul. ex. J$^\pi$: L(p,t)=4, E2 γ to 2$^+$ states.
2103 *2*	0$^+$		H	
2125.5 *1*			B J	
2138.7 *10*	0$^+$		GH K	J$^\pi$: L(p,t)=0.
2178.5 *10*			G JK	
2181.56 *6*	4$^+$		BC E GH N	J$^\pi$: log *ft*=5.4 from 5$^+$, 1625γ to 2$^+$.
2193.4 *6*	(4$^+$)		CD GH JK	J$^\pi$: L(p,t)=(4), I=3 in (p,p$'$).
2228 *2*	4$^+$		H	
2244.9 *3*	2$^+$		A D GH JK	J$^\pi$: L(p,t)=2.
2249.5[#] *5*	6$^+$		C EFG MN	J$^\pi$: 926$\gamma(\theta)$ strong E2 in cascade to g.s.
2265.31 *7*	4$^+$		BC EFGH J N	J$^\pi$: 941$\gamma(\theta)$ and ang. distribution in (p,p$'$).
2276.5 *3*	1$^+$,2$^+$		D G J N	J$^\pi$: M1 γ to 2$^+$, 2276γ to 0$^+$ g.s.

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Adopted Levels, Gammas (continued)

^{104}Pd Levels (continued)

E(level)†	J$^{\pi}$‡	XREF	Comments
2290		L	
2298.9 *3*	4^-	CDE G	J$^{\pi}$: E1+M2 γ to 4^+, M1 γ from 5^-, decay to 2^+.
2337.9 *3*	$1^+,2^+$	D GH JK	XREF: K(2331).
			J$^{\pi}$: log *ft*=5.9 from 2^+, 2338γ to 0^+ g.s.
2351.6 *9*		GH	
2444.5 *3*	$4^+,5^+,6^+$	BC G J	J$^{\pi}$: log *ft*=5.6 from 5^+, L(d,t)=4.
2456.6 *4*	(1,2,3)	CD GH J	J$^{\pi}$: log *ft*=6.7 from 2^+.
2465 *5*		GH J	
2479.0 *6*	1,2	CD KL	XREF: K(2484).
			J$^{\pi}$: log *ft*=7.2 from 2^+, 2479γ to 0^+ g.s.
2491.4 *5*	5^-	E H	J$^{\pi}$: 1167$\gamma(\theta)$, linear-polarization data, strong E1 to 4^+ member of g.s. band.
2492.0 *5*		D	
2521.4 *4*	2^+	D GH K	XREF: K(2526).
			J$^{\pi}$: L(p,t)=2.
2533.4 *5*	$(2,3)^+$	D GH J	J$^{\pi}$: log *ft*=6.3 from 2^+,L(d,t)=0.
2570.3 *4*	4^+	CD GH JK N	XREF: K(2564).
			J$^{\pi}$: log *ft*=6.5 from 5^+, M1 γ to 4^+, and ang. distribution in (p,p′).
2572.5		G	
2613.4 *5*	$2^+,3^+$	C G JKL	XREF: K(2604).
			J$^{\pi}$: L(d,t)=0.
2622.2 *5*	(1,2,3)	D H	J$^{\pi}$: log *ft*=6.2 from 2^+.
2626.9 *4*	$(1,2^+)$	D G	J$^{\pi}$: log *ft*=6.4 from 2^+, 2627γ to 0^+ g.s.
2642.6 *5*	4^+	D GH JK	XREF: K(2635).
			J$^{\pi}$: log *ft*=7.3 from 2^+,and ang. distribution in (p,p′).
2667.7 *2*	5^-	E H L	J$^{\pi}$: E1 γ to 4^+, E2 γ from 7^-.
2677.8 *4*	4^+	CD H JK	J$^{\pi}$: L(d,t)=4.
2695.0 *5*	2^+	D H J	J$^{\pi}$: L(p,t)=2.
2714.8 *6*	(4,5,6)	CD G J	J$^{\pi}$: log *ft*=7.2 from 5^+.
2734 *5*	4^-	H	
2760.3 *4*	(4,5,6)	CD L	J$^{\pi}$: log *ft*=6.6 from 5^+.
2767.0 *4*	4^+	C G K	J$^{\pi}$: L(p,t)=4.
2771.5 *5*		D H J	
2774.5 *4*	4^+	C GH	J$^{\pi}$: log *ft*=6.1 from 5^+ and ang. distribution in (p,p′).
2784 *6*	$^+$	J	J$^{\pi}$: L(d,t)=2(+4).
2800.5 *6*	4^+	CD GH JK	XREF: K(2795).
			J$^{\pi}$: L(p,t)=4.
2810.0 *5*	$2^+,3^+$	D JK	J$^{\pi}$: L(d,t)=0.
2866.0 *10*		GH K	XREF: K(2868).
2875.2 *5*	(4,5,6)	C G J	J$^{\pi}$: log *ft*=6.9 from 5^+.
2900.8 *2*	6^-	E	J$^{\pi}$: M1 γ to 5^-.
2913 *6*		H J	
2918.3 *4*	$(1,2,3)^+$	D GH JK	XREF: J(2920)K(2914).
			J$^{\pi}$: log *ft*=6.4 from 2^+. L(d,t)=2(+4).
2924.2 *3*	$(4,5,6)^+$	C G	J$^{\pi}$: log *ft*=6 from 5^+. L(d,t)=2.
2933 *6*		J	
2958.9 *3*	$4^-,5^-,6^-$	E H L	J$^{\pi}$: M1 γ to 5^-.
2960.5 *7*	$(2^+,3)$	D	J$^{\pi}$: log *ft*=6.7 from 2^+, 2960γ to 4^+.
2975.5 *5*	(1,2,3)	D G J	J$^{\pi}$: log *ft*=6.1 from 2^+.
2988.4 *2*	7^-	E	J$^{\pi}$: from 738$\gamma(\theta)$ and linear pol. g.s. band.
2993.6 *8*	4^+	D GH J	J$^{\pi}$: log *ft*=6.6 from 2^+, L(d,t)=0+2, ang. distribution in (p,p′).
3000.3 *5*		G J	
3008.3 *5*	$(1,2^+)$	D GH J	XREF: G(3013.5)H(3014).
			J$^{\pi}$: log *ft*=7.0 from 2^+, 3008γ to 0^+ g.s.
3013.5 *9*		GH	
3020.3 *9*		GH J	
3034.0 *5*	$(1,2^+)$	D	J$^{\pi}$: log *ft*=6.5 from 2^+, 3034γ to 0^+ g.s.

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Adopted Levels, Gammas (continued)

^{104}Pd Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
3078.5 *5*	$2^+,3^+$	D GH J	XREF: J(3076). J^{π}: L=0 (d,t).
3084 *6*	(2^+ to 5^+)	C GH J	XREF: G(3086). J^{π}: L(d,t)=2+4. Probable feeding of 4^+.
3092 *6*	($2^+,3^+$)	J	J^{π}: L(d,t)=0+2.
3094 *5*	3^-	H	
3097.8 *5*	1,2	CD G	J^{π}: γ to 0^+ g.s., log *ft*=7.8 from 2^+.
3105.0 *4*	4^+	C G J N	XREF: J(3102). J^{π}: log *ft*=5.4 from 5^+, M1 γ to 4^+, γ to 2^+ state.
3112.8 *6*	$5^+,6^+$	C N	J^{π}: log *ft*=5.2 from 5^+, M1 γ to 6^+.
3113.3 *6*	(1,2,3)	D j	J^{π}: log *ft*=7.3 from 2^+.
3115.6 *5*		C j	
3116.5 *5*	$1,2^{(+)}$	D j	J^{π}: γ to 0^+ g.s., log *ft*=7.8 from 2^+.
3136.9 *4*	4^+	C GH J	XREF: J(3134). J^{π}: log *ft*=5.7 from 5^+ parent, ang. distribution in (p,p′).
3151.8[&] *2*	8^-	E	J^{π}: from 251$\gamma(\theta)$, linear pol, ΔJ=2 E2 γ to 6^-.
3157.9 *4*	4^+	C H N	J^{π}: log *ft*=5.1 from 5^+ parent, ang. distribution in (p,p′), but $J^{\pi}=5^+$ in (p,p′γ)?
3179.3 *4*		G	
3187 *5*	2^+	H	
3193.3 *6*	($3^-,4^-$)	CD H J	XREF: J(3191). J^{π}: log *ft*=7.7 from 5^+ and 2^+ parents.
3213.5 *4*	$1^+,2^+,3^+$	D H	XREF: H(3210). J^{π}: log *ft*=5.6 from 2^+.
3220.7[#] *2*	8^+	EF M	
3224 *5*	2^+	H	
3230 *5*	6^+	H	
3253 *5*	2^+	H	
3271 *5*	6^+	H	
3280.5 *6*	4^+	C GH	J^{π}: log *ft*=7.3 from 5^+ parent, not fed from 2^+ parent ang. distribution in (p,p′).
3285.4 *6*	4^+	D H	XREF: H(3285). J^{π}: log *ft*=5.7 from 2^+, ang. distribution in (p,p′).
3309.6 *5*	4,5,6	C	J^{π}: log *ft*=6 from 5^+; not fed from 2^+ parent.
3321 *5*	2^+	H	
3333.8 *4*	($3^-,4^-$)	CD H	J^{π}: fed from 5^+ and 2^+ parent.
3349 *5*	2^+	H	
3362 *5*	4^+	H	J^{π}: ang. distribution in (p,p′).
3368.1[@] *2*	9^-	E	J^{π}: 380$\gamma(\theta)$, linear pol., ΔJ=2 E2 γ to 7^-.
3376 *5*	6^+	H	
3381 *5*	2^+	H	
3408.0 *4*	$1^+,2^+,3^+$	D	J^{π}: log *ft*=5.3 from 2^+.
3417 *3*	2^+	H	
3421.8 *5*	(8^+)	E	J^{π}: 201$\gamma(\theta)$.
3432 *5*	3^-	H	
3447		H	
3461 *5*	(2^+)	H	
3474.4 *5*	4^+	D H	J^{π}: log *ft*=6.0 from 2^+, ang. distribution in (p,p′).
3501.8 *5*	(9^-)	E	J^{π}: 216$\gamma(\theta)$.
3515 *5*		H	
3522 *5*	2^+	H	
3556 *5*	(5^-)	H	
3578 *5*		H	
3590.2 *5*		C	
3602 *5*	2^+	C H	
3622 *5*	(2^+)	H	
3647 *5*	2^+	D H	

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{104}Pd Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
3666 *5*	4^+	H	J^{π}: ang. distribution in (p,p′).
3704 *5*		H	
3726 *5*	(4^+)	H	J^{π}: ang. distribution in (p,p′).
3738 *5*	4^+	H	J^{π}: ang. distribution in (p,p′).
3744 *5*	(5^-)	H	
3758 *5*	2^+	H	
3769.5[&] *5*	10^-	E	
3787 *5*	4^+	H	J^{π}: ang. distribution in (p,p′).
3833 *5*	2^+	H	
3849 *5*	2^+	H	
3873 *5*	(2^+)	H	
3903 *5*	(3^-)	H	
3934 *5*	4^+	H	J^{π}: ang. distribution in (p,p′).
3959 *5*	3^-	H	
4009.2 *5*	$1^+,2^+,3^+$	D	J^{π}: log *ft*=4.9 from 2^+.
4023.1[a] *3*	10^+	E M	
4029.7 *5*	$1^+,2^+,3^+$	D	J^{π}: log *ft*=5.3 from 2^+ parent.
4047.9[@] *3*	11^-	E	J^{π}: E2 γ to 9^-.
4202.4 *4*	(11^-)	E	J^{π}: 701$\gamma(\theta)$.
4635.0[a] *3*	12^+	E M	J^{π}: E2 γ to 10^+.
4648.5[&] *3*	12^-	E	J^{π}: E2 γ to 10^-.
4963.1[@] *3*	13^-	E	J^{π}: E2 γ to 11^-.
5432.1[a] *3*	14^+	E M	J^{π}: E2 γ to 12^+.
5681.2[&] *4*	14^-	E	J^{π}: E2 γ to 12^-.
6021.8[@] *4*	15^-	E	J^{π}: E2 γ to 13^-.
6358.3[a] *6*	16^+	E M	J^{π}: E2 γ to 14^+.
7422.4[a] *6*	18^+	E M	J^{π}: E2 γ to 16^+.
8616	(20^+)	M	J^{π}: γ to 18^+.
9873	(22^+)	M	J^{π}: γ to (20^+).
11237	(24^+)	M	J^{π}: γ to (22^+).
12707	(26^+)	M	J^{π}: γ to (24^+).
x[c]	(24)	M	J^{π}: γ to (22).
1263+x[b]	(26)	M	J^{π}: γ to (24).
2644+x[b]	(28)	M	J^{π}: γ to (26).
4155+x[b]	(30)	M	J^{π}: γ to (28).
5793+x[b]	(32)	M	J^{π}: γ to (30).
7556+x[b]	(34)	M	J^{π}: γ to (32).
9475+x[b]	(36)	M	J^{π}: γ to (34).
11554+x[b]	(38)	M	J^{π}: γ to (36).

† Level energy from least-squares adjustment.

‡ Unless indicated otherwise, J^{π} are based upon, $\gamma(\theta)$, linear polarization, $\gamma\gamma(\theta)$ from oriented nuclei. Members of ΔJ=2 sequences are connected by stretched E2.

Band(A): ΔJ=2 sequence. up to 8^+ built on g.s., see 1976Gr12.

@ Band(B): ΔJ=2 sequence. up to 15^- built on 9^-, see 1976Gr12.

& Band(C): ΔJ=2 sequence. up to 14^- built on 8^- level, see 1976Gr12.

a Band(D): ΔJ=2 sequence. up to 18^+ built on 10^+ level, see 1976Gr12.

b Band(E): Superdeformed ΔJ=2 band built on a (24) level, see 1988Ma38.

c x >9873.

$\gamma(^{104}Pd)$

E_i(level)	J^π_i	E_γ	I_γ‡	E_f	J^π_f	Mult.†	δ†	α#	Comments
555.81	2^+	555.796 *23*	100	0.0	0^+	E2		0.0045	B(E2)(W.u.)=36.9 *19*
1323.59	4^+	767.72 *8*	100	555.81	2^+	E2		0.0019	B(E2)(W.u.)=49 *7*
1333.59	0^+	777.8 *1*	100	555.81	2^+	E2			B(E2)(W.u.)=13.2 *13*
		1333.6 *1*		0.0	0^+	E0			Mult.: ρ^2=4.7×10^{-3} *14* (1986Lu06).
1341.68	2^+	785.86 *3*	100 *6*	555.81	2^+	E2			B(E2)(W.u.)=21.8 *17* δ: −4.8 *42*.
		1341.69 *4*	86 *5*	0.0	0^+	E2			B(E2)(W.u.)=1.29 *10*
1792.86	0^+	451.15 *22*	9.4 *9*	1341.68	2^+				
		1237.2 *1*	100 *6*	555.81	2^+	(E2)			B(E2)(W.u.)>25
1794.3	2^+	460.5 *4*	4 *1*	1333.59	0^+				I_γ: Iγ=16 in ^{104}Rh β^- decay (4.34 min).
		1238.0 *1*	100 *6*	555.81	2^+	M1			B(M1)(W.u.)>0.0073
		1794.0 *4*	10 *1*	0.0	0^+	(E2)			B(E2)(W.u.)>0.066
1820.65	3^+	479.1 *1*	24 *4*	1341.68	2^+	M1,E2			
		497.8 *6*	77 *8*	1323.59	4^+				I_γ: Iγ from ^{104}Rh β^- decay, Iγ=11 from ^{104}Ag ε decay.
		1265.03 *7*	100 *10*	555.81	2^+	M1+E2	0.23 *7*		
1941.2		617.0 *10*	100	1323.59	4^+				
1999.1	(1,2)	1999.1 *5*	100	0.0	0^+				
2082.38	4^+	740.67 *4*	95 *5*	1341.68	2^+	E2			B(E2)(W.u.)=25 *25*
		758.76 *5*	100 *5*	1323.59	4^+	M1+E2	−0.84 *24*		B(M1)(W.u.)=0.009 *9*; B(E2)(W.u.)=10 *10*
		1526.58 *5*	85 *8*	555.81	2^+	E2			B(E2)(W.u.)=0.6 *6*
2125.5		332.6 *2*	100	1792.86	0^+				
2138.7	0^+	1583.0 *2*	100	555.81	2^+				
2178.5		1622.8 *2*	100	555.81	2^+				
2181.56	4^+	839.7 *2*	12 *3*	1341.68	2^+				
		857.9 *1*	100 *10*	1323.59	4^+	M1+E2	0.45 *30*		
		1625.8 *1*	50 *5*	555.81	2^+	E2			
2193.4	(4^+)	1637.5 *5*	100	555.81	2^+				
2244.9	2^+	902.4 *6*	10 *2*	1341.68	2^+				
		1689.0 *2*	100 *10*	555.81	2^+				
2249.5	6^+	926.2 *1*	100	1323.59	4^+	E2			
2265.31	4^+	183.2 *3*	2 *1*	2082.38	4^+				
		444.5 *2*	7 *2*	1820.65	3^+	M1,E2			
		923.3 *5*	28 *3*	1341.68	2^+				
		941.7 *1*	100	1323.59	4^+	M1+E2	−0.64 *14*		
		1708.0 *5*	4 *1*	555.81	2^+				I_γ: from ^{104}Ag ε decay Iγ=1 from ^{104}Rh β^- decay.
2276.5	$1^+,2^+$	934.6 *2*	19 *2*	1341.68	2^+				
		1720.8 *4*	70 *7*	555.81	2^+	(M1)			
		2276.7 *4*	100 *8*	0.0	0^+				
2298.9	4^-	116.3 *2*	70 *10*	2181.56	4^+				
		215.6 *3*	95 *3*	2082.38	4^+				
		974.2 *2*	100 *20*	1323.59	4^+	E1(+M2)	0.5 *6*		

$^{104}_{46}Pd_{58}$-5

$\gamma(^{104}Pd)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ‡	E_f	J^π_f	Mult.†	δ†	α#	Comments
2298.9	4^-	1743.5 *5*		555.81	2^+				E_γ: not seen in $^{94}Zr(^{13}C,3n\gamma)$.
2337.9	$1^+,2^+$	996.1 *3*	24 *3*	1341.68	2^+				
		1781.8 *5*	100 *21*	555.81	2^+				
		2338.3 *4*	44 *8*	0.0	0^+				
2351.6		1028.1 *9*	100	1323.59	4^+				
2444.5	$4^+,5^+,6^+$	179.3 *3*	2	2265.31	4^+				
		263.2 *2*	40 *5*	2181.56	4^+	E2		0.0465	
		362.3 *2*	50 *10*	2082.38	4^+	M1,E2			
		623.2 *2*	100 *18*	1820.65	3^+				
		1120.5 *4*	33 *4*	1323.59	4^+				
		1889.9 *10*	30 *5*	555.81	2^+				
2456.6	(1,2,3)	1133.1 *4*	90 *10*	1323.59	4^+				
		1900.9 *5*	100 *10*	555.81	2^+				
2465		1132.1 *3*	100 *10*	1333.59	0^+				
		1909.8 *10*	21 *8*	555.81	2^+				
2479.0	1,2	1923.8 *5*	100	555.81	2^+				
		2478.3 *5*	100	0.0	0^+				
2491.4	5^-	193.4 *2*	13 *2*	2298.9	4^-	M1		0.063	
		309.7 *3*	8 *3*	2181.56	4^+				
		409.0 *2*	3.5 *3*	2082.38	4^+				
		1167.8 *1*	100 *5*	1323.59	4^+	E1			
2492.0		1936.1 *5*	100	555.81	2^+				
2521.4	2^+	1179.3 *2*	100 *10*	1341.68	2^+				
		1965.6 *5*	33 *7*	555.81	2^+				
2533.4	$(2,3)^+$	1191.5 *4*	21 *6*	1341.68	2^+				
		1977.5 *4*	100 *10*	555.81	2^+				
2570.3	4^+	1247.1 *5*	100 *20*	1323.59	4^+	(M1)			
2572.5		1230.7 *2*	100 *19*	1341.68	2^+				
		2016.9 *3*	81 *10*	555.81	2^+				
2613.4	$2^+,3^+$	1271.7		1341.68	2^+				E_γ: seen only in $^{104}Pd(n,n'\gamma)$.
		2613.4 *5*		0.0	0^+				E_γ: seen only in ^{104}Ag ε decay.
2622.2	(1,2,3)	1297.8 *3*	100	1323.59	4^+				
2626.9	$(1,2^+)$	2070.0 *3*		555.81	2^+				E_γ: seen only in $^{104}Pd(n,n'\gamma)$.
		2626.9 *4*		0.0	0^+				E_γ: seen only in ^{104}Ag ε decay.
2642.6	4^+	1300.0 *8*	33 *10*	1341.68	2^+				
		1318.2 *3*	100 *10*	1323.59	4^+				
		2086.8 *5*		555.81	2^+				E_γ: seen only in ^{104}Ag ε decay.
2667.7	5^-	1344.1 *2*	100	1323.59	4^+	E1+M2	−0.06 *5*		
2677.8	4^+	1354.3 *3*	100	1323.59	4^+				
2695.0	2^+	2139.2 *5*	100	555.81	2^+				
2714.8	(4,5,6)	1372.6 *9*	90 *30*	1341.68	2^+				

$^{104}_{46}Pd_{58}$-6

$\gamma(^{104}Pd)$ (continued)

E_i(level)	J^π_i	E_γ	I_γ‡	E_f	J^π_f	Mult.†	δ†	Comments
2714.8	(4,5,6)	1381.4 *8*	100 *30*	1333.59	0^+			
		1390.1 *11*	70 *30*	1323.59	4^+			
		2158.9 *5*	100 *30*	555.81	2^+			E_γ: seen only in ^{104}Ag ε decay.
2760.3	(4,5,6)	1418.5 *3*	100	1341.68	2^+			
2767.0	4^+	1425.0 *5*	100	1341.68	2^+			E_γ: seen only in ^{104}Ag ε decay.
		2210 *6*	3	555.81	2^+			E_γ: seen only in ^{104}Pd(n,n′γ).
2771.5		2215.6 *5*	100	555.81	2^+			
2774.5	4^+	1451.2 *5*	100 *16*	1323.59	4^+			
		2218.3 *5*	8 *5*	555.81	2^+			
2800.5	4^+	2244.6 *5*	100	555.81	2^+			
2866.0		1542.0	100 *19*	1323.59	4^+			
2875.2	(4,5,6)	1551.6 *7*	100	1323.59	4^+			
2900.8	6^-	233.2 *3*	16 *4*	2667.7	5^-	M1+E2	−0.02 *3*	
		409.5 *1*	100 *7*	2491.4	5^-	M1		
		602.8 *2*	47 *3*	2298.9	4^-	E2		
		651.0 *2*	42 *3*	2249.5	6^+	E1+M2	0.18 *8*	
2918.3	$(1,2,3)^+$	2362.4 *4*	100	555.81	2^+			
2924.2	$(4,5,6)^+$	659.3 *3*	45 *9*	2265.31	4^+			
		1600 *2*	100 *18*	1323.59	4^+			
2958.9	$4^-,5^-,6^-$	467.5 *5*	100	2491.4	5^-	M1+E2	0.28 *5*	
2960.5	$(2^+,3)$	1636.1 *5*	100	1323.59	4^+			
2975.5	(1,2,3)	2419.6 *4*	100	555.81	2^+			
2988.4	7^-	320.7 *3*	4 *1*	2667.7	5^-	E2		
		497.0 *1*	11 *2*	2491.4	5^-	E2		
		738.6 *1*	100 *5*	2249.5	6^+	E1(+M2)	−0.04 *2*	
2993.6	4^+	910.2 *4*		2082.38	4^+			E_γ: seen only in ^{104}Pd(n,n′γ).
		1652.1 *5*	100 *5*	1341.68	2^+			
		2437.3 *5*	33 *3*	555.81	2^+			
3000.3		1676.6 *5*	100 *20*	1323.59	4^+			
		3001.6 *12*	53 *20*	0.0	0^+			
3008.3	$(1,2^+)$	2452.2 *7*		555.81	2^+			E_γ: seen only in ^{104}Pd(n,n′γ).
		3008.3 *5*	100	0.0	0^+			
3013.5		3013.5 *9*	100	0.0	0^+			
3020.3		1696.8 *6*	100	1323.59	4^+			
3034.0	$(1,2^+)$	3034.0 *5*	100	0.0	0^+			
3078.5	$2^+,3^+$	2522.7 *4*	100	555.81	2^+			
3097.8	1,2	2540.4 *6*	100	555.81	2^+			
		3097.8 *5*	100	0.0	0^+			
3105.0	4^+	1022.9 *5*	18 *3*	2082.38	4^+	(M1)		
		1283.9 *4*	25 *3*	1820.65	3^+			
		1763.1 *5*	20 *6*	1341.68	2^+			

$^{104}_{46}Pd_{58}$-7

$\gamma(^{104}Pd)$ (continued)

E_i(level)	J_i^π	E_γ	I_γ‡	E_f	J_f^π	Mult.†	δ†	Comments
3105.0	4^+	1781.8 *4*	100 *18*	1323.59	4^+	(M1)		
		2549.0 *5*	2 *1*	555.81	2^+			
3112.8	$5^+,6^+$	863.0 *3*	100 *13*	2249.5	6^+	(M1)		
		1788.2 *5*	1 *1*	1323.59	4^+			
3113.3	(1,2,3)	2557.4 *5*	100	555.81	2^+			
3115.6		1792.0 *5*	100	1323.59	4^+			
3116.5	$1,2^{(+)}$	3116.0 *5*	100	0.0	0^+			
3136.9	4^+	955.3 *3*	60 *10*	2181.56	4^+			
		1813.7 *4*	100 *20*	1323.59	4^+			
		2582.3 *10*	5 *5*	555.81	2^+			
3151.8	8^-	163.4 *2*	31 *7*	2988.4	7^-	M1		
		250.97 *10*	100 *5*	2900.8	6^-	E2		
3157.9	4^+	892.6 *3*	10 *2*	2265.31	4^+			
		908.0 *3*	100 *12*	2249.5	6^+			
		1075.3 *3*	48 *8*	2082.38	4^+	(M1,E2)		
		1835.0 *5*	2 *1*	1323.59	4^+			
3179.3		2623.6 *4*	100	555.81	2^+			
3193.3	$(3^-,4^-)$	1869.7 *5*	100	1323.59	4^+			
3213.5	$1^+,2^+,3^+$	2657.5 *5*	22 *3*	555.81	2^+			
		3213.6 *5*	100 *13*	0.0	0^+			
3220.7	8^+	970.7 *1*	100	2249.5	6^+	E2		
3280.5	4^+	1956.9 *5*		1323.59	4^+			E_γ: seen only in ^{104}Ag ε decay.
		2726.1 *11*	100 *33*	555.81	2^+			
		3281.3 *11*	78 *22*	0.0	0^+			
3285.4	4^+	2729.5 *5*	100	555.81	2^+			
3309.6	4,5,6	1986.0 *4*	100	1323.59	4^+			
3333.8	$(3^-,4^-)$	1992.0 *5*	100	1341.68	2^+			
		2777.9 *5*	30	555.81	2^+			
3368.1	9^-	216.3 *3*	15 *2*	3151.8	8^-	M1+E2		
		379.7 *1*	100	2988.4	7^-	E2		
3408.0	$1^+,2^+,3^+$	2065.9 *5*	16 *3*	1341.68	2^+			
		2852.5 *5*	22 *3*	555.81	2^+			
		3407.8 *5*	100	0.0	0^+			
3421.8	(8^+)	201.1 *2*	33 *3*	3220.7	8^+	M1+E2	−0.15 *15*	
		1172.0 *2*	100 *5*	2249.5	6^+	E2		
3474.4	4^+	2918.8 *5*	100 *20*	555.81	2^+			
		3473.9 *5*	55 *5*	0.0	0^+			
3501.8	(9^-)	350.0 *2*	100	3151.8	8^-	M1+E2	0.22 *3*	
3590.2		2266.6 *5*	100	1323.59	4^+			
3769.5	10^-	401.4 *2*	12 *2*	3368.1	9^-	M1+E2	−1.0 *5*	
		617.7 *1*	100 *5*	3151.8	8^-	E2		

$^{104}_{46}Pd_{58}$-8

Adopted Levels, Gammas (continued)

γ(^{104}Pd) (continued)

E_i(level)	J_i^π	E_γ	I_γ‡	E_f	J_f^π	Mult.†	E_i(level)	J_i^π	E_γ	I_γ‡	E_f	J_f^π	Mult.†
4009.2	$1^+,2^+,3^+$	1382.4 *3*	100	2626.9	$(1,2^+)$		6358.3	16^+	926.2 *4*	100	5432.1	14^+	
		4009.0 *5*	3	0.0	0^+		7422.4	18^+	1064.2 *2*	100	6358.3	16^+	E2
4023.1	10^+	601.3 *2*	17 *2*	3421.8	(8^+)	E2	8616	(20^+)	1194	100	7422.4	18^+	
		802.5 *1*	100 *5*	3220.7	8^+	E2	9873	(22^+)	1257	100	8616	(20^+)	
4029.7	$1^+,2^+,3^+$	2705.3 *5*	100	1323.59	4^+		11237	(24^+)	1364	100	9873	(22^+)	
4047.9	11^-	679.8 *1*	100	3368.1	9^-	E2	12707	(26^+)	1470	100	11237	(24^+)	
4202.4	(11^-)	700.6 *2*	100	3501.8	(9^-)		1263+x	(26)	1263	100	x	(24)	
4635.0	12^+	611.9 *1*	100	4023.1	10^+	E2	2644+x	(28)	1381	100	1263+x	(26)	
4648.5	12^-	879.0 *1*	100	3769.5	10^-	E2	4155+x	(30)	1511	100	2644+x	(28)	
4963.1	13^-	915.3 *1*	100	4047.9	11^-	E2	5793+x	(32)	1638	100	4155+x	(30)	
5432.1	14^+	797.0 *1*	100	4635.0	12^+	E2	7556+x	(34)	1763	100	5793+x	(32)	
5681.2	14^-	1032.7 *2*	100	4648.5	12^-	E2	9475+x	(36)	1919	100	7556+x	(34)	
6021.8	15^-	1058.7 *2*	100	4963.1	13^-	E2	11554+x	(38)	2079	100	9475+x	(36)	

† From $\gamma(\theta)$ and linear polarization in ^{94}Zr (^{13}C,3nγ), and α(K)exp in (p,p′γ).

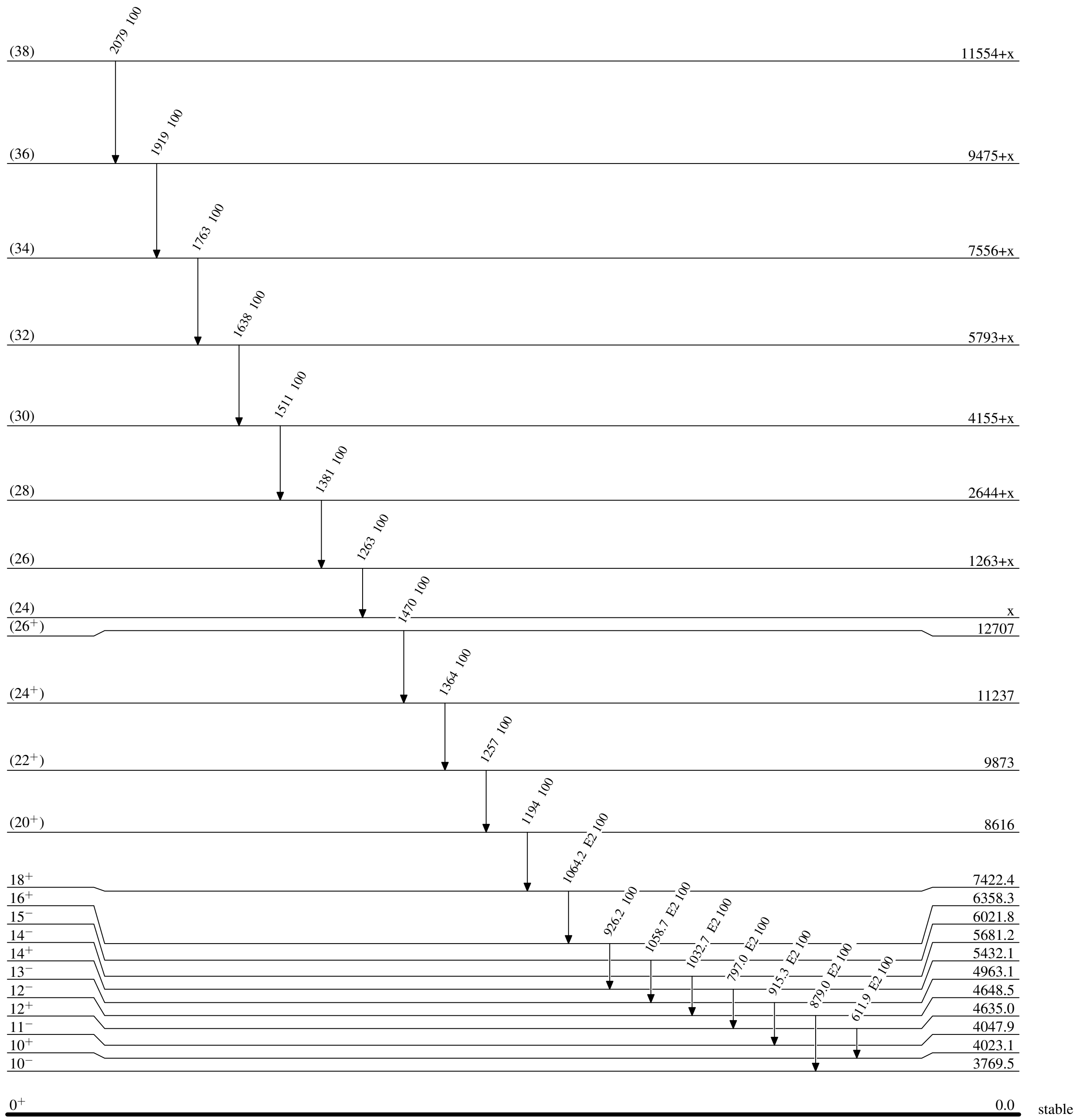
‡ Relative photon branching from each level.

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.

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

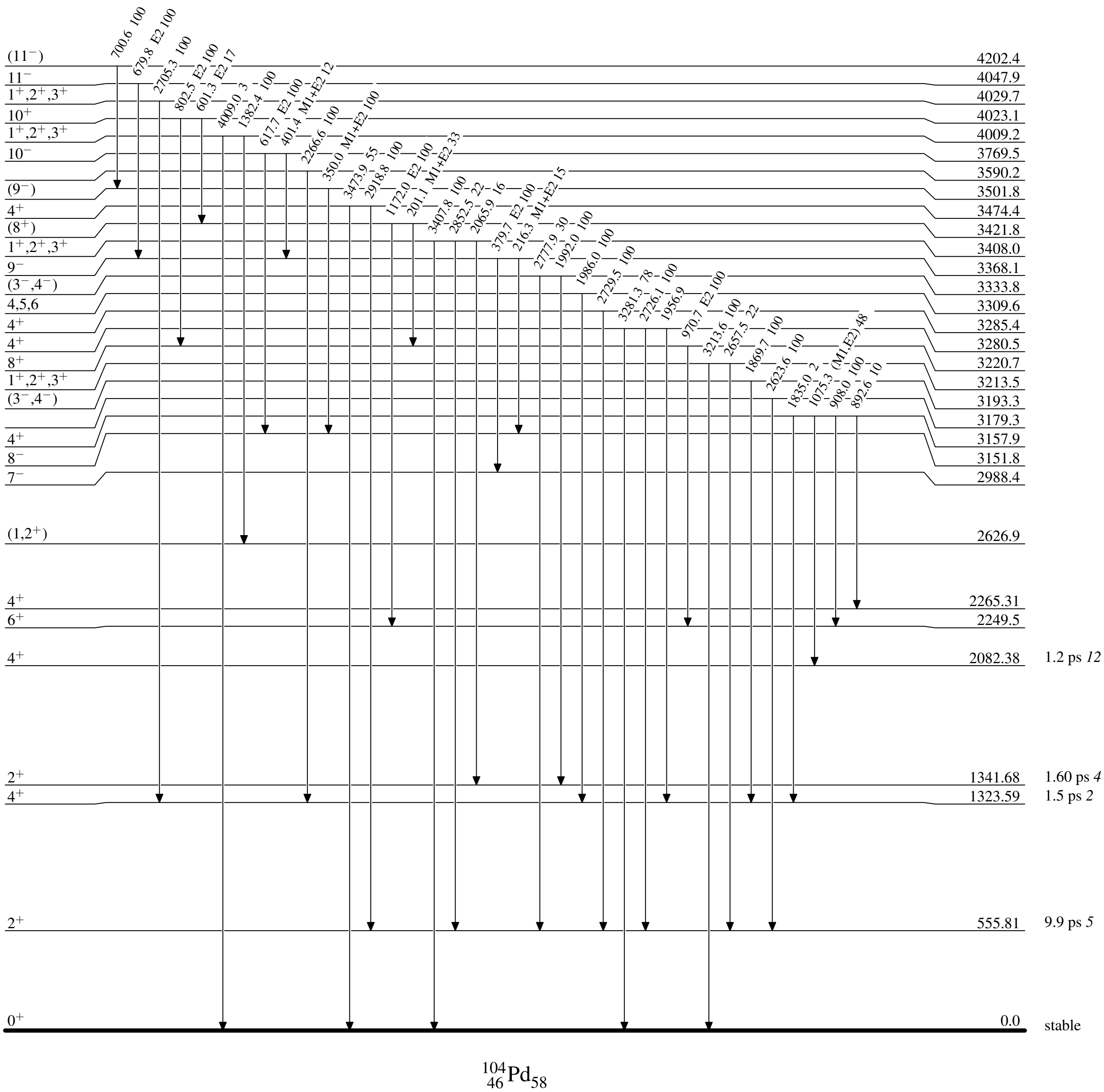


$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

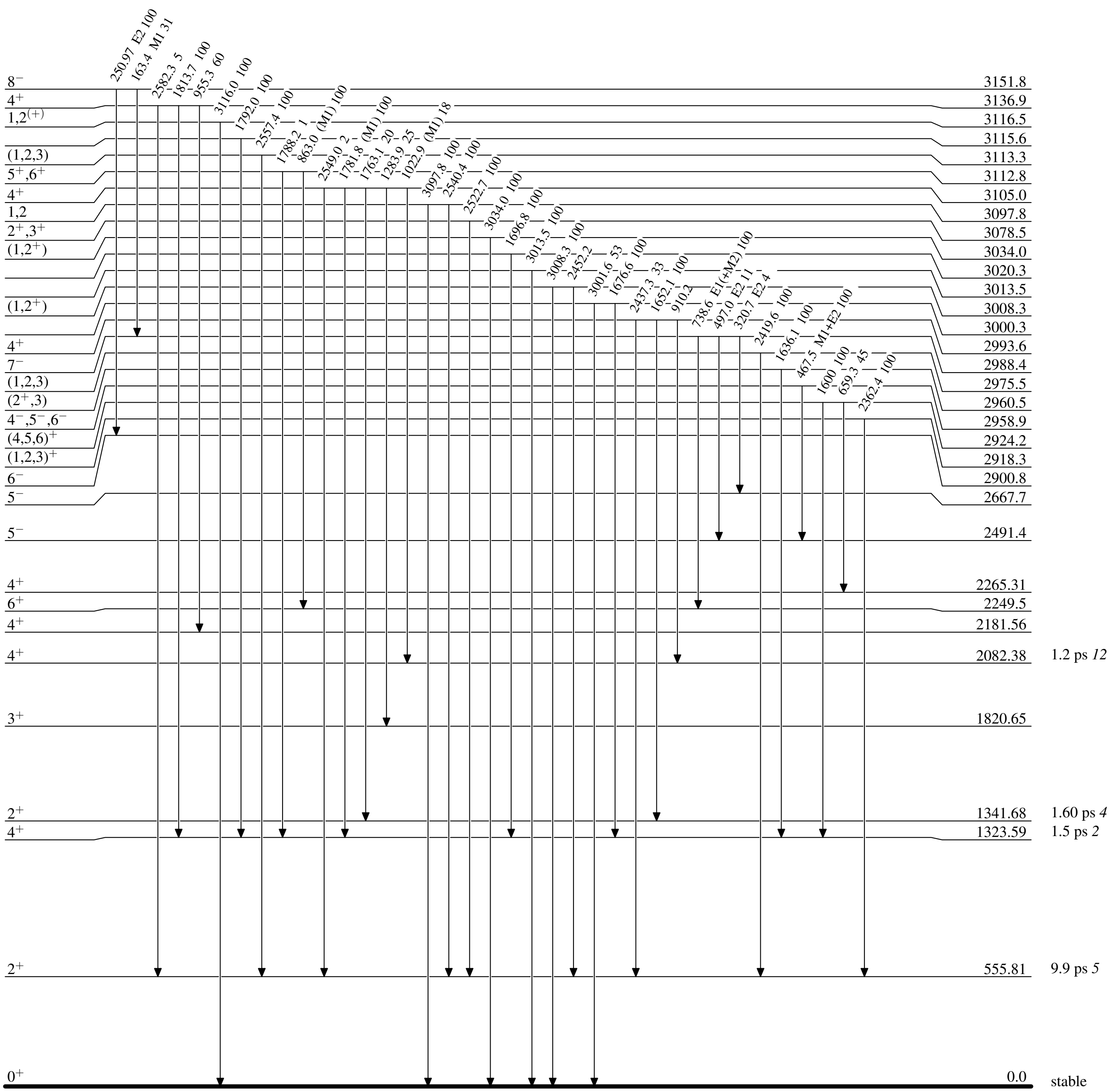
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

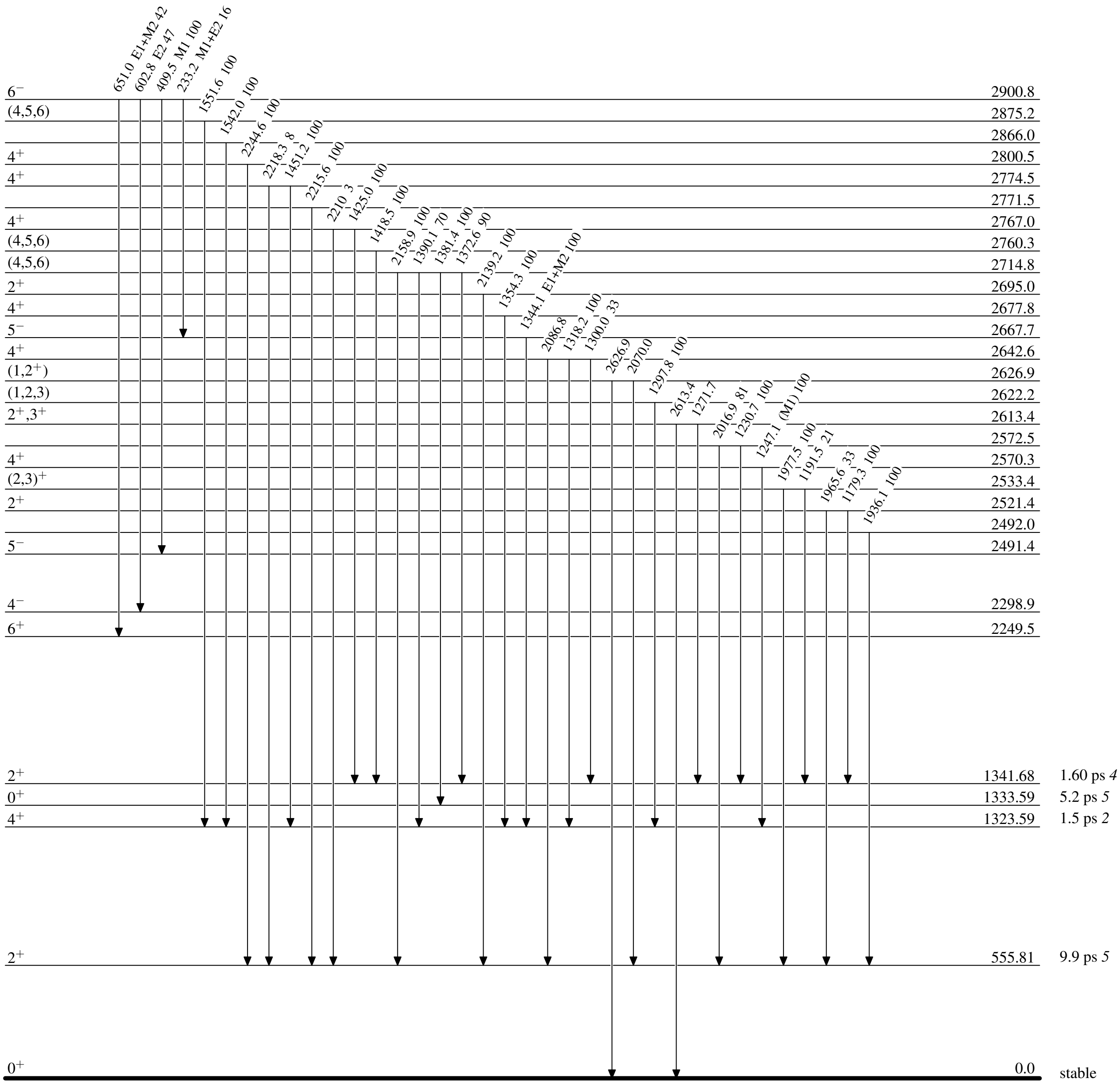


$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

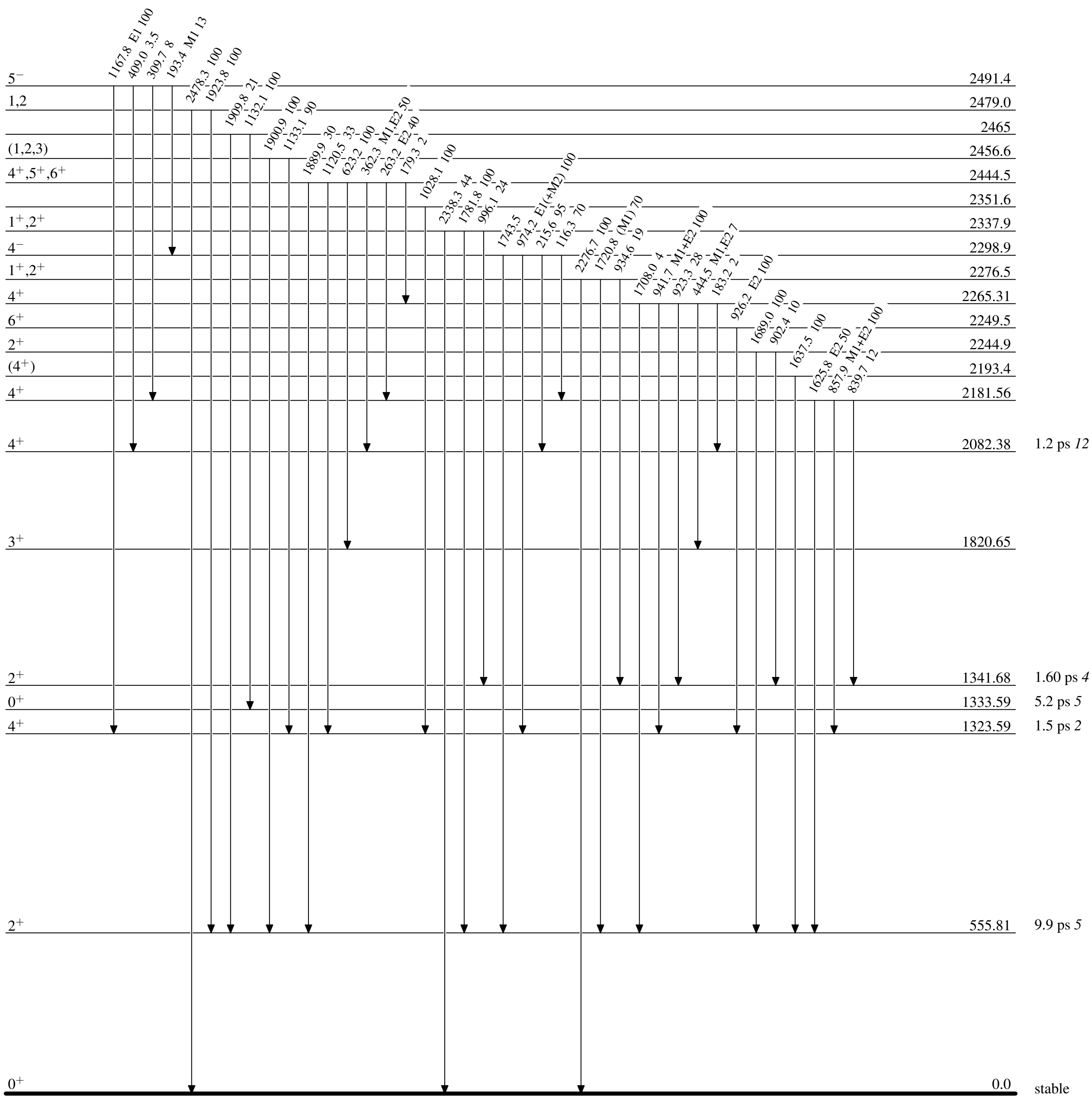


$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

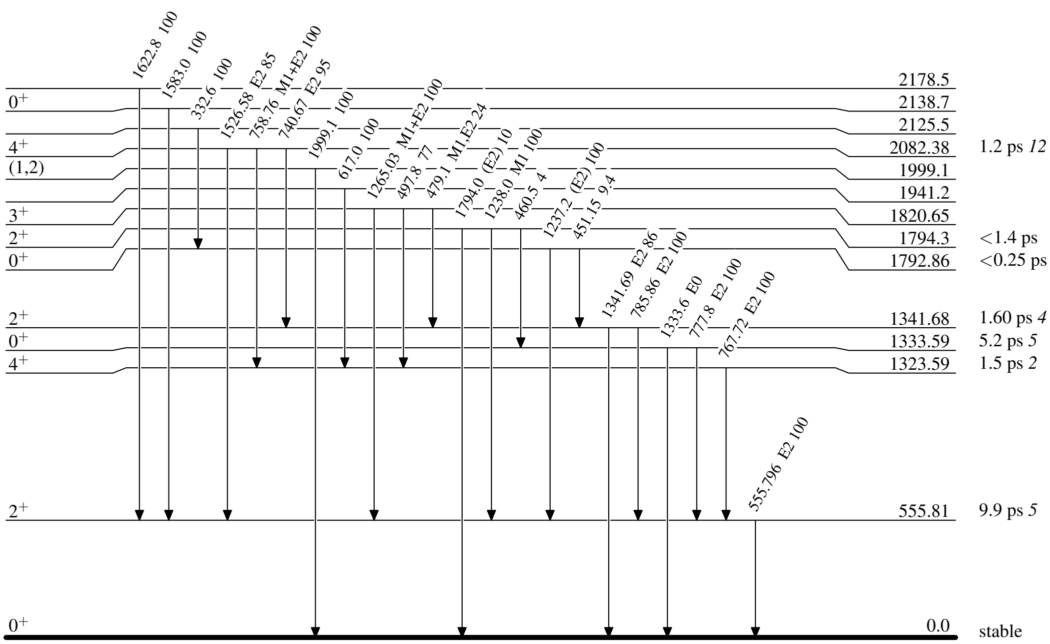


$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas

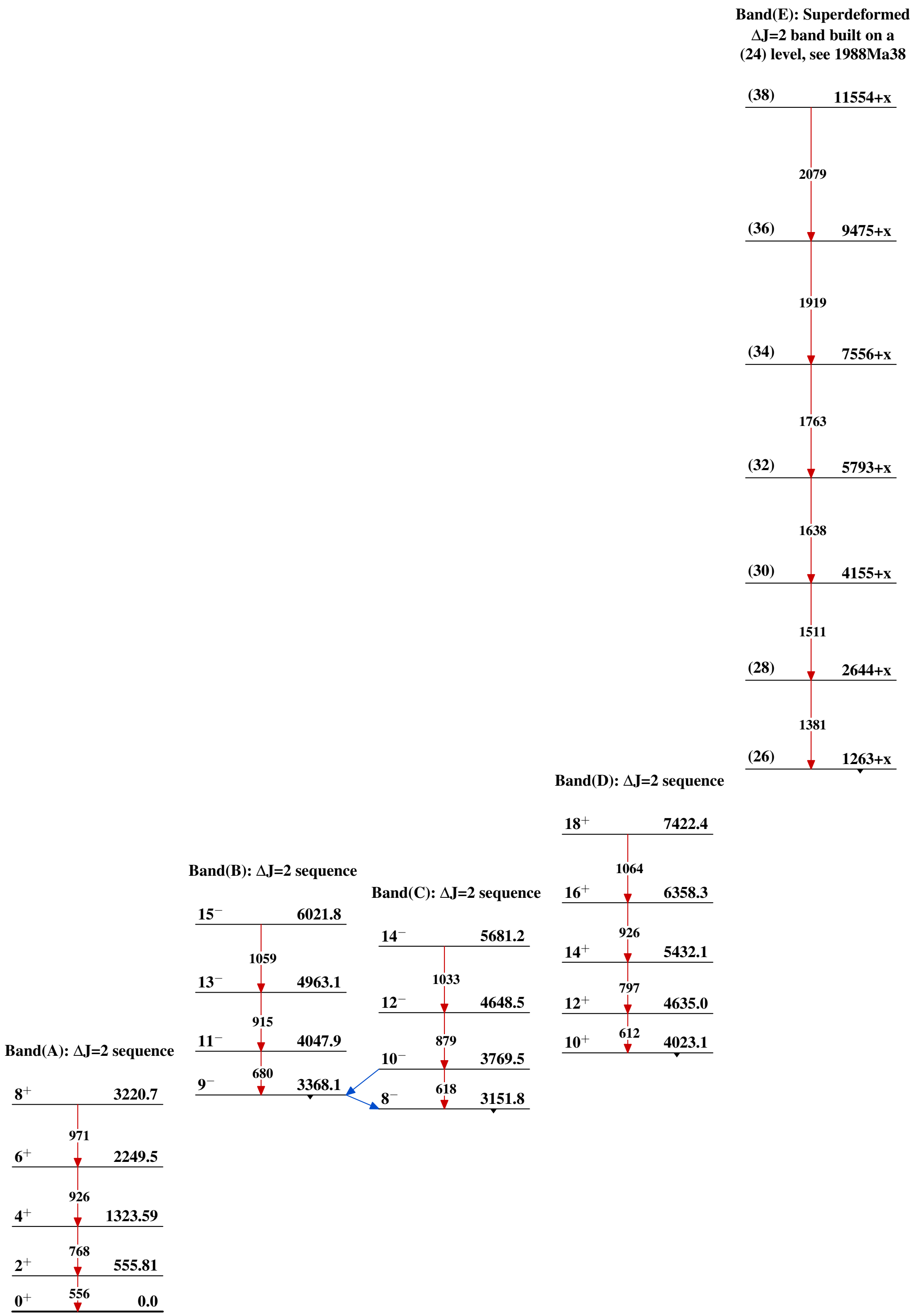
Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas



$^{104}_{46}Pd_{58}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. De Frenne and A. Negret	NDS 109, 943 (2008)	1-May-2007

Q(β^-)=−2965 *3*; S(n)=9561.0 *3*; S(p)=9345.8 *24*; Q(α)=−3229.4 *16* 2012Wa38
Note: Current evaluation has used the following Q record.
Q(β^-)=−2965 *3*; S(n)=9561.0 *3*; S(p)=9345.8 *25*; Q(α)=−3229 *4* 2003Au03

^{106}Pd Levels

Cross Reference (XREF) Flags

A	^{106}Rh β^- decay (30.07 s)	I	^{105}Pd(n,γ) E=res: av	Q	^{106}Pd(p,p′γ)
B	^{106}Rh β^- decay (131 min)	J	^{105}Pd(n,γ) E=2 keV res	R	^{106}Pd(α,α')
C	^{106}Ag ε decay (23.96 min)	K	^{105}Pd(n,γ) E=24 keV res	S	Coulomb excitation
D	^{106}Ag ε decay (8.28 d)	L	^{105}Pd(d,p)	T	^{108}Pd(p,t)
E	^{96}Zr(^{13}C,3nγ)	M	^{106}Pd(γ,γ')	U	^{109}Ag(p,α)
F	^{104}Ru(α,2nγ)	N	^{106}Pd(e,e′)	V	^{106}Cd 2β+ decay
G	^{105}Pd(n,γ),(n,e) E=thermal	O	^{106}Pd(n,n′γ)		
H	^{105}Pd(n,γ) E=resonance	P	^{106}Pd(p,p′),(d,d′)		

E(level)	J$^\pi$	T$_{1/2}$	XREF	Comments
0.0[a]	0$^+$	stable	ABCDEFGHIJKLMNOP RSTUV	rms charge radius: 4.5322 fm 28 (2004An14).
511.850[a] *23*	2$^+$	12.2 ps *4*	ABCDEFGHIJKLMNOP RSTUV	μ= 0.74 *3* Q=−0.51 *7* T$_{1/2}$: from B(E2)=0.670 *19* in Coul. ex. Others: 13.6 ps *44* via (γ,γ') (1977Ga06) 14.3 ps 4 from (e,ε') (1991We15). μ: Other: +0.80 4 (1989Ra17). J$^\pi$: L(p,t)=2. Q: Deduced from (e,e′) E=183,250 MeV (1973Ho05). Others: −0.56 8 or −0.41 and −0.51 7 (1989Ra17).
1128.02 *3*	2$^+$	3.12 ps *25*	ABCDEFGHIJKL NOP RSTUV	μ=+0.58 *9* T$_{1/2}$: from B(E2)=0.0175 *13* in Coul. ex. with branching (1128γ)=35.2% *6*. J$^\pi$: from E2 to g.s. μ: Other: +0.60 12 (1989Ra17).
1133.76 *4*	0$^+$	5.8 ps *13*	A C GH JK O RST V	J$^\pi$: from E0 to g.s. B(E2)[2+(511 keV) to 0+(1133 keV)]=0.021 *4*: weighted average of 0.018*4* (1969Ro05) and 0.026 *5*(1995Sv01) in Coul. ex. T$_{1/2}$: from B(E2)[2+(511 keV) to 0+(1133 keV)]=0.021 *4*.
1220			U	
1229.30[a] *4*	4$^+$	1.31 ps *18*	ABCDEFGHIJKL NOP RST	T$_{1/2}$: from B(E2)[2$^+$ (511 keV) to 4+(1229 keV)]=0.38 *3*. B(E2)[2$^+$ (511 keV) to 4+(1229 keV)]=0.38 *3* weighted average of B(E2)[2$^+$ (511 keV) to 4+(1229 keV)]=0.39 *5* (1969Ro05) and 0.38 *4* (1995Sv01). Other: 0.51 *9* (1962Ec03). J$^\pi$: L(p,t)=4.
1557.68 *4*	3$^+$		AB DEFGHIJK O	J$^\pi$: from M1+E2 to 2$^+$ state. E1 from 4$^-$.
1562.25 *3*	2$^+$		A CD FGHIJKL OP TU	J$^\pi$: L(p,t)=2 [E2].
1700			U	
1706.44 *5*	0$^+$	2.8 ps *5*	A C G IJK OP T	J$^\pi$: L(p,t)=0. T$_{1/2}$: From measured B(E2)(W.u.)=2.4 +0.4-0.3 and adopted branching for 1196γ in Coul. ex. (1995Sv01).
1904.21 *9*	2$^-$,3$^-$		G	J$^\pi$: from E1 347.14γ to 3$^+$ and 1158γ to 2$^+$.
1909.37[#] *16*	2$^+$		A C GHIJKL OP T	J$^\pi$: L(p,p′)=2.

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Adopted Levels, Gammas (continued)

^{106}Pd Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
1920			U	
1932.32 *6*	4^+	1.16 ps *16*	B DEFGHIJKL NOP T	J^π: L(p,p′)=4. $T_{1/2}$: From measured B(E2)(W.u.)=35 *+5−4* and adopted branching for 804γ in Coul. ex. (1995Sv01).
2001.48 *5*	0^+		A C GHIJK OP T	J^π: L(p,t)=0.
2076.69 *4*	4^+		F HI O	J^π: J=4 from (848γ)(717γ)(θ) and J^π=$(4)^+$ from av res n capture.
2077.01[a] *6*	6^+	0.49 ps *5*	B DEFG JK	J^π: E2 to 4^+. J=6 from strong E2 in cascade to g.s. $T_{1/2}$: From measured B(E2)(W.u.)=89 *+10−13* and adopted branching for 848γ in Coul. ex. (1995Sv01) via (^{13}C,3nγ) and (847γ)(θ).
2083.92 *5*	3^-	1.2 ps *3*	B DEFGHIJKL OP RST	$T_{1/2}$: from B(E3)=0.128 *19* (1969Ro05) and adopted gamma branching. J^π: E1 to 2^+. J=3 from (1572γ)(512γ)(θ), 1572γ(θ), J=2^-,3^- from av res n capture.
2229.20 *21*			EF	
2242.48 *5*	2^+		A C GHIJKL OP TU	J^π: L=2 (p,t), L=0 (d,p).
2278.11 *9*	0^+		A C G JK O	J^π: E2 to 1128(J^π=2^+) level. J=0 from (1766γ)(512γ)(θ), (1150γ)(1128γ)(θ).
2283.05 *5*	4^+		D GHIJKL OP R T	J^π: L(p,t)=4.
2305.62 *5*	4^-	2.0 ns *5*	B DEFGHIJK O T	$T_{1/2}$: from αγ(t) in ^{104}Ru(α,2nγ). J^π: E1 to 4^+, M1+E2 to 3^-. J=4 from (748γ)(1046γ)(θ); 222γ(θ).
2308.82 *5*	2^+		A C GHIJKL O U	J^π: L=2(+0)(d,p); J=2 from (1797γ)(512γ)(θ), (1181γ)(1128γ)(θ).
2350.86 *5*	4^+		B D FG IJKL O T	J^π: J=4 from L(p,t)=4.
2366.01 *5*	5^+		DEFGH JK O	J^π: π=+ from M1+E2 to 3^+ state. J=5 from av res data.
2397.41 *25*	$(5)^-$		DE G L P R TU	J^π: π=− from E1+M2 to 4^+. L=(5)(p,t). May be unresolved doublet with 2398 keV level in (p,t).
2400.84[†] *25*	2^-,3^-		GHIJK O	J^π: from av res n capture.
2439.10 *7*	2^+		A C G IJKL O T	J^π: L(p,t)=2.
2472.26[#] *10*	1^+,2^+		G I L O	J^π: L=2 (d,p); γ to 0^+.
2484.66 *20*	(1^-)		A GHIJK O	J^π: 1^-,4^- from av res n capture.
2495 *1*	1^-		P R	J^π: from L(p,p′)=1.
2500 *4*	2^+		A G TU	J^π: from L=2 (p,t), L=0+2 (d,p) but observed states are very probably unresolved multiplets.
2500.31 *8*	2^-		C HI L O	J^π: E1+M2 to 2^+. J from (1989γ)(512γ)(θ).
2578.56[#] *24*	(5^-)		DEFGHI L OP TU	J^π: L(p,p′)=5. 1,4^- from av res. γ to 4^+ eliminates J=1. In contradiction with L(d,p)=0+2 for unresolved doublet at 2578 keV. L(p,p′) eliminates also J^π=4^-.
2591.6[#] *4*	$(2,3)^+$		HI L O	J^π: for L(d,p)=0+2 for unresolved doublet at 2592 keV. J^π=2,3^+ from av res n capture.
2624.40 *5*	0^+		A C G O	J^π: J=0 from (1062γ)(1050γ)(θ), (2113γ)(512γ)(θ) π=+ from log *ft*=5.76 from ^{106}Rh (J^π=1^+) β^- decay.
2626.84 *9*	$(2,3)^+$		G I L	J^π: L=2 (d,p). J=$(2,3)^+$ from av res. Discrepancies exist for branching ratios of the 2626 and 3054 keV levels in (n,γ) and (n,n′γ) reactions due to unresolved doublet of 1498γ deexciting both levels.
2648.9[#] *5*	4^+		I L OP R T	J^π: L(p,p′)=4.
2699.37[@] *15*	$(6)^-$	0.5 ns *1*	EF L	$T_{1/2}$: from αγ(t) in ^{104}Ru(α,2nγ). J^π: ΔJ(301.99,M1+E2)=−1.
2705.30 *8*	$(1)^+$		A C I O	J^π: π=+ from M1+E2 to 2^+. J=(1) suggested by (2193γ)(512γ)(θ) and J^π=1,2^+ from γ decay pattern.
2712 *5*	(4^+)		P	J^π: L(p,p′)=(4) could be unresolved doublet with 2713.6 level

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Adopted Levels, Gammas (continued)

^{106}Pd Levels (continued)

E(level)	J$^{\pi}$	T$_{1/2}$	XREF	Comments
				L=2+0 for may be unresolved doublet in (d,p).
2713.89[†] 8	2$^+$,3$^+$		A G I L	J$^{\pi}$: L=2+0 (d,p) but this level could interfere with 2712 level for which L(p,p′)=(4) was observed.
2717.59 21			A	
2737			L T	
2741.0[#] 5	4$^+$		G OP	B(E4)↑=0.0113 8 XREF: P(2746). J$^{\pi}$: L(p,p′)=4.
2748.2[#] 4	2,3$^-$		HI O T	J$^{\pi}$: suggested from av res n capture (1971Co19).
2757.06 4	5$^+$	<3.6 ns	B D F L R	T$_{1/2}$: from (K x ray)(γ)(t) in ^{106}Ag ε decay (8.28 d). J$^{\pi}$: E2 to 3$^+$. J=5 from (1199γ)(1046γ)(θ), (1528γ)(717γ)(θ), (linear pol 1199γ)(1046γ)(θ) and γ-deexcitation pattern.
2775.9[#] 8	(4$^+$)		G T	J$^{\pi}$: L(p,t)=(4).
2783.74 21	2$^+$		A G I L OP T	J$^{\pi}$: L(p,p′)=2.
2793.67[@] 16	(7$^-$)		EF L	J$^{\pi}$: suggested from (396γ)(θ), linear pol 396γ data in ^{96}Zr(^{13}C,3nγ).
2820.97 9	2$^+$		A G L OP	J$^{\pi}$: L=0(+2) in (d,p) for E=2815 3. L(d,p)=0 gives J$^{\pi}$=2$^+$,3$^+$. γ to 0$^+$ rules out 3$^+$.
2828.29 9	0$^+$		A C G L T	J$^{\pi}$: π=+ from E2 to 2$^+$. J=0 from (2316γ)(512γ)(θ).
2847 5	(4$^+$)		I P	L(p,p′)=(4).
2850.6[#] 5	2$^+$,3$^+$		G L O	J$^{\pi}$: from L=2+0 (d,p).
2861.4[#] 4	($^+$)		G I O	J$^{\pi}$: π=(+) suggested from av res data.
2877.92 7	0$^+$		A C G I	J$^{\pi}$: π=+ from log ft=5.77 from ^{106}Rh (J$^{\pi}$=1$^+$). J=0 from (2366γ)(512γ)(θ).
2879 5	(1$^-$)		L P	J$^{\pi}$: L(p,p′)=(1).
2886.5[#] 7	($^-$)		G I O	J$^{\pi}$: π=(−) suggested from av res data.
2898.1[#] 7	(1$^-$,4$^-$)		G I O	J$^{\pi}$: suggested from av res data.
2902.48 10	2$^+$		A G L O	J$^{\pi}$: L=0(+2) (d,p). J=2,3 from (2391γ)(512γ)(θ) but J=3 excluded by γ transition to 0$^+$ g.s. state.
2908.7[#] 7	(1$^-$)		G I OP	J$^{\pi}$: L(p,p′)=(1).
2917.86 8	2$^+$		A G I L O T	J$^{\pi}$: M1+E2 to 2$^+$. J=2 from (2406γ)(512γ)(θ).
2930 5	4$^+$		G P	J$^{\pi}$: L(p,p′)=4.
2936.0[#] 6	(2$^-$,3$^-$)		I O	J$^{\pi}$: suggested from av res data.
2951.84 6	5$^+$	<2.0 ns	B D L	T$_{1/2}$: from (K x-ray)(γ)(t) (1968We16) in ^{106}Ag ε decay (8.28 d). J$^{\pi}$: E1 to 4$^-$. J=5 from (linear pol 1394γ)(1046γ)(θ).
2963.0[&] 4	8$^+$	0.33 ps 7	EF	J$^{\pi}$: E2 to 6$^+$. J=8 from strong E2 in cascade to g.s. in ^{96}Zr(^{13}C,3nγ). T$_{1/2}$: From measured B(E2)(W.u.)=107 +13−26 and adopted branching for 886γ in Coul. ex. (1995Sv01) in (^{13}C,3nγ).
2968.68 21	3$^-$		A GHI OP T	J$^{\pi}$: L(p,p′)=3. E(level): taken from ^{106}Rh β^- decay (29.8 s).
2977.4[†] 20	+		I L	J$^{\pi}$: π=+ from L=4+2 (d,p).
2977.93[@] 21	(7$^-$)		E U	J$^{\pi}$: suggested from 901γ(θ), $\gamma\gamma$(θ) data in (^{13}C,3nγ).
2998.77[@] 16	(8$^-$)	<0.2 ns	EF	T$_{1/2}$: from $\alpha\gamma$(t) in ^{104}Ru(α,2nγ). J$^{\pi}$: suggested from (205,299γ)(θ), 299γ linear pol data and γ-decay pattern.
3026[‡] 3	+		L	J$^{\pi}$: π=+ from L=2 (d,p).
3037.32 17	1,2		A G O	J$^{\pi}$: suggested from γ decay pattern in ^{106}Rh β- decay (30.07 s).
3042.7[†] 25	4$^+$		I L P	J$^{\pi}$: L(p,p′)=4.

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Adopted Levels, Gammas (continued)

^{106}Pd Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
3054.97 *9*	1^+		A G I L O	J^π: π=+ from log *ft*=5.73 from ^{106}Rh(J^π=1$^+$). J=1 from (2543γ)(512γ)(θ).
3069 *5*	2^+		L P	J^π: L(p,p′)=2.
3069.9# *6*	$(2,3)^-$		G I O	J^π: J^π=(2,3$^-$) suggested from av res data. π=− from (n,γ).
3083.91 *18*	0		A L OP	J^π: J=0 from (2571γ)(512γ)(θ) in ^{106}Rh β^- decay (30.07 s).
3097‡ *3*	$(1^-,2^+)$		L	E(level): weighted average of 3098 *3* (d,p) and 3093 *5* (p,p′). J^π: L=2 (d,p). L(p,p′)=(1,2).
3120.0# *10*	$2^+,3^+$		L O	J^π: L(d,p)=0+2.
3123 *5*	(6^+)		P	J^π: from L(p,p′)=(6).
3144‡ *3*	$2^+,3^+$		L	J^π: L=0 (d,p).
3161.0 *5*	2^+		L O	J^π: L(p,p′)=2.
3163.7 *3*	$(1,2^+)$		A OP	J^π: γ to 0^+.
3173.8# *6*	$(2^+,3^+)$		G L O	J^π: L(d,p)=0+2; however, 1969Di14 suggest possible doublet, γ′s to 2^+ and 3^+.
3176.77@ *20*	(8^-)		EF	J^π: J=8 from ΔJ(383γ,D+Q)=−1 in ^{96}Zr(^{13}C,3nγ). γ to 6^-.
3217 *5*	3^-		P T	J^π: L(p,p′)=3.
3221.37 *25*	0^+		A G	J^π: π=+ from log *ft*=5.51 in ^{106}Rh β^- decay(J^π=1$^+$). J=0 from (2710γ)(512γ)(θ).
3249.9 *5*	2^+		A P T	J^π: L(p,p′)=2 for E=3250 *5*. L(p,t)=(2) for E=3251 *4*.
3252.0 *4*	2^+		A	J^π: L(p,p′)=2 for E=3250 *5*. L(p,t)=(2) for E=3251 *4*.
3273.5 *7*	1,2		A	J^π: γ to 0^+.
3275 *5*	3^-		P	J^π: L(p,p′)=3.
3289.65@ *16*	(9^-)	0.2 ns *1*	EF	$T_{1/2}$: from αγ(t) in ^{104}Ru(α,2nγ). J^π: J=9: ΔJ(496γ,E2 to 7^-)=−2.
3299.2 *7*			A	
3320.5 *3*	0^+		A G	J^π: π=+ from log *ft*=5.63 from ^{106}Rh β^- decay (J^π=1$^+$). J=0 from (2809γ)(512γ)(θ).
3321 *5*	5^-		P	J^π: L(p,p′)=5.
3359 *5*	$(5^-,6^+)$		P	J^π: L(p,p′)=(5,6).
3397 *5*	4^+		A P	J^π: L(p,p′)=4.
3414 *5*	3^-		P	J^π: L(p,p′)=3.
3449 *5*	2^+		P	J^π: L(p,p′)=2.
3461.89@ *20*	$9^{(-)}$	0.25 ns *10*	EF	$T_{1/2}$: from αγ(t) in ^{104}Ru(α,2nγ). J^π: J=9 from ΔJ(285γ,D+Q) to(8^-)=−1 and ΔJ(463γ,D+Q)=−1 to (8^-) in (^{13}C,3nγ).
3490 *5*	2^+		P	J^π: L(p,p′)=2.
3532 *5*	(5^-)		P	J^π: L(p,p′)=(5).
3533.5@ *4*	10^+		EF	J^π: E2 to 8^+. J=10 from ΔJ(570γ,E2 from this level)=−2.
3575 *5*	5^-		P	J^π: L(p,p′)=5.
3607 *5*	(3^-)		P	J^π: L(p,p′)=(3).
3647 *5*	2^+		P	J^π: L(p,p′)=2.
3654.16 *20*	$10^{(-)}$		EF	J^π: from ΔJ(65γ,Q)=−2. Q to 8^- in (^{13}C,3nγ).
3708 *5*	(5^-)		P	J^π: L(p,p′)=(5).
3761 *5*	3^-		P	J^π: L(p,p′)=3.
3805 *5*	(3^-)		P	J^π: L(p,p′)=(3).
3825 *5*	3^-		P	J^π: L(p,p′)=3.
3874.80@ *12*	(10^-)		E	J^π: suggested from (E2) to (8^-) in (^{13}C,3nγ).
3879 *5*	3^-		P	J^π: L(p,p′)=3.
3903 *5*	3^-		P	J^π: L(p,p′)=3.
3938 *5*	2^+		P	J^π: L(p,p′)=2.
3949.1& *5*	(10^+)		EF	J^π: suggested from (E2) to 8^+ in (^{13}C,3nγ).
3998 *5*	4^+		P	J^π: L(p,p′)=4.

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Adopted Levels, Gammas (continued)

^{106}Pd Levels (continued)

E(level)	J^π	XREF	Comments
4021.73[@] *11*	$11^{(-)}$	EF	J^π: J=11 from ΔJ(732γ,Q)=−2 and Q in (^{13}C,3nγ).
4042 *5*	4^+	P	J^π: L(p,p′)=4.
4054 *5*	2^+	P	J^π: L(p,p′)=2.
4088.7[@] *1*	12^+	E	J^π: π=+ from E2 to 10^+. J=12 from ΔJ(555γ,E2)=−2 in (^{13}C,2nγ).
4106 *5*	4^+	P	J^π: L(p,p′)=4.
4134 *5*	3^-	P	J^π: L(p,p′)=3.
4156 *5*	3^-	P	J^π: L(p,p′)=3.
4193 *5*		P	
4224 *5*	4^+	P	J^π: L(p,p′)=4.
4259.8[@] *4*	(11^-)	E	J^π: suggested from (798γ)(γ)(θ) in (^{13}C,2nγ).
4640.2[@] *4*	(12^-)	E	J^π: suggested from (986γ)(γ)(θ) in (^{13}C,2nγ).
4721.8[@] *4*	$12^{(+)}$	E	J^π: from ΔJ(1188γ,Q)=−2 to 10^+ in (^{13}C,2nγ).
4752.3 *4*	(12^-)	E	J^π: Suggested from γ decay pattern in ^{96}Zr(^{13}C,3nγ).
4893.8[@] *3*	14^+	E	J^π: π=+ from E2 to 12^+. J=14 from ΔJ(805γ,E2)=−2 to 12^+ in (^{13}C,2nγ).
4990.1[@] *4*	(13^-)	E	J^π: suggested from 968γ(θ) in (^{13}C,2nγ).
5106.6[@] *6*	(12^+)	E	J^π: suggested from 1018γ(θ) in (^{13}C,2nγ).
5404.0[@] *5*	(14^+)	E	J^π: suggested from (682,1315γ)(γ)(θ) in (^{13}C,2nγ).
5895.0[@] *6*	(16^+)	E	J^π: suggested from doublet(1000,1001γ)(θ) in (^{13}C,2nγ).

† From ^{105}Pd(n,γ).
‡ From ^{105}Pd(d,p).
# From ^{106}Pd(n,n′γ).
@ From ^{96}Zr(^{13}C,3nγ).
& From ^{96}Zr(^{13}C,3nγ); possible member of ΔJ=2 band built on g.s.
a Band(A): Possible member of ΔJ=2 band built on g.s. for more details see 1976Gr12 in ^{96}Zr(^{13}C,3nγ).

$\gamma(^{106}Pd)$

E_i(level)	J_i^π	E_γ †	I_γ †	E_f	J_f^π	Mult. b	δ c	Comments
511.850	2^+	511.842 *28*	100	0.0	0^+	E2		B(E2)(W.u.)=44.3 *15* BE2W=50 +7-5 from Coul. ex. (1995Sv01).
1128.02	2^+	616.174 *24*	100.0 *24*	511.850	2^+	M1+E2+E0	−9.4 *20*	B(M1)(W.u.)=0.00022 *10*; B(E2)(W.u.)=44 *4* B(E2)(W.u.)=39 *4* from Coul. ex. (1995Sv01).
		1128.00 *6*	54.4 *8*	0.0	0^+	E2		B(E2)(W.u.)=1.17 *10* B(E2)(W.u.)=0.87 *10* from Coul. ex. (1995Sv01).
1133.76	0^+	6 *1*		1128.02	2^+	[E2]		E_γ: Deduced from level scheme in Coul. ex. (1995Sv01). B(E2)(W.u.)=19 *+7−3* in Coul. ex. (1995Sv01).
		621.94 *3*	100.0 *12*	511.850	2^+	E2		B(E2)(W.u.)=35 *8* B(E2)(W.u.)=43 *+6−9* in Coul. ex. (1995Sv01).
		1133.7 *7*		0.0	0^+	E0		I(γ+ce)=0.057 *6*.
1229.30	4^+	101 *1*		1128.02	2^+	[E2]		E_γ: calculated from level scheme in (1995Sv01). B(E2)(W.u.)=0.7 +7.2-0.3 in Coul. ex. (1995Sv01).
		717.24 *6*	100	511.850	2^+	E2		B(E2)(W.u.)=76 *11* B(E2)(W.u.)=71 *7* in Coul. ex. (1995Sv01).
1557.68	3^+	328.460 *20*	3.86 *17*	1229.30	4^+	E2(+M1)		Mult.: No δ given in ^{106}Rh β^- decay (131 min).
		429.64 *5*	44.5 *12*	1128.02	2^+	M1+E2	−7.9 *8*	
		1045.83 *8*	100 *5*	511.850	2^+	M1+E2	−3.8 *4*	
1562.25	2^+	333 *1*		1229.30	4^+			E_γ: Deduced by evaluators from level scheme in Coul. ex. (1995Sv01). B(E2)(W.u.)=5.3 +2.5-1.4 in Coul. ex. (1995Sv01).
		428.56 *9*	4.53 *13*	1133.76	0^+	[E2]		B(E2)(W.u.)=39 *4* in Coul. ex. (1995Sv01).
		434.25 *21*	1.30 *13*	1128.02	2^+	[E2]		B(E2)(W.u.)=10.2 +2.2-1.5 in Coul. ex. (1995Sv01).
		1050.39 *5*	100.0 *17*	511.850	2^+	(M1+E2)	+0.24 *1*	B(E2)(W.u.)=0.52 +0.10-0.07 in Coul. ex. (1995Sv01).
		1562.24 *5*	10.43 *12*	0.0	0^+			B(E2)(W.u.)=0.14 *2* in Coul. ex. (1995Sv01).
1706.44	0^+	578.38 *9*	15.1 *11*	1128.02	2^+	E2		B(E2)(W.u.)=14 *3* B(E2)(W.u.)=13 *+3−2* in Coul. ex. (1995Sv01).
		1194.53 *4*	100.0 *7*	511.850	2^+	E2		B(E2)(W.u.)=2.4 *5* Mult.: from α(K)exp in (n,γ). M1 excluded if J^π for the initial and final states are correct. B(E2)(W.u.)=2.4 +0.4-0.3 in Coul. ex. (1995Sv01).
1904.21	$2^-,3^-$	347.14 *13*	≤198	1557.68	3^+	E1		Mult.: from α(K)exp=0.0041 *10* for the 346.59+347.14 γ transitions. E_γ: No final level within 0.48 keV.
		775.75 *11*	100 *11*	1128.02	2^+			
1909.37	2^+	781.6# *5*	2.8# *9*	1128.02	2^+			
		1397.4# *2*	100.0# *10*	511.850	2^+			
		1909.5# *3*	35# *4*	0.0	0^+			
1932.32	4^+	374.46 *13*	2.12 *28*	1557.68	3^+	M1(+E2)		

$^{106}_{46}Pd_{60}$-6

$\gamma(^{106}Pd)$ (continued)

E_i(level)	J_i^π	E_γ†	I_γ†	E_f	J_f^π	Mult.[b]	δ[c]	Comments
1932.32	4+	703.11 *7*	35.8 *13*	1229.30	4+	M1+E2	−2.30 *2*	B(M1)(W.u.)=0.0022 *4*; B(E2)(W.u.)=21 *3* B(E2)(W.u.)=23 +*3*−*2* in Coul. ex. (1995Sv01).
		804.34 *13*	100 *4*	1128.02	2+	E2		B(E2)(W.u.)=35 *6* B(E2)(W.u.)=35 +*5*−*4* in Coul. ex. (1995Sv01).
		1419.4 *8*	0.28 *14*	511.850	2+			B(E2)(W.u.)=0.007 +0.006-0.003 in Coul. ex. (1995Sv01).
2001.48	0+	439.19 *26*	2.9 *5*	1562.25	2+			
		873.48 *4*	100.0 *12*	1128.02	2+	E2		
		1489.60 *19*	0.75 *13*	511.850	2+			
		2002 *1*		0.0	0+	E0		Mult.: from conversion data in ^{105}Pd(n,γ)(n,e).
2076.69	4+	847.270 *20*	100 *33*	1229.30	4+	E2		
		949.52 *25*	12.2 *22*	1128.02	2+			E_γ: No final level within 0.79 keV.
		1565.76 *11*	5.9 *7*	511.850	2+			E_γ: No final level within 0.48 keV.
2077.01	6+	848.0 *2*	100	1229.30	4+	E2		B(E2)(W.u.)=88 *9* B(E2)(W.u.)=89 +*10*−*13* in Coul. ex. (1995Sv01).
2083.92	3−	522.30 *30*	1.33 *27*	1562.25	2+			
		956.22 *22*	7.2 *12*	1128.02	2+			
		1572.35 *15*	100 *8*	511.850	2+	E1		B(E1)(W.u.)=5.9×10^{-5} *17*
		2084.0 *4*	0.35 *7*	0.0	0+	[E3]		B(E3)(W.u.)=29 *10*
2229.20		999.9 *2*	100	1229.30	4+			
2242.48	2+	680.22 *8*	78 *14*	1562.25	2+	M1,E2		Mult.: from α(K)exp in (n,γ). α(K)exp also consistent with E1+M2 with δ=0.4.
		684.80 *20*	42.8 *16*	1557.68	3+			
		1108.76 *12*	47 *4*	1133.76	0+			
		1114.48 *5*	100 *7*	1128.02	2+	M1+E2	+1.5 +*3*−*2*	
		1730.35 *23*	17.9 *13*	511.850	2+			
		2242.46 *12*	15.8 *7*	0.0	0+			
2278.11	0+	715.90 *20*	29.2 *12*	1562.25	2+			
		1150.20 *20*	8.9 *6*	1128.02	2+	[E2]		
		1766.20 *10*	100.0 *18*	511.850	2+	E2		Mult.: from α(K)exp in ^{105}Pd(n,γ)(n,e).
2283.05	4+	1053.77 *21*	100 *15*	1229.30	4+	M1,E2		Mult.: from α(K)exp in (n,γ).
		1771.1 *3*	4.2 *7*	511.850	2+			
2305.62	4−	221.701 *10*	32.3 *11*	2083.92	3−	M1+E2	−0.11 *2*	B(M1)(W.u.)=0.00022 *6*; B(E2)(W.u.)=0.048 *21*
		228.630 *20*	10.2 *5*	2077.01	6+			E_γ: No final level within 0.13 keV. E1 suggested in ^{106}Rh β^- decay (131 min) but impossible if J^π(2305)=4− and J^π(2077)=6+.
		748.44 *7*	100.0 *26*	1557.68	3+	E1		B(E1)(W.u.)=2.5×10^{-7} *7* E_γ: No final level within 0.33 keV.
		1077.2 *5*	0.26 *9*	1229.30	4+			
		1178.07 *21*	0.94 *13*	1128.02	2+	[M2]		B(M2)(W.u.)=0.0020 *6*
		1794.01 *27*	0.18 *7*	511.850	2+	[M2]		B(M2)(W.u.)=4.7×10^{-5} *22*
2308.82	2+	751.30 *20*	3.9& *8*	1557.68	3+			
		1180.72 *6*	52.6& *13*	1128.02	2+	M1+E2	−0.06 *12*	
		1796.97 *7*	100.0& *15*	511.850	2+	M1+E2	+0.25 *2*	

γ(^{106}Pd) (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[b]	δ[c]	Comments
2308.82	2+	2309.30 *20*	≤9.0[&]	0.0	0+			I_γ: taken from ^{106}Rh β^- decay using the ratio Iγ(2309 from 2309) /Iγ(1180γ+1797γ)≤0.051 *8* from ε decay but taking into account the division of the I(2309γ) of the doublet of 2309γ between 2308 and 2821 levels.
2350.86	4+	418.71 *28*	5.2 *10*	1932.32	4+			
		793.30 *25*	83 *4*	1557.68	3+	M1+E2	−7.5 *15*	
		1121.60 *18*	8.1 *9*	1229.30	4+			
		1222.88 *12*	100 *5*	1128.02	2+	E2		
		1839.05 *10*	29 *4*	511.850	2+	E2		
2366.01	5+	433.9 *4*	2.2 *9*	1932.32	4+			
		808.37 *10*	100 *5*	1557.68	3+	(M1+E2)	+1.0 *8*	Mult.: deduced under the assumption J^π(2365)=4+. γγ(θ) also consistent with mult(808γ)=E2 and J^π(2365)=5+. M1 fraction impossible if J^π(2566)=5+ and J^π(1557)=3+.
		1136.85 *19*	5.7 *7*	1229.30	4+			
2397.41	(5)−	1168.25 *25*	100	1229.30	4+	E1+M2	−0.04 *2*	
2400.84	2−,3−	1272.4 *3*	100 *12*	1128.02	2+			
		1889.7 *4*	52 *12*	511.850	2+			
2439.10	2+	1209.80 *20*	2.9 *7*	1229.30	4+			
		1305.20 *20*	8.7 *9*	1133.76	0+			
		1927.27 *10*	100.0 *26*	511.850	2+	[M1+E2]	−0.07 *+3−7*	
		2439.07 *12*	30.1 *13*	0.0	0+	[E2]		
2472.26	1+,2+	471.5[#] *2*	[#]	2001.48	0+			
		765.67[‡] *12*	83[‡] *8*	1706.44	0+			
		1960.17[‡] *20*	100[‡] *17*	511.850	2+			
2484.66	(1−)	1973.5 *10*	20 *11*	511.850	2+			
		2484.60 *20*	100 *7*	0.0	0+			
2500.31	2−	942.6 *4*	2.2 *5*	1557.68	3+			
		1372.30 *30*	7.9 *7*	1128.02	2+			
		1988.44 *8*	100.0 *8*	511.850	2+	E1+M2	−0.05 *+3−5*	
2578.56	(5−)	1020.7[#] *3*	50[#] *8*	1557.68	3+			
		1349.5[#] *6*	100[#] *11*	1229.30	4+			
2591.6	(2,3)+	659.3[#] *3*	100[#]	1932.32	4+			
2624.40	0+	1062.14 *5*	92.9 *12*	1562.25	2+			
		1496.33 *13*	64.5 *18*	1128.02	2+			
		2112.54 *6*	100 *5*	511.850	2+	[E2]		
2626.84	(2,3)+	1064.60[‡] *11*	12[‡a] *2*	1562.25	2+			
		1498.80[‡] *20*	≤100[‡a]	1128.02	2+			Discrepancies exist for branching ratios of the 2626 and 3054 keV levels in (n,γ) and (n,n′γ) due to unresolved doublet of 1498γ deexciting both levels.
		2114.95[‡] *13*	49[‡a] *7*	511.850	2+			
2648.9	4+	1086.5[#] *5*	100[#]	1562.25	2+			

From ENSDF

$^{106}_{46}$Pd$_{60}$-8

$\gamma(^{106}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[b]	δ[c]	Comments
2699.37	(6)$^-$	301.99[@] *10*	100[@] *3*	2397.41	(5)$^-$	M1+E2	+0.64 *22*	B(M1)(W.u.)=0.0010 *3*; B(E2)(W.u.)=3.9 *21*
		393.36[@] *20*	14[@] *2*	2305.62	4$^-$	E2		B(E2)(W.u.)=0.50 *13*
2705.30	(1)$^+$	702.8 *10*	6 *4*	2001.48	0$^+$			
		1572.40 *20*	3.8 *4*	1133.76	0$^+$			E_γ: No final level within 0.68 keV.
		1577.20 *20*	22 *4*	1128.02	2$^+$			
		2193.30 *10*	100 *6*	511.850	2$^+$	M1+E2	−0.17 *6*	
		2705.02 *18*	50.5 *20*	0.0	0$^+$			
2713.89	2$^+$,3$^+$	1156.28[‡] *12*	100[‡] *13*	1557.68	3$^+$			
		1484.49[‡] *11*	50[‡] *7*	1229.30	4$^+$			
		2202.07[‡] *15*	30[‡] *5*	511.850	2$^+$			
2717.59		1159.90 *20*	100	1557.68	3$^+$			
2741.0	4$^+$	2229.5[#] *10*	51[#] *13*	511.850	2$^+$			
		2740.9[#] *5*	100[#] *28*	0.0	0$^+$			
2748.2	2,3$^-$	2236.3[#] *4*	100[#]	511.850	2$^+$			
2757.06	5$^+$	178.2 *5*	0.19 *6*	2578.56	(5$^-$)			
		391.039 *30*	13.3 *5*	2366.01	5$^+$	E2(+M1)		B(M1)(W.u.)>2.1×10^{-6}; B(E2)(W.u.)>0.012 δ≈−16 from $\gamma(\theta)$ (1975Sc38) in ^{106}Ag ε decay (8.28 d).
		406.17 *3*	47.6 *11*	2350.86	4$^+$	M1+E2	−3.2 *2*	B(M1)(W.u.)>1.1×10^{-6}; B(E2)(W.u.)>0.063
		450.97 *3*	100.0 *22*	2305.62	4$^-$	E1		B(E1)(W.u.)>2.8×10^{-7}
		474.060 *30*	3.31 *19*	2283.05	4$^+$	M1+E2	−4.0 *+9−6*	B(M1)(W.u.)>2.0×10^{-8}; B(E2)(W.u.)>0.0021
		680.420 *10*	5.50 *28*	2076.69	4$^+$	M1,E2		
		824.79 *15*	54.7 *14*	1932.32	4$^+$	M1+E2	−6.5 *6*	B(M1)(W.u.)>3.5×10^{-8}; B(E2)(W.u.)>0.0023
		1199.39 *10*	40.0 *19*	1557.68	3$^+$	E2		B(E2)(W.u.)>0.00026
		1527.65 *19*	58 *15*	1229.30	4$^+$	M1+E2	−2.46 *9*	B(M1)(W.u.)>4.1×10^{-8}; B(E2)(W.u.)>9.7×10^{-5}
2775.9	(4$^+$)	533.53[‡] *12*	64[‡] *8*	2242.48	2$^+$			
		1218.26[‡] *14*	100[‡] *17*	1557.68	3$^+$			
		1546.64[‡] *16*	36[‡] *6*	1229.30	4$^+$			
		2263.84[‡] *17*	64[‡] *11*	511.850	2$^+$			
2783.74	2$^+$	1554.50[‡] *15*	3.7[‡] *10*	1229.30	4$^+$			
		1655.66[‡] *17*	7.3[‡] *10*	1128.02	2$^+$			
		2271.84[‡] *15*	100[‡] *16*	511.850	2$^+$			
2793.67	(7$^-$)	396.26[@] *5*	100[@] *2*	2397.41	(5)$^-$	(E2)		
		717.1[@] *4*	81[@] *5*	2077.01	6$^+$	(E1)		
2820.97	2$^+$	1258.80 *20*	13.3[&] *19*	1562.25	2$^+$			
		1687.40 *30*	13[&] *3*	1133.76	0$^+$			
		1693.20 *30*	15[&] *3*	1128.02	2$^+$			
		2309.00 *10*	100.0[&] *29*	511.850	2$^+$			I_γ: taken from ^{106}Rh β^- decay using the ratio Iγ(2309 from 2309) /Iγ(1180γ+1797γ)≤0.051 *8* from ε decay but taking into account the

$^{106}_{46}Pd_{60}$-9

$\gamma(^{106}Pd)$ (continued)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.[b]	δ[c]	α[d]	Comments
									division of the I(2309γ) of the doublet of 2309γ between 2308 and 2821 levels.
2820.97	2^+	2821.10 *30*	28[&] *1*	0.0	0^+				
2828.29	0^+	1266.00 *20*	16.3 *16*	1562.25	2^+				
		2316.42 *9*	100.0 *9*	511.850	2^+	E2			
2850.6	$2^+,3^+$	1621.3[#] *4*	100[#]	1229.30	4^+				
2861.4	$(^+)$	1303.4[#] *4*	100[#] *28*	1557.68	3^+				
		1631.7[#] *6*	52[#] *12*	1229.30	4^+				
2877.92	0^+	1315.70 *20*	14.9 *9*	1562.25	2^+	[E2]			
		2366.04 *7*	100.0 *9*	511.850	2^+	[E2]			
2886.5	$(^-)$	2374.6[#] *7*	100[#]	511.850	2^+				
2898.1	$(1^-,4^-)$	1668.8[#] *7*	100[#]	1229.30	4^+				
2902.48	2^+	1774.5 *7*	19 *3*	1128.02	2^+				
		2390.60 *10*	100.0 *22*	511.850	2^+	(M1+E2)	−0.10 *+7−10*		
		2902.5 *8*	1.0 *3*	0.0	0^+				
2908.7	(1^-)	2396.8[#] *7*	100[#]	511.850	2^+				
2917.86	2^+	1355.70 *30*	4.4 *10*	1562.25	2^+				
		1360.20 *30*	15.4 *4*	1557.68	3^+				
		1784.10 *30*	3.0 *8*	1133.76	0^+				
		2405.96 *9*	100.0 *28*	511.850	2^+	M1+E2	−0.05 *+2−5*		
		2917.90 *30*	6.34 *28*	0.0	0^+				
2936.0	$(2^-,3^-)$	2424.1[#] *6*	100[#]	511.850	2^+				
2951.84	5^+	195.06 *15*	19.5 *20*	2757.06	5^+	M1(+E2)	0.13 *+22−13*	0.061	α(K)exp=0.061 *12* α(K)(M1)=0.053, α(K)(E2)=0.108.
		585.97 *10*	28.2 *26*	2366.01	5^+	M1(+E2)	0.13 *+22−13*		
		601.17 *7*	100 *4*	2350.86	4^+	M1+E2	−3.0 *7*		B(M1)(W.u.)>6.0×10^{-7}; B(E2)(W.u.)>0.021
		646.02 *5*	90 *4*	2305.62	4^-	E1			B(E1)(W.u.)>1.0×10^{-7}
		874.81 *18*	20.7 *27*	2077.01	6^+				
		1019.9 *3*	66 *5*	1932.32	4^+	M1,E2			
		1394.35 *14*	93 *11*	1557.68	3^+	[E2]			B(E2)(W.u.)>0.00034 E_γ: taken from ^{106}Ag ε decay (8.46 d).
		1722.76 *18*	74 *14*	1229.30	4^+	(M1+E2)	−2.5 *14*		B(M1)(W.u.)>1.5×10^{-9}; B(E2)(W.u.)>6.9×10^{-5}
2963.0	8^+	886.0[@] *3*	100[@]	2077.01	6^+	E2			B(E2)(W.u.)=105 *23* B(E2)(W.u.)=107 *+13−26* in Coul. ex. (1995Sv01).
2968.68	3^-	2456.8 *2*	100	511.850	2^+				E_γ: taken from ^{106}Rh β^- decay (29.8 s).
2977.93	(7^-)	901.1[@] *2*	100[@]	2077.01	6^+	(E1)			
2998.77	(8^-)	205.11[@] *5*	100[@] *6*	2793.67	(7^-)	(M1+E2)	+0.21 *2*		B(M1)(W.u.)>0.0062; B(E2)(W.u.)>4.6 Mult.: from level scheme.
		299.39[@] *10*	96[@] *10*	2699.37	$(6)^-$	(E2)			B(E2)(W.u.)>19
3037.32	1,2	1909.30 *20*	100 *7*	1128.02	2^+				

$^{106}_{46}Pd_{60}$-10

γ(^{106}Pd) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[†]	I$_\gamma$[†]	E$_f$	J$^\pi_f$	Mult.[b]	δ[c]	Comments
3037.32	1,2	2525.2 *6*	14.3 *29*	511.850	2$^+$			
		3037.30 *30*	71.4 *29*	0.0	0$^+$			
3054.97	1$^+$	1498.80 *20*	100[&a] *6*	1557.68	3$^+$			E$_\gamma$: No final level within 0.89 keV. Discrepancies exist for branching ratios of the 2626 and 3054 keV levels in (n,γ) and (n,n′γ) due to unresolved doublet of 1498γ deexciting both levels.
		2542.70 *10*	44[&a] *2*	511.850	2$^+$	[M1+E2]	+0.07 *7*	
		3055.0 *4*	5[&a] *1*	0.0	0$^+$			
3069.9	(2,3)$^-$	2558.0[#] *6*	100[#]	511.850	2$^+$			
3083.91	0	1954.6 *4*	12.7 *28*	1128.02	2$^+$			
		2571.10 *20*	100 *4*	511.850	2$^+$	Q		E$_\gamma$: No final level within 0.78 keV.
3120.0	2$^+$,3$^+$	2608.1[#] *10*	100[#]	511.850	2$^+$			
3161.0	2$^+$	1602.2[#] *12*	23[#] *12*	1557.68	3$^+$			
		2649.3[#] *5*	100[#] *18*	511.850	2$^+$	Q		
3163.7	(1,2$^+$)	2651.7 *3*		511.850	2$^+$			
		3165.4[#] *13*	[#]	0.0	0$^+$			
3173.8	(2$^+$,3$^+$)	1616.4[#] *6*	93[#] *28*	1557.68	3$^+$			
		2045.1[#] *9*	100[#] *23*	1128.02	2$^+$			
3176.77	(8$^-$)	199.0[@] *3*	46[@] *8*	2977.93	(7$^-$)	(D+Q)		Mult.: no δ given in ^{96}Zr(^{13}C,3nγ).
		383.11[@] *20*	100[@] *12*	2793.67	(7$^-$)	D+Q		δ=−0.55 *25* γ(θ); −0.38 *11* or −1.5 *3* γγ(θ) in ^{96}Zr(^{13}C,3nγ).
		477.0[@] *3*	62[@] *12*	2699.37	(6)$^-$			
3221.37	0$^+$	2093.3 *4*	9.8 *22*	1128.02	2$^+$	[E2]		
		2709.5 *3*	100 *27*	511.850	2$^+$	[E2]		
3249.9	2$^+$	3249.8 *5*	100	0.0	0$^+$			
3252.0	2$^+$	2740.1 *4*	100	511.850	2$^+$			
3273.5	1,2	3273.4 *7*	100	0.0	0$^+$			
3289.65	(9$^-$)	290.89[@] *10*	63[@] *2*	2998.77	(8$^-$)	D+Q	+0.36 *4*	
		495.97[@] *5*	100[@] *5*	2793.67	(7$^-$)	E2		B(E2)(W.u.)=1.9 *10*
3299.2		2787.3 *7*	100	511.850	2$^+$			
3320.5	0$^+$	2185.7[e] *5*	35 *9*	1133.76	0$^+$			E$_\gamma$,I$_\gamma$: if J^π=0$^+$ for 3320 and 1133 level than 2185γ is impossible.
		2809.00 *30*	100 *6*	511.850	2$^+$	[E2]		
3461.89	9$^{(-)}$	285.0[@] *5*	27[@] *9*	3176.77	(8$^-$)	D+Q	−0.9 *5*	
		463.03[@] *20*	64[@] *9*	2998.77	(8$^-$)	D+Q	−0.9 *5*	
		484.2[@] *3*	41[@] *9*	2977.93	(7$^-$)			
		668.1[@] *3*	100[@] *14*	2793.67	(7$^-$)			
3533.5	10$^+$	570.47[@] *5*	100[@]	2963.0	8$^+$	E2		
3654.16	10$^{(-)}$	655.40[@] *15*	100[@]	2998.77	(8$^-$)	(E2)		
3874.80	(10$^-$)	412.8[@] *3*	30[@] *8*	3461.89	9$^{(-)}$			

Adopted Levels, Gammas (continued)

$\gamma(^{106}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[†]	E_f	J^π_f	Mult.[b]	δ[c]
3874.80	(10^-)	697.96[@] *20*	100[@] *8*	3176.77	(8^-)	(Q)	
		876.3[@] *3*	44[@] *26*	2998.77	(8^-)		
3949.1	(10^+)	986.1[@] *3*	100[@]	2963.0	8^+	(E2)	
4021.73	$11^{(-)}$	367.6[@] *2*	8[@] *2*	3654.16	$10^{(-)}$		
		732.07[@] *10*	100[@] *6*	3289.65	(9^-)	(Q)	
4088.7	12^+	555.2[@] *2*	100[@] *5*	3533.5	10^+	E2	
4259.8	(11^-)	797.9[@] *3*	100[@] *15*	3461.89	$9^{(-)}$		
4640.2	(12^-)	986.1[@] *3*	100[@]	3654.16	$10^{(-)}$		
4721.8	$12^{(+)}$	633.1[@] *3*	100[@] *25*	4088.7	12^+		
		1188.3[@] *2*	100[@] *17*	3533.5	10^+	Q	
4752.3	(12^-)	877.5 *3*	100	3874.80	(10^-)		
4893.8	14^+	805.1[@] *2*	100[@]	4088.7	12^+	E2	
4990.1	(13^-)	968.4[@] *3*	100[@]	4021.73	$11^{(-)}$	(Q)	
5106.6	(12^+)	1017.9[@] *4*	100[@]	4088.7	12^+	(D+Q)	−0.36 *30*
5404.0	(14^+)	682.2[@] *2*	100[@] *12*	4721.8	$12^{(+)}$	(Q)	
		1315.3[@] *3*	76[@] *12*	4088.7	12^+	(Q)	
5895.0	(16^+)	1001.2[@] *3*	100[@]	4893.8	14^+		

† Unless noted otherwise, relative photon branchings from each level were calculated with least square procedures using data from ^{106}Rh β^- decay (29.8 s), ^{106}Rh β^- decay (130 min), ^{106}Ag ε decay (8.46 d) and ^{106}Ag ε decay (24 min) if all available, if not only available data sets used. Notify also the discrepancy between the gamma energies from 131-min ^{106}Rh β^- decay and the other data sets.

‡ From $^{105}Pd(n,\gamma)(n,e)$.

\# From $^{106}Pd(n,n'\gamma)$.

@ From $^{96}Zr(^{13}C,3n\gamma)$.

& From ^{106}Rh β^- decay.

a The 1498γ is doubly placed in (n,γ),$(n,n'\gamma)$; however, the branchings in these data sets are not consistent if one assumes that the 2626 level is not fed in β^- decay. These branchings can be made consistent if part of 1498γ intensity in β^- decay is placed from the 2626 level. The 2114 level, which also deexcites 2626 level is not seen in β^- decay, but would be masked by strong 2112.5 γ.

b From α(K)exp, K:L1:L2:L3, $\gamma(\theta)$ and $\gamma\gamma(\theta)$ data.

c From $\gamma(\theta)$, $\gamma\gamma(\theta)$ or $\gamma(\theta)$ with polarized nuclei oriented at low T.

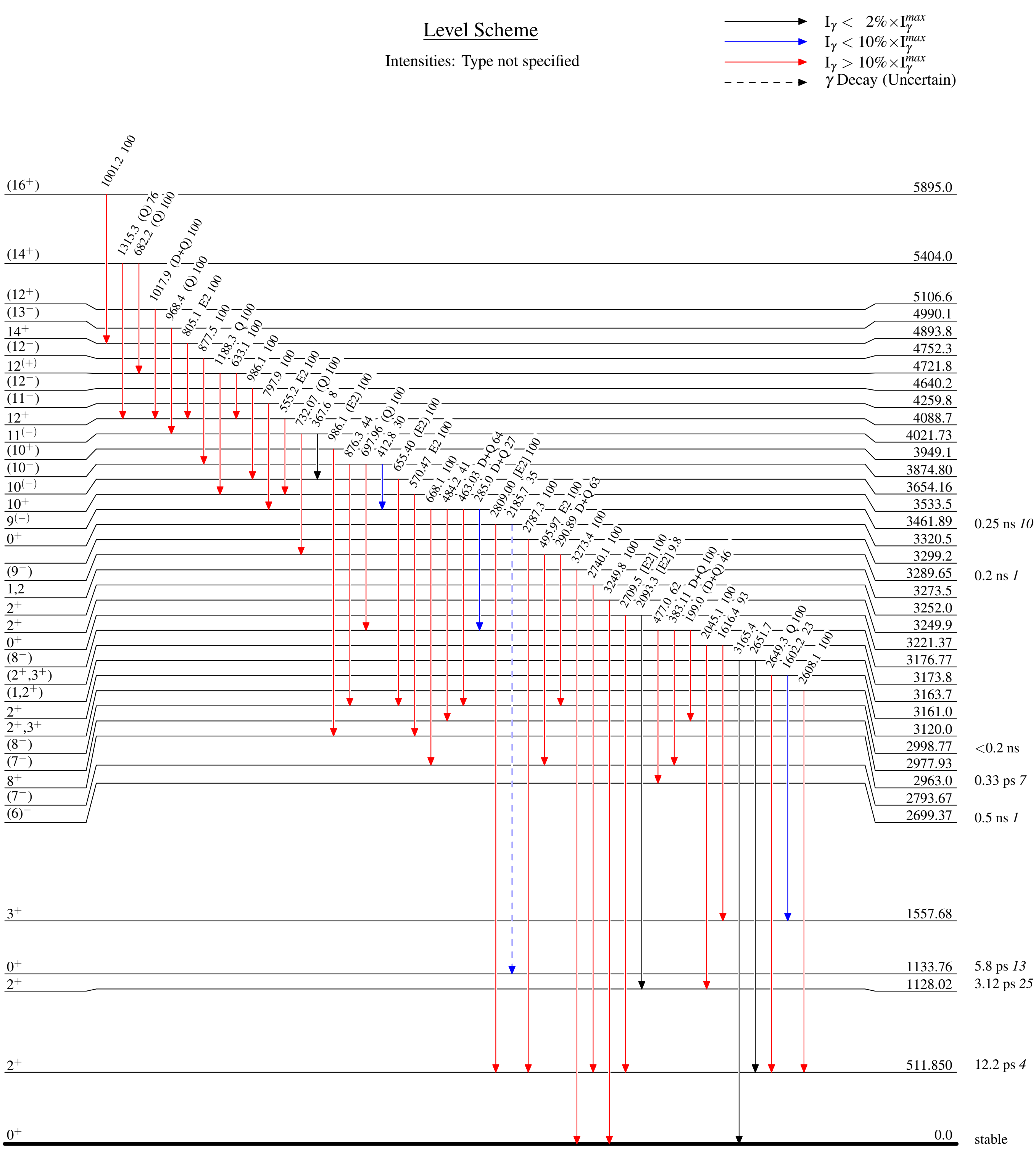
d Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

e Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified

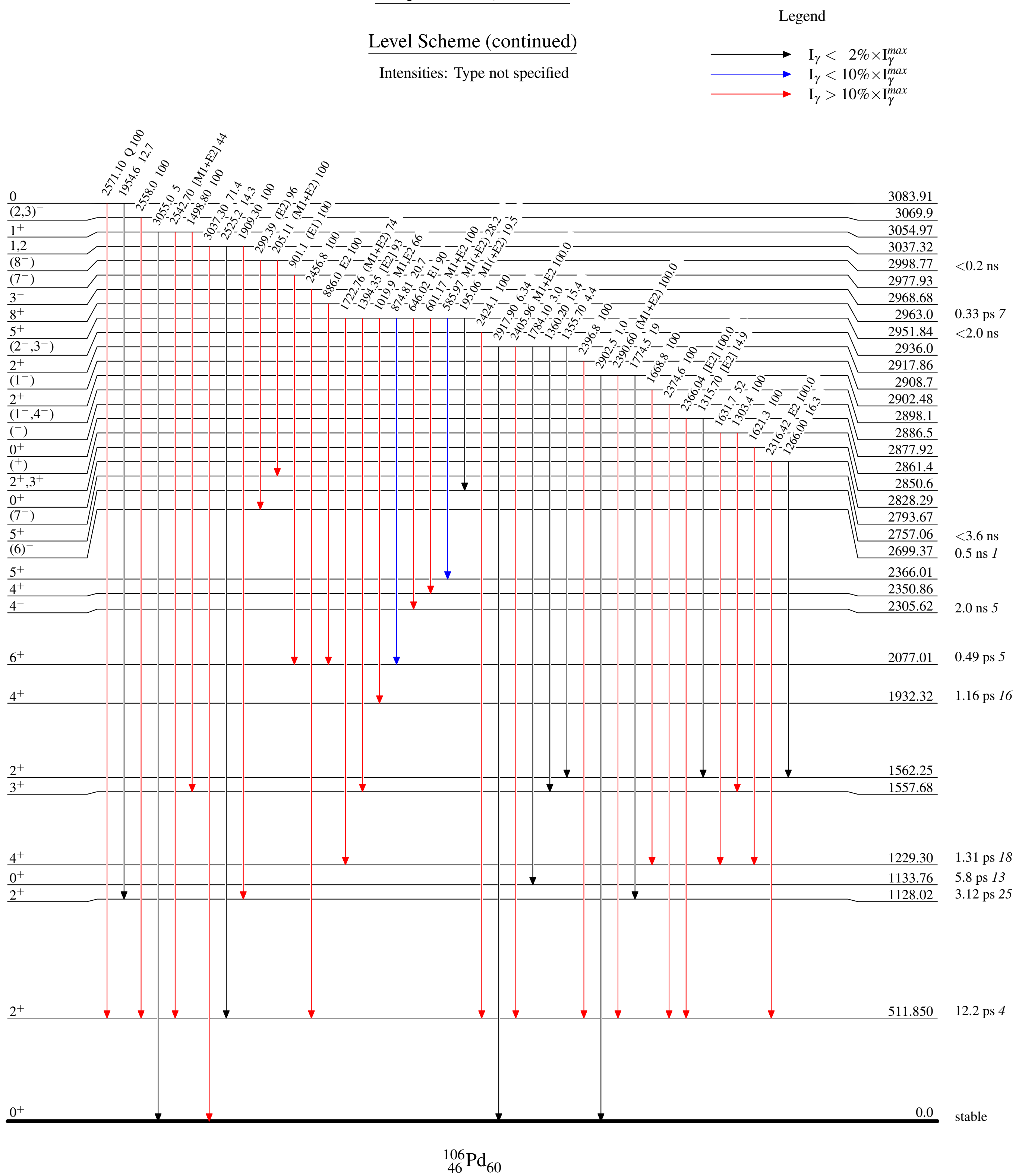


$^{106}_{46}Pd_{60}$

Adopted Levels, Gammas

Level Scheme (continued)

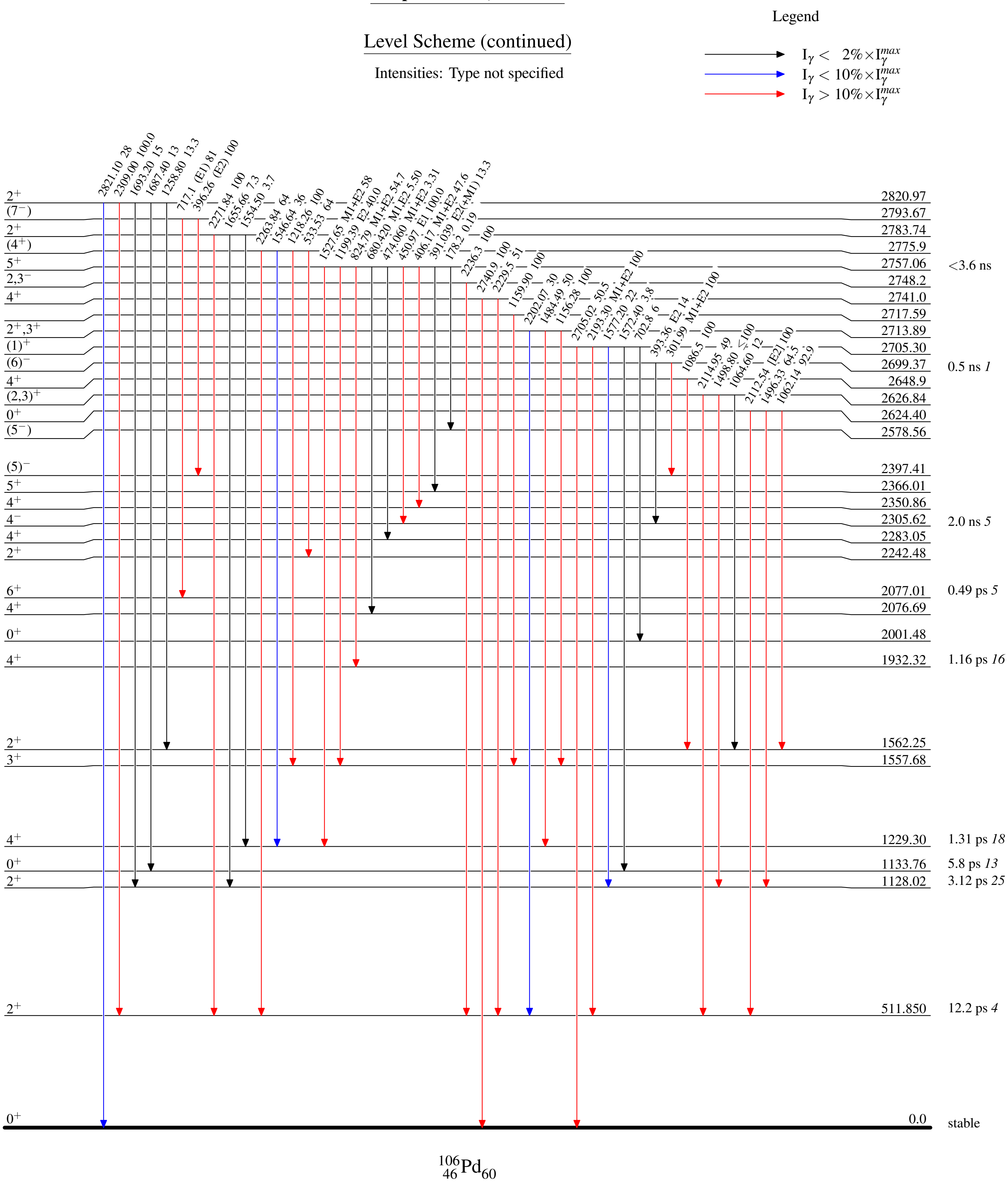
Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified



Adopted Levels, Gammas

Level Scheme (continued)

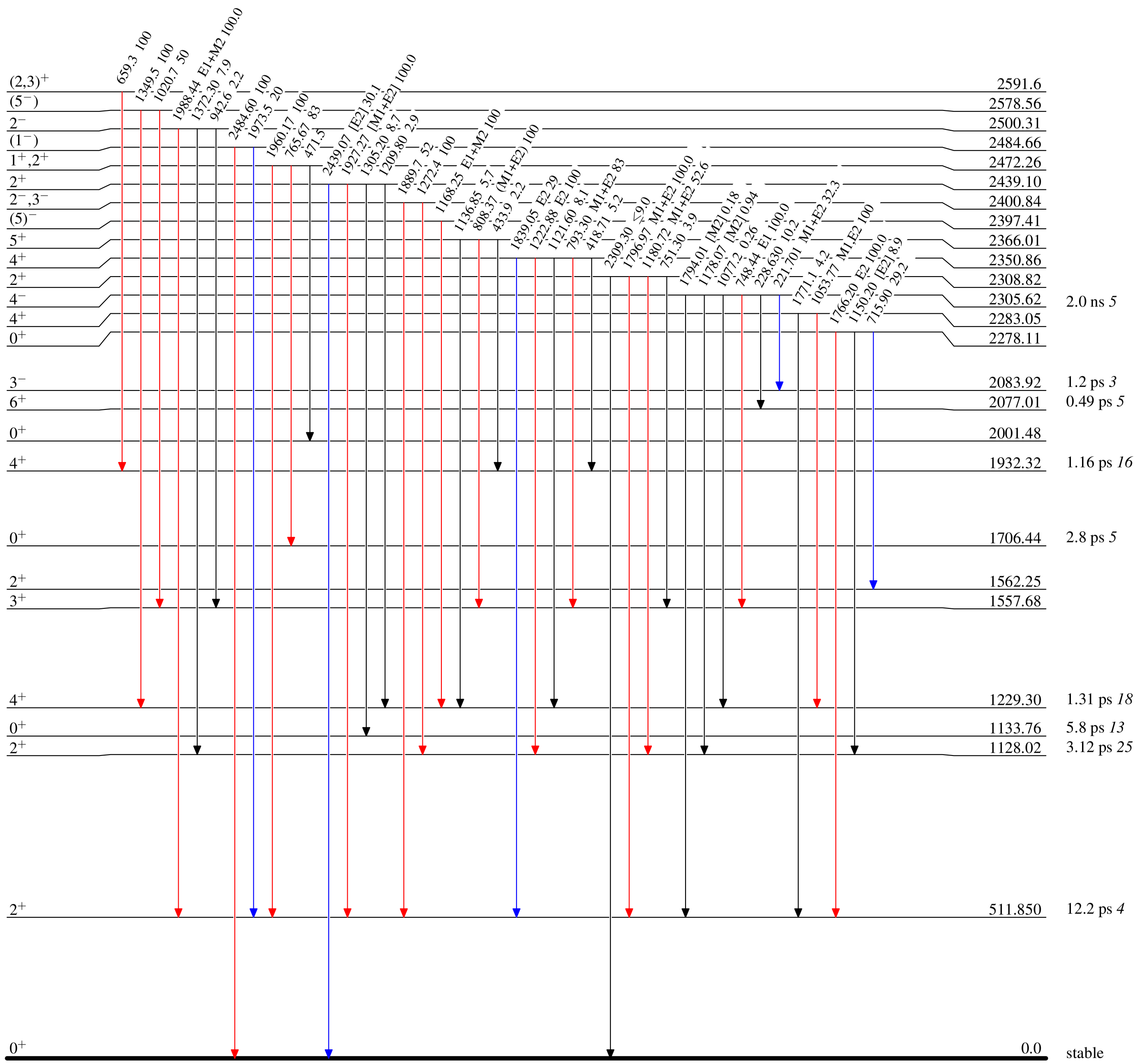
Intensities: Type not specified

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{106}_{46}Pd_{60}$

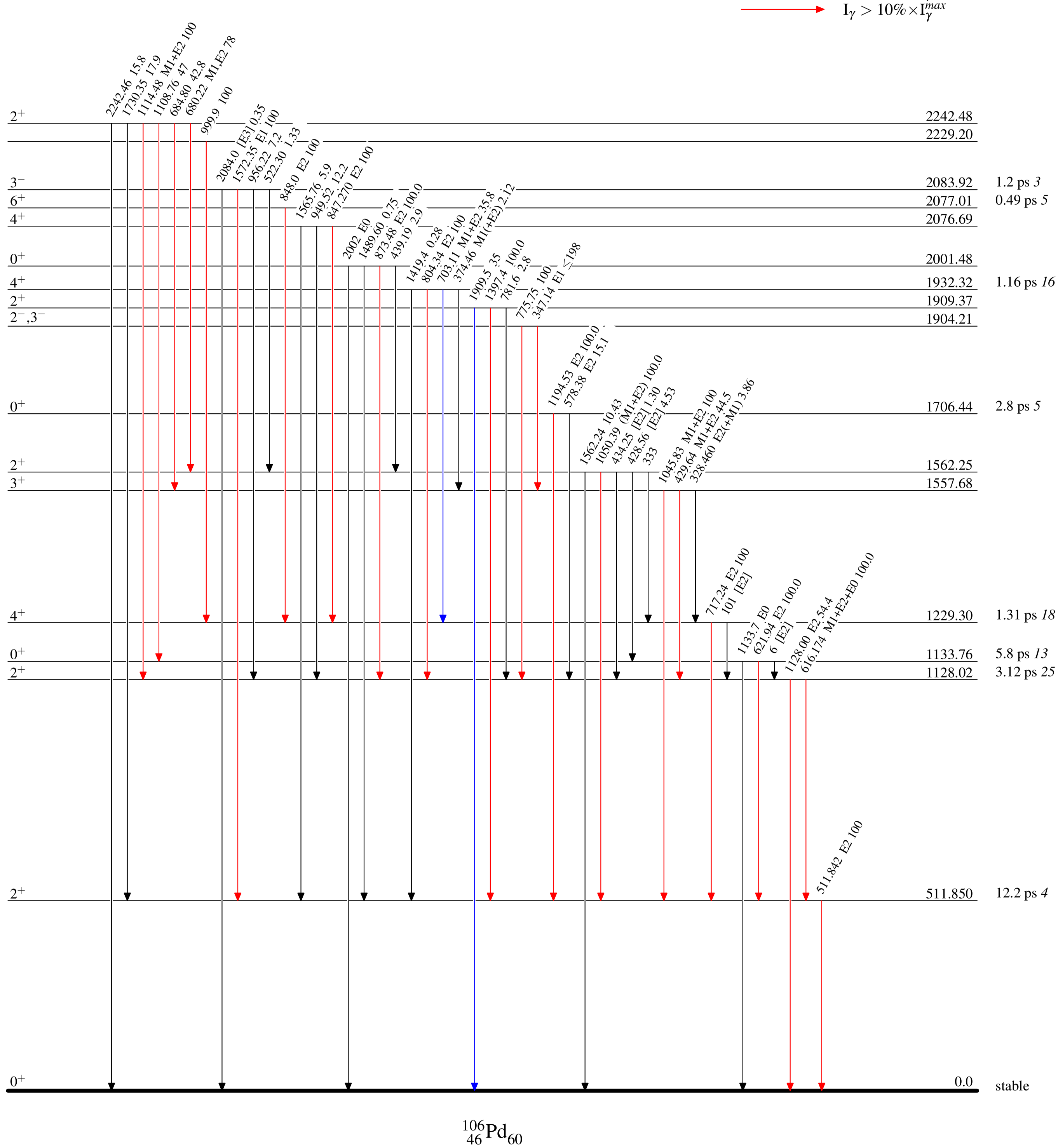
Adopted Levels, Gammas

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$

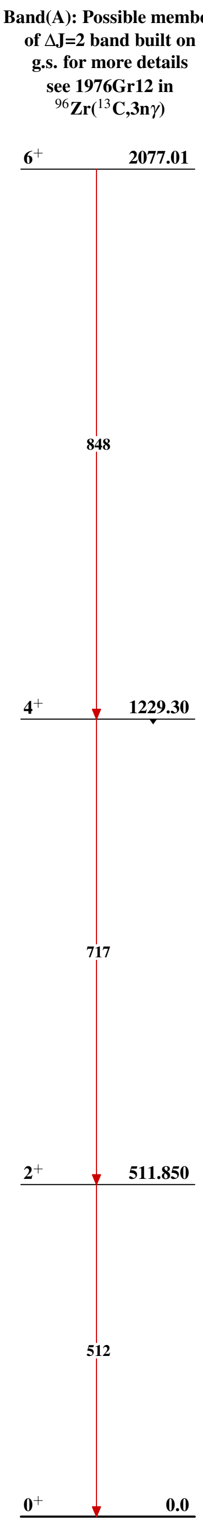
Level Scheme (continued)

Intensities: Type not specified



$^{106}_{46}Pd_{60}$

Adopted Levels, Gammas



$^{106}_{46}Pd_{60}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	ENSDF	1-Jul-2008

Q(β^-)=−1918 *3*; S(n)=9223.2 *17*; S(p)=9949 *12*; Q(α)=−3856 *3* 2012Wa38
Note: Current evaluation has used the following Q record −1922 5 *9228* 5 *9950* 12-3860 5 2003Au03.

^{108}Pd Levels

Cross Reference (XREF) Flags

A	^{108}Rh β^- decay (16.8 s)	G	^{108}Pd(n,n′γ)	M	^{100}Mo(^{11}B,p2nγ)
B	^{108}Rh β^- decay (6.0 min)	H	^{108}Pd(p,p′)	N	(HI,xnγ)
C	^{108}Ag ε decay (2.382 min)	I	^{108}Pd(d,d′)	O	$\alpha\gamma(\mu^-$,xnypγ)
D	^{108}Ag ε decay (438 y)	J	Coulomb excitation	P	^{109}Ag(d,^{3}He)
E	^{106}Pd(t,p)	K	^{176}Yb(^{31}P,Xγ)	Q	^{110}Pd(pol p,t)
F	^{108}Pd(e,e′)	L	^{110}Pd(p,t)		

E(level)	J$^\pi$†	T$_{1/2}$	XREF	Comments
0#	0$^+$	stable	ABCDEFGHIJKLMNOP	For charge distribution parameters see (e,e) (1978Ar07).
433.938# *4*	2$^+$	23.9 ps *7*	ABCDEFGHIJKLMNOP	Q=−0.58 *4*; μ=+0.72 *6* J$^\pi$: L(t,p)=2. T$_{1/2}$: from B(E2) in Coulomb excitation. μ: from 1980Br01, 1989Ra17. Other: +0.64 *6* (1985ThZY). Q: from 1989Ra17. Other: −0.70 *27* (1981Ko06).
931.15^e *4*	2$^+$	6.2 ps *4*	ABC EFGHIJKLM OP	J$^\pi$: α,$\gamma(\theta)$ in Coulomb excitation. T$_{1/2}$: weighted average of 6.8 ps 11 from B(E2) in Coulomb excitation, and 6.1 ps 4 from B(E2) in (e,e′).
1048.216# *6*	4$^+$	2.8 ps *3*	B D GHiJKlMNO	XREF: i(1050)l(1050). J$^\pi$: $\gamma\gamma(\theta)$, (pol γ)(θ) in 438-y ^{108}Ag(ε). T$_{1/2}$: from B(E2) in Coulomb excitation.
1052.78 *5*	0$^+$	4.0 ps *4*	A C E GHiJKlM P	XREF: i(1050)l(1050). E(level): transition not observed. Energy is from E(level) difference. J$^\pi$: L(t,p)=0. T$_{1/2}$: from B(E2) in Coulomb excitation.
1314.23 *6*	0$^+$	>25 ps	C GH KL P	T$_{1/2}$: from B(E2) in Coulomb excitation. J$^\pi$: $\gamma\gamma(\theta)$ in 2.382-min ^{108}Ag(ε). Excited in (p,t).
1335.25^f *6*	3$^+$		B G I K M	J$^\pi$: γ′s to 2$^+$. Not fed in decay of 2.382-min ^{108}Ag, J$^\pi$=1$^+$, or 438-y ^{108}Ag, J$^\pi$=6$^+$. Not seen in Coulomb excitation, (t,p), (p,p′) or (d,d′). Analogy to ^{104}Pd, ^{106}Pd in (n,n′γ) (1975Go11).
1441.18 *4*	2$^+$	4.8 ps *+12−10*	A C GHIJ	T$_{1/2}$: from B(E2) in Coulomb excitation. J$^\pi$: $\gamma\gamma(\theta)$ in 2.382-min ^{108}Ag(ε). log *ft*=5.4 from 1$^+$.
1539.96 *5*	(1$^+$,2$^+$)		A C GH L	J$^\pi$: log *ft*=6.1 from 1$^+$. γ to 0$^+$, γ to (3$^+$).
1624.16^e *21*	(4$^+$)	1.69 ps *20*	HIJ LM	T$_{1/2}$: from B(E2) in Coulomb excitation. J$^\pi$: multiple Coulomb excitation. Comparison with boson expansion model. γ to 2$^+$. Excited in (d,d′), (p,p′), (p,t).
1771.126# *11*	6$^+$	0.88 ps *10*	B D G IJK MN	T$_{1/2}$: from B(E2) in Coulomb excitation. J$^\pi$: $\gamma\gamma(\theta)$, (pol γ)(θ) in 438-y ^{108}Ag(ε).
1955.8 *6*	4$^+$	4.7 ps *18*	E J L	J$^\pi$: L(t,p)=4. T$_{1/2}$: from B(E2) in Coulomb excitation.
1989.86 *12*	(4$^+$)		E G	T$_{1/2}$: from B(E2) in Coulomb excitation. J$^\pi$: L(t,p)=(4). γ′s to 2$^+$,4$^+$.

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{108}Pd Levels (continued)

E(level)	J^{π}†	$T_{1/2}$	XREF	Comments
2015 *10*			E	
2046.65 *14*	3^-	<1 ps	EFGHIJ L	B(E3)↑=0.093 *26*; β_3=0.14 *1* J^{π}: L(p,p′)=3. $T_{1/2}$: from Doppler broadening in Coulomb excitation. B(E3)↑: from in Coulomb excitation for I(1612γ)=100%. β_3: from (p,p′).
2083.56[f] *12*	5^+		K M	
2098.67? *24*	$(1,2^+)$		G	J^{π}: γ′s to 0^+,2^+.
2141 *10*	(0^+)		E	J^{π}: L(t,p)=(0).
2218.00 *11*	2^+		E GH	J^{π}: L(t,p)=2.
2231.1 *5*			M	
2259.01[e] *20*	6^+		K M	
2281.21? *14*			G	
2282.43 *10*			K M	
2282.53 *11*			B GH M	
2324.39[a] *9*	5^-		E H K MN	J^{π}: L(t,p)=5.
2362 *10*	(2^+)		E hI	J^{π}: L(t,p)=(2).
2391.42 *23*	2^+		E Gh	J^{π}: L(t,p)=2.
2397.4 *4*	(8^+)		N	
2404.1? *3*			G	
2418 *10*			E	
2421.2 *10*	(6^+)	1.01 ps *+43−10*	J	$T_{1/2}$,J^{π}: from B(E2) in Coulomb excitation.
2466 *10*	4^+		E h	XREF: h(2470). J^{π}: L(t,p)=4.
2471.8 *5*			M	
2477.57 *24*	(2^+)		Gh	XREF: h(2470). J^{π}: γ′s to 0^+ and 4^+.
2528.33 *20*			M	
2530.22 *19*			M	
2531 *10*	4^-,5^-		KL	J^{π}: L(d,^{3}He)=4 and assumption of g9/2 pickup.
2536.1 *3*			B H	
2540.2 *3*	4^+		E G I	J^{π}: L(t,p)=4.
2548.39[#] *10*	8^+	0.44 ps *5*	JK MN	$T_{1/2}$: from B(E2) in Coulomb excitation.
2578 *10*			E	
2637 *10*	4^+		E H	J^{π}: L(t,p)=4.
2671.33[d] *20*	(5^+)		M	
2691 *10*	(5^-)		E h	J^{π}: L(t,p)=(5).
2709.48[&] *8*	$6^{(-)}$‡		K M	
2720.0 *3*	2^+		E Gh	J^{π}: L(t,p)=2.
2761.24[a] *7*	7^-		K MN	
2790 *20*			H L	
2842.03[c] *7*	7^-		K M	
2863.70 *18*	$(4^+,5^+,6^+)$		B E K	J^{π}: γ′s to (4^+), 4^+ and 6^+. Logft=4.9 from (5^+).
2888.3 *4*			GH	
2918.56[f] *23*	(7^+)		M	
2940 *20*			HI	
2953.65[e] *19*	(8^+)		K M	
2969 *20*	4^-,5^-		K	J^{π}: L(d,^{3}He)=4 and assumption of g9/2 pickup.
3050 *20*			H L	
3088.89[b] *9*	$8^{(-)}$		K M	
3100.25[&] *8*	$8^{(-)}$‡		K M	
3110.7[d] *3*	(7^+)		M	
3140 *20*			H	

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Adopted Levels, Gammas (continued)

^{108}Pd Levels (continued)

E(level)	J^{π} †	XREF
3257.01[@] 13	10^+	K MN
3280.24[a] 12	9^-	K MN
3286.64 12		
3350.89[#] 14	10^+	MN
3420.24[c] 15	9^-	M
3423.8 3		M
3727.35[&] 13	$10^{(-)}$‡	K M
3748.5[d] 3	(9^+)	M
3789.7[e] 3	(10^+)	M
3793.69[b] 22	$10^{(-)}$	K M
3798.31[@] 17	12^+	K M
3859.0 3		M
3963.94[a] 16	11^-	K MN
4120.4 3	(11)	M
4158.7[#] 9	12^+	K MN
4194.7[c] 3	11^-	M
4377.70 24	(11)	M
4492.86[&] 16	$12^{(-)}$‡	K M
4528.5[d] 10	(11^+)	M
4642.40[@] 19	14^+	K MN
4684.3[b] 5	(12^-)	M
4710.9 3	(13)	M
4777.7[a] 3	(13^-)	K MN
4976.60[#] 20	14^+	K MN
5132.4 3		M
5325.8[&] 3	(14^-)‡	M
5370.9[d] 15	(13^+)	M
5608.1 4		M
5632.0[a] 3	(15^-)	M
5691.91[@] 22	16^+	K MN
6225.2[&] 8	(16^-)‡	M
6517.3[a] 4	(17^-)	M
6827.9[@] 10	18^+	MN

† J^{π} without comments are based on band structure and decay pattern.
‡ Tentative negative parity assignment based on systematic of even-mass isotopes of palladium.
[#] Band(A): g.s., yrast band.
[@] Band(B): 10^+ band.
[&] Band(C): $\nu h_{11/2}\otimes\nu(g_{7/2},d_{5/2})$, α=0.
[a] Band(c): $\nu h_{11/2}\otimes\nu(g_{7/2},d_{5/2})$, α=1.
[b] Band(D): $\nu h_{11/2}\otimes\nu(g_{7/2},d_{5/2})$, α=0.
[c] Band(d): $\nu h_{11/2}\otimes\nu(g_{7/2},d_{5/2})$, α=1.
[d] Band(E): (5^+) band, α=1. Tentatively based on second lowest ($\nu h_{11/2}$) excitation.
[e] Band(F): γ vibrational band, α=0.
[f] Band(f): γ vibrational band, α=1.

Adopted Levels, Gammas (continued)

$\gamma(^{108}Pd)$

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.	δ	α[a]	$I_{(\gamma+ce)}$	Comments
433.938	2^+	433.937 *4*	100	0	0^+	[E2]		0.0091		B(E2)(W.u.)=50.4 *15*
931.15	2^+	497.22 *7*	100.0 *15*	433.938	2^+	M1+E2	−3.1 *4*	0.0061		B(M1)(W.u.)=0.0022 *6*; B(E2)(W.u.)=72 *6* Mult.: D+Q from $\gamma\gamma(\theta)$ in Coulomb excitation. RUL. δ: from $\gamma\gamma(\theta)$ in Coulomb excitation.
		931.15 *10*	24.1 *18*	0	0^+	[E2]				B(E2)(W.u.)=0.83 *9*
1048.216	4^+	117[#]	0.0004[@]	931.15	2^+	[E2]		0.801		B(E2)(W.u.)=1.21 *14*
		614.276 *4*	100	433.938	2^+	E2				B(E2)(W.u.)=76 *9* Mult.: from $\gamma\gamma(\theta)$ and (pol γ)(θ) in 438-y ^{108}Ag(ε).
1052.78	0^+	122[#]	0.027[@]	931.15	2^+	[E2]				B(E2)(W.u.)=47 *+5−11*
		618.84 *5*	100	433.938	2^+	[E2]				B(E2)(W.u.)=52 *5*
		1052.78		0	0^+				<0.0068	$I_{(\gamma+ce)}$: from 1987Es01. Transition not observed. Energy is from E(level) difference.
1314.23	0^+	383.2 *2*	20.9 *21*	931.15	2^+	[E2]		0.0134		B(E2)(W.u.)<16
		880.26 *7*	100	433.938	2^+	[E2]				B(E2)(W.u.)<1.2
1335.25	3^+	404.09 *9*	100 *7*	931.15	2^+	[E2]		0.0104 *10*		
		901.33 *9*	100 *5*	433.938	2^+	M1+E2	≤−5			δ: δ≤−5 or δ≤0.2; the latter value is less likely for positive mixing ratio.
1441.18	2^+	388.6 *4*	13 *4*	1052.78	0^+	[E2]		0.0128		B(E2)(W.u.)=35 *+14−15*
		393 *1*	<5	1048.216	4^+	[E2]				B(E2)(W.u.)=6 *+7−6* I_γ: estimated by evaluator from spectrum in ε decay where the insert in fig. 1 of 1973Si02 shows no evidence for a 393γ. This strongly suggests that the value of 25 *+6−4* in Coulomb excitation is too large.
		510.1 *2*	20 *5*	931.15	2^+					B(E2)(W.u.)=11 *+4−5* I_γ: average of <25 (ε decay) and >14 (Coul. ex.).
		1007.22 *5*	100 *5*	433.938	2^+					B(E2)(W.u.)=1.7 *+10−2*
		1441.14 *10*	25 *5*	0	0^+	[E2]				B(E2)(W.u.)=0.10 *+3−4* I_γ: weighted average of Iγ/Iγ (1007γ) from ε decay and (n,n′γ). E_γ: E=1441.60 *10* reported in (n,n′γ).
1539.96	(1^+,2^+)	204.5[c] *3*	13.8 *15*	1335.25	3^+	[E2]		0.110		
		225.6[c] *2*	17.3 *20*	1314.23	0^+	[E2]		0.078		
		608.73 *13*	34 *4*	931.15	2^+					
		1106.01 *6*	100 *7*	433.938	2^+					
		1540.03 *11*	53 *7*	0	0^+					I_γ: Iγ(1540γ)/Iγ(1106γ)=0.64 *9* in 2.382-min ^{108}Ag ε decay.
1624.16	(4^+)	184 *1*		1441.18	2^+	[E2]				B(E2)(W.u.)=3.6 *+27−11* Iγ=0.0085 *+64−26*.
		577 *1*	22 *3*	1048.216	4^+	[E2]				B(E2)(W.u.)=30 *7*
		694 *1*	100 *11*	931.15	2^+	[E2]				B(E2)(W.u.)=54 *11*
		1191 *1*	<7.8	433.938	2^+	[E2]				B(E2)(W.u.)=0.14 *14*

$^{108}_{46}Pd_{62}$-4

$\gamma(^{108}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.	Comments
1771.126	6^+	722.907 *10*	100 *2*	1048.216	4^+	E2	B(E2)(W.u.)=107 *13* Mult.: from $\gamma\gamma(\theta)$, (pol γ)(θ) in 438-y ^{108}Ag(ε).
1955.8	4^+	331		1624.16	(4^+)	[E2]	B(E2)(W.u.)=1.9 +*48*−*11* I_γ: Iγ=0.23 +*58*−*21*.
		908 *1*		1048.216	4^+	[E2]	B(E2)(W.u.)<1.8 I_γ: Iγ<34.
		1025		931.15	2^+	[E2]	B(E2)(W.u.)=2.9 *11* I_γ: Iγ=100 +*38*−*25*.
1989.86	(4^+)	548.2 *3*	37 *4*	1441.18	2^+		
		655.1 *3*	27 *4*	1335.25	3^+		
		941.65 *15*	100 *8*	1048.216	4^+		
		1058.6 *5*	20 *4*	931.15	2^+		
		1555.9 *6*	16 *3*	433.938	2^+		
2046.65	3^-	998[#]	<24[@]	1048.216	4^+		
		1115[#]	10[@] *10*	931.15	2^+		
		1612.72 *14*	100	433.938	2^+		B(E1)(W.u.)>6.2×10^{-5}
2083.56	5^+	313.1 *9*	17 *3*	1771.126	6^+		
		748.3 *1*	100 *7*	1335.25	3^+		
2098.67?	$(1,2^+)$	1664.8 *4*	54 *8*	433.938	2^+		
		2098.6 *3*	100 *12*	0	0^+		
2218.00	2^+	677.99 *13*	71 *5*	1539.96	$(1^+,2^+)$		Unplaced by authors in (n,n′γ). Placed by evaluators on the basis of energy fit.
		1164.9 *9*	8.1 *20*	1052.78	0^+		
		1287.7 *6*	13.4 *22*	931.15	2^+		
		1784.1 *2*	100 *10*	433.938	2^+		
2231.1		1182.9 *5*	100	1048.216	4^+		
2259.01	6^+	634.9 *1*	100 *6*	1624.16	(4^+)		
		1211.2 *5*	11 *3*	1048.216	4^+		
2281.21?		1350.1 *2*	57 *5*	931.15	2^+		
		1847.2 *2*	100 *11*	433.938	2^+		
2282.43		511.3 *1*	100	1771.126	6^+		
2282.53		947.27 *11*	100 *4*	1335.25	3^+		
		1234.2 *3*	20.6 *20*	1048.216	4^+		
2324.39	5^-	1276.7 *10*	100	1048.216	4^+		
2391.42	2^+	1460.4 *3*	100 *11*	931.15	2^+		
		1957.2[bc] *4*	61[b] *11*	433.938	2^+		
		2391.4 *7*	41 *8*	0	0^+		
2397.4	(8^+)	626.3 *4*	100	1771.126	6^+		
2404.1?		1970.1 *3*	100	433.938	2^+		
2421.2	(6^+)	797 *1*	100	1624.16	(4^+)	[E2]	B(E2)(W.u.)=57 +*6*−*25*
2471.8		847.6 *4*	100	1624.16	(4^+)		
2477.57	(2^+)	1429.5 *3*	79 *11*	1048.216	4^+		

$^{108}_{46}Pd_{62}$-5

$\gamma(^{108}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f	Mult.	Comments
2477.57	(2^+)	2044.4 *8*	33 *8*	433.938	2^+		
		2476.8 *5*	100 *11*	0	0^+		
2528.33		757.2 *2*	100	1771.126	6^+		
2530.22		205.6 *2*	58 *9*	2324.39	5^-		
		1482.9 *4*	100 *22*	1048.216	4^+		
2536.1		2102.2 *5*	100	433.938	2^+		
2540.2	4^+	1608.5 *5*	43 *9*	931.15	2^+		
		2106.4 *3*	100 *12*	433.938	2^+		
2548.39	8^+	777.2 *1*	100	1771.126	6^+	[E2]	B(E2)(W.u.)=148 *17*
2671.33	(5^+)	1623.1 *2*	100	1048.216	4^+		
2709.48	$6^{(-)}$	385.2 *1*	100 *7*	2324.39	5^-		
		938.2 *1*	96 *8*	1771.126	6^+		
2720.0	2^+	2286.0 *3*	100	433.938	2^+		
2761.24	7^-	436.8 *1*	17.3 *13*	2324.39	5^-		
		990.2 *1*	100 *5*	1771.126	6^+		
2842.03	7^-	132.8 *3*	6.0 *13*	2709.48	$6^{(-)}$		
		1070.9 *1*	100 *6*	1771.126	6^+		
2863.70	$(4^+,5^+,6^+)$	327.6[&] *3*	8.8[&] *15*	2536.1			
		581.1 *2*	100 *7*	2282.43			
		1092.7 *3*	7 *3*	1771.126	6^+		
2888.3		1957.2[b] *4*	92[b] *17*	931.15	2^+		
		2454 *1*	100 *17*	433.938	2^+		
2918.56	(7^+)	835.0 *2*	100	2083.56	5^+		
2953.65	(8^+)	694.7 *1*	100	2259.01	6^+		
3088.89	$8^{(-)}$	246.8 *1*	39 *4*	2842.03	7^-		
		327.7 *1*	100 *7*	2761.24	7^-		
3100.25	$8^{(-)}$	258.3 *1*	50 *4*	2842.03	7^-		
		339.0 *1*	81 *6*	2761.24	7^-		
		390.7 *1*	100 *7*	2709.48	$6^{(-)}$		
3110.7	(7^+)	439.4 *2*	100	2671.33	(5^+)		
3257.01	10^+	303.4 *2*	2.6 *4*	2953.65	(8^+)		
		708.6 *1*	100 *4*	2548.39	8^+		
3280.24	9^-	519.0 *1*	100	2761.24	7^-		
3286.64		525.4 *1*	100	2761.24	7^-		
3350.89	10^+	802.5 *1*	100	2548.39	8^+		
3420.24	9^-	578.2 *2*	89 *14*	2842.03	7^-		
		659.0 *2*	100 *16*	2761.24	7^-		
3423.8		875.4 *3*	100	2548.39	8^+		
3727.35	$10^{(-)}$	627.1 *1*	100	3100.25	$8^{(-)}$		
3748.5	(9^+)	637.8 *2*	100	3110.7	(7^+)		
3789.7	(10^+)	836.3 *3*	100 *21*	2953.65	(8^+)		

Adopted Levels, Gammas (continued)

γ(^{108}Pd) (continued)

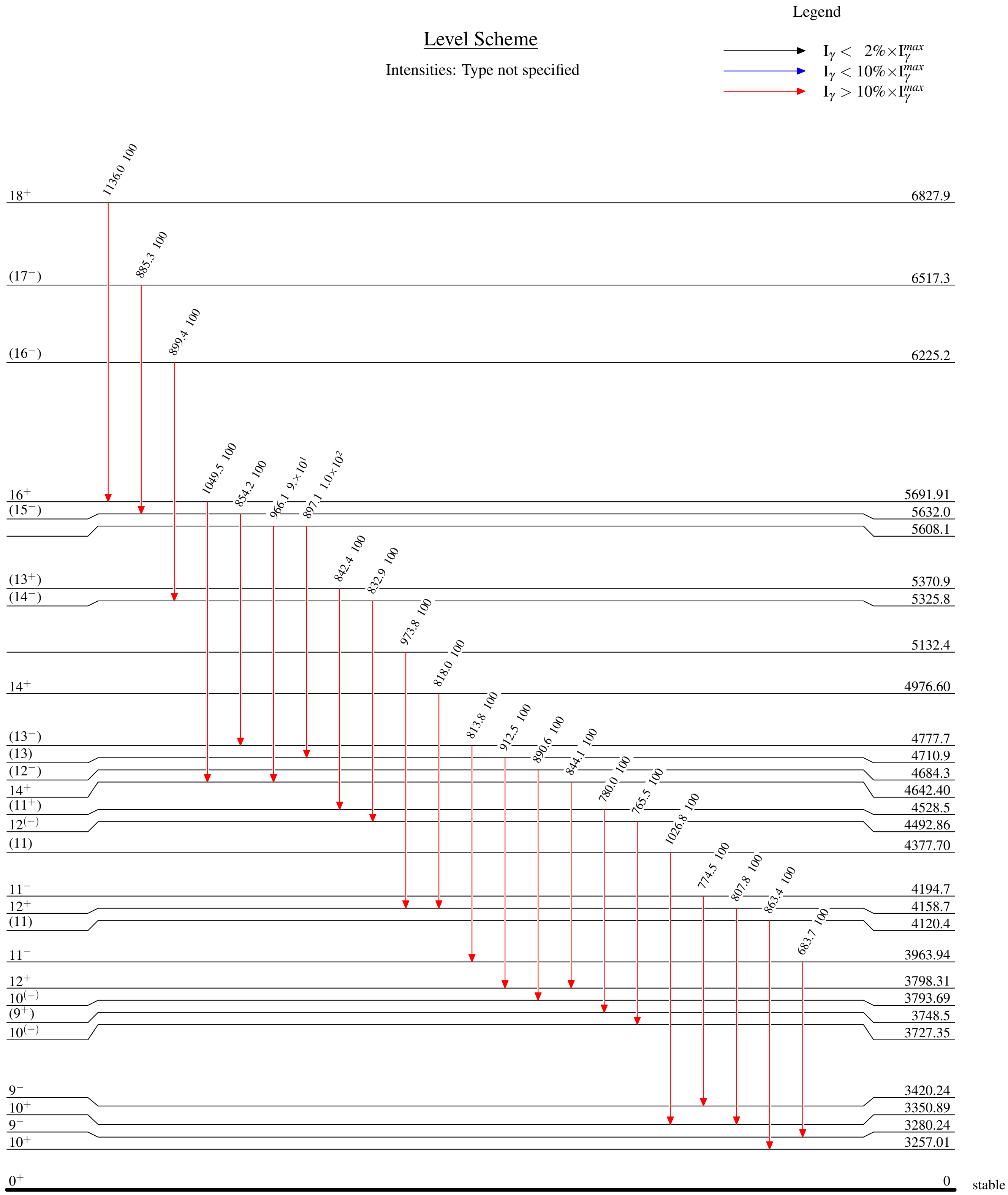
E_i(level)	J^π_i	E_γ †	I_γ ‡	E_f	J^π_f
3789.7	(10$^+$)	1240.7 *5*	9.×10^1 *3*	2548.39	8$^+$
3793.69	10$^{(-)}$	373.6 *14*	14 *3*	3420.24	9$^-$
		704.8 *2*	100 *10*	3088.89	8$^{(-)}$
3798.31	12$^+$	541.3 *1*	100	3257.01	10$^+$
3859.0		572.4 *3*	100	3286.64	
3963.94	11$^-$	683.7 *1*	100	3280.24	9$^-$
4120.4	(11)	863.4 *3*	100	3257.01	10$^+$
4158.7	12$^+$	807.8 *9*	100	3350.89	10$^+$
4194.7	11$^-$	774.5 *2*	100	3420.24	9$^-$
4377.70	(11)	1026.8 *2*	100	3350.89	10$^+$
4492.86	12$^{(-)}$	765.5 *1*	100	3727.35	10$^{(-)}$
4528.5	(11$^+$)	780.0 *9*	100	3748.5	(9$^+$)
4642.40	14$^+$	844.1 *1*	100	3798.31	12$^+$
4684.3	(12$^-$)	890.6 *4*	100	3793.69	10$^{(-)}$
4710.9	(13)	912.5 *2*	100	3798.31	12$^+$
4777.7	(13$^-$)	813.8 *2*	100	3963.94	11$^-$
4976.60	14$^+$	818.0 *1*	100	4158.7	12$^+$
5132.4		973.8 *2*	100	4158.7	12$^+$
5325.8	(14$^-$)	832.9 *2*	100	4492.86	12$^{(-)}$
5370.9	(13$^+$)	842.4 *11*	100	4528.5	(11$^+$)
5608.1		897.1 *4*	1.0×10^2 *3*	4710.9	(13)
		966.1 *6*	9.×10^1 *3*	4642.40	14$^+$
5632.0	(15$^-$)	854.2 *2*	100	4777.7	(13$^-$)
5691.91	16$^+$	1049.5 *1*	100	4642.40	14$^+$
6225.2	(16$^-$)	899.4 *8*	100	5325.8	(14$^-$)
6517.3	(17$^-$)	885.3 *3*	100	5632.0	(15$^-$)
6827.9	18$^+$	1136.0 *10*	100	5691.91	16$^+$

† Weighted average from (n,n′γ) and all decay data sets.
‡ Relative photon branching from each level.
# Not seen. E(γ) from level energy differences.
@ Intensity limit from Coulomb excitation.
& From 6-min ^{108}Rh(β^-).
^{a} 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.
^{b} Multiply placed with undivided intensity.
^{c} Placement of transition in the level scheme is uncertain.

Adopted Levels, Gammas

Level Scheme

Intensities: Type not specified



$^{108}_{46}Pd_{62}$

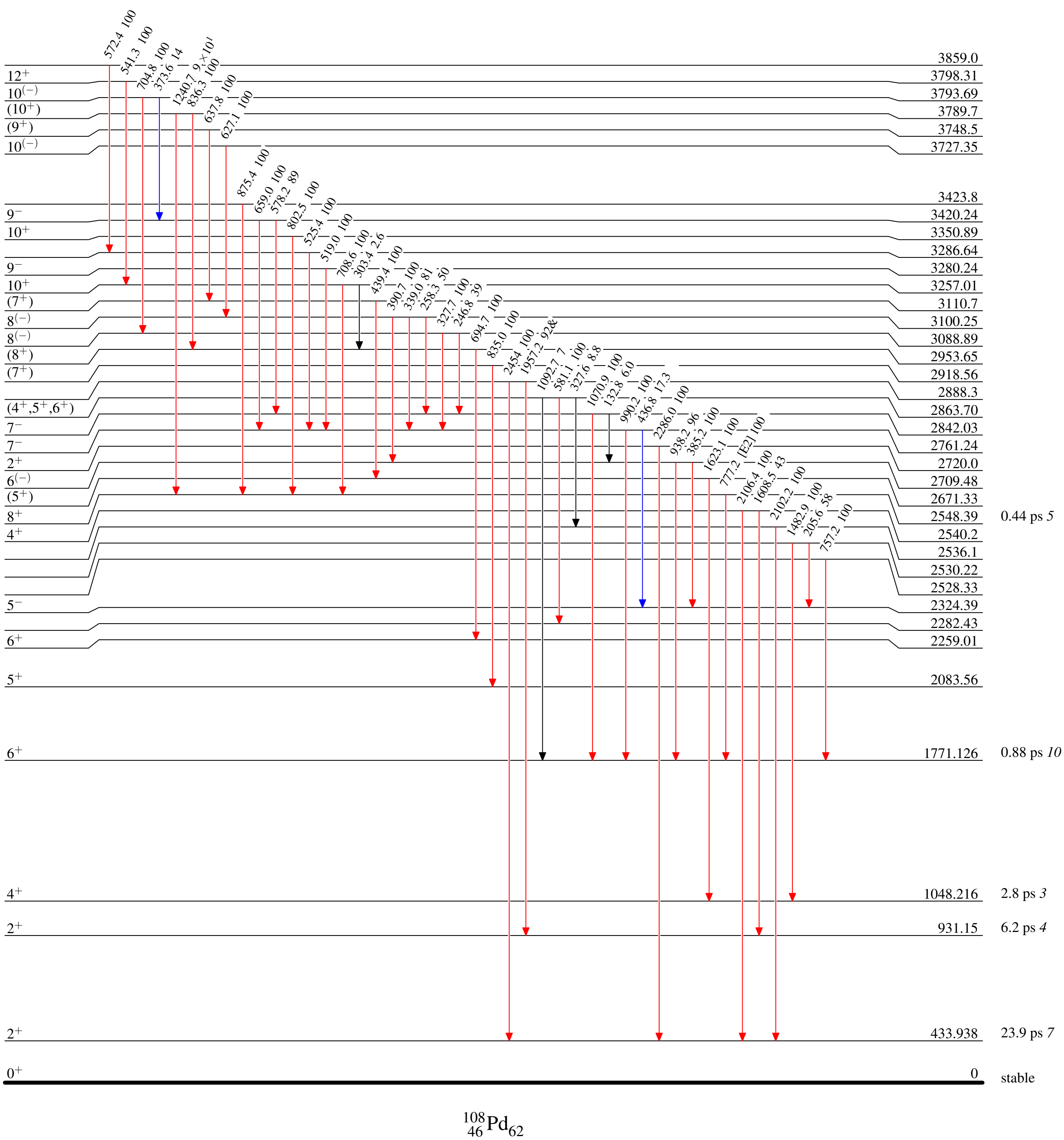
Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

Legend

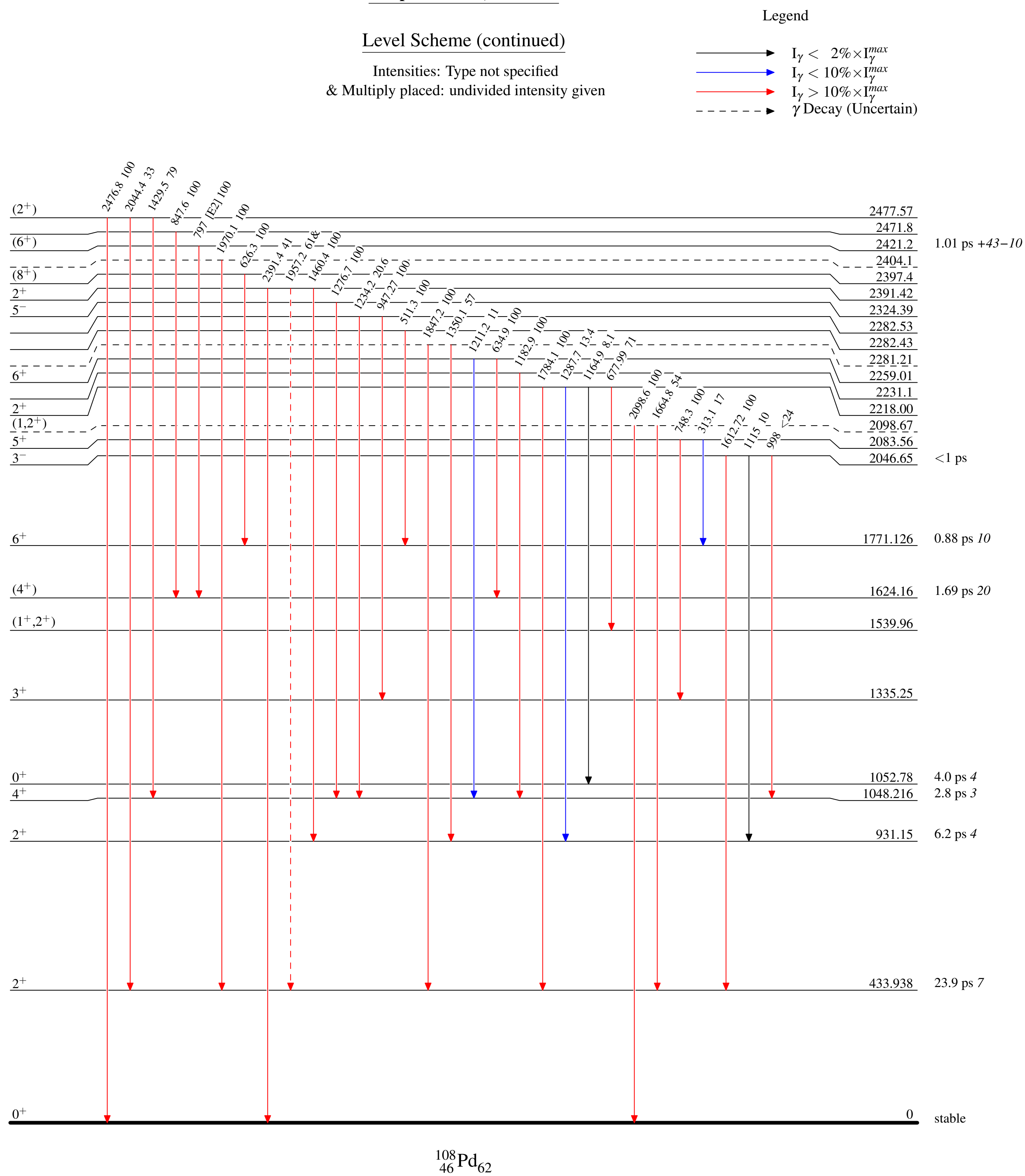
$I_\gamma < 2\% \times I_\gamma^{max}$
$I_\gamma < 10\% \times I_\gamma^{max}$
$I_\gamma > 10\% \times I_\gamma^{max}$



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Type not specified
& Multiply placed: undivided intensity given

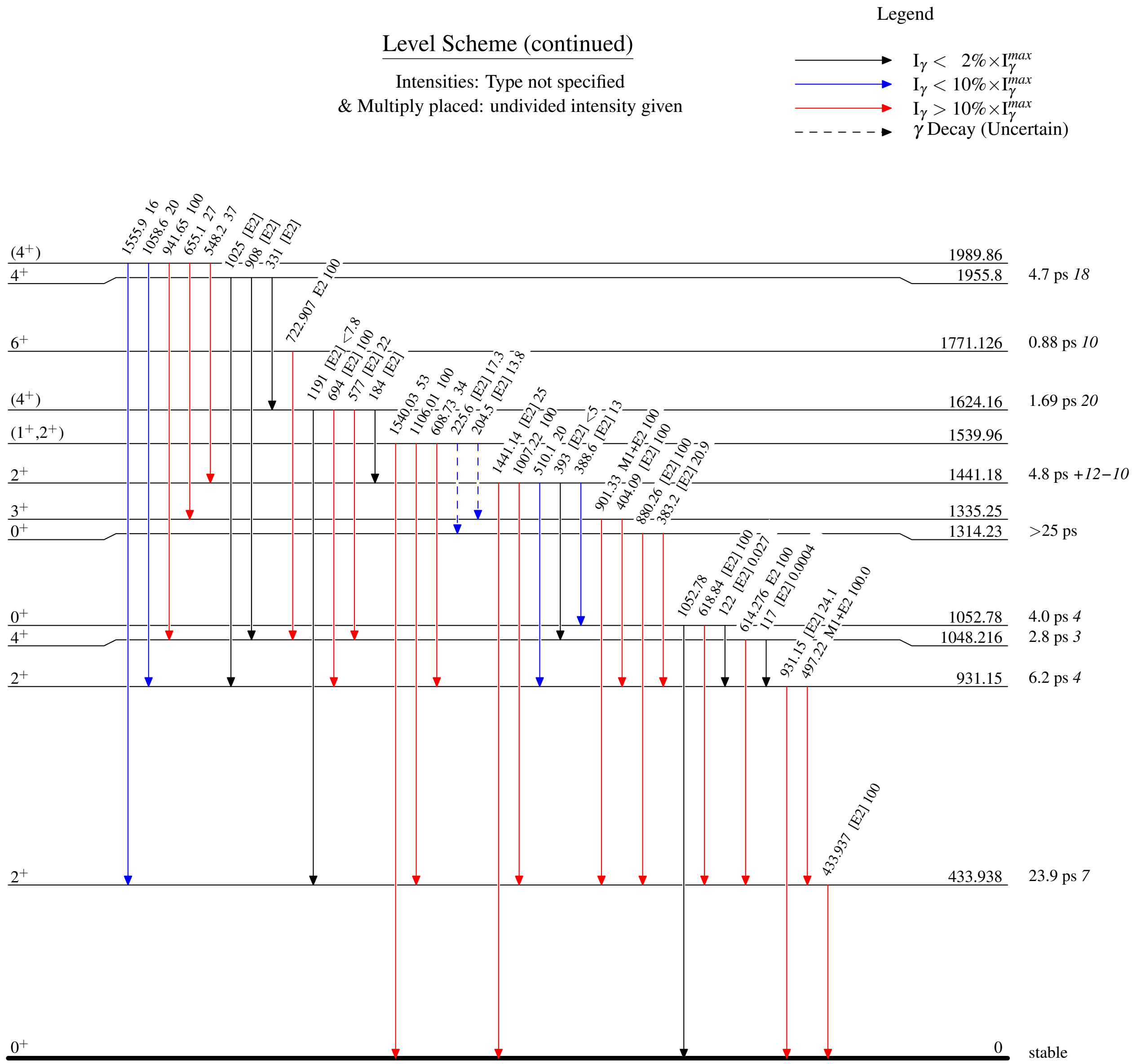


Adopted Levels, Gammas

Level Scheme (continued)

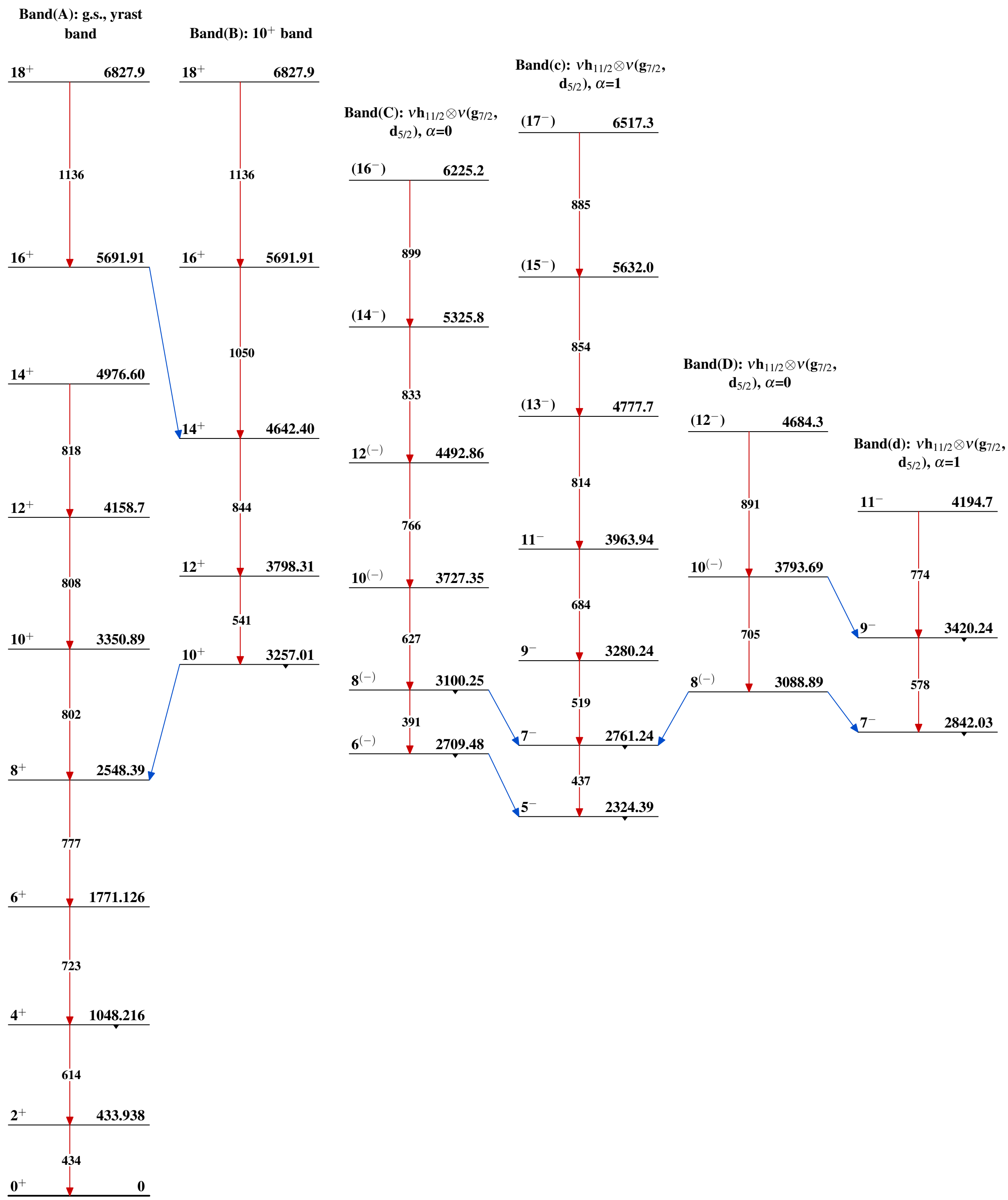
Intensities: Type not specified

& Multiply placed: undivided intensity given



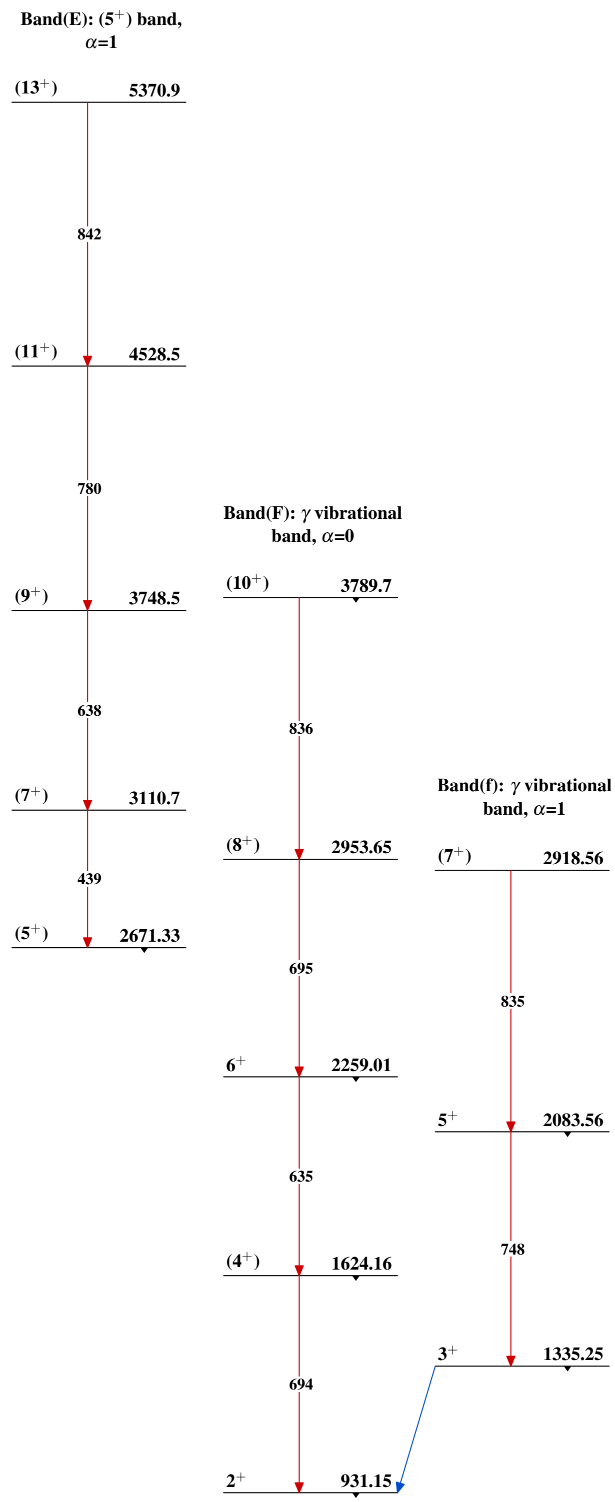
$^{108}_{46}Pd_{62}$

Adopted Levels, Gammas



$^{108}_{46}Pd_{62}$

Adopted Levels, Gammas (continued)



$^{108}_{46}Pd_{62}$

Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	G. Gürdal and F. G. Kondev	NDS 113,1315 (2012)	1-Aug-2011

Q(β^-)=−873.8 *14*; S(n)=8796.2 *13*; S(p)=10621 *4*; Q(α)=−4434 *6* 2012Wa38
Note: Current evaluation has used the following Q record −891 78816 710627 5 −4453 9 2011AuZZ.

^{110}Pd Levels

Cross Reference (XREF) Flags

A	^{110}Rh β^- decay (3.35 s)	F	^{110}Pd(e,e′)	K	Coulomb excitation
B	^{110}Rh β^- decay (28.0 s)	G	^{110}Pd(π^-,X)	L	^{176}Yb(^{31}P,Xγ)
C	^{110}Ag ε decay (24.56 s)	H	^{110}Pd(n,n′γ)	M	^{238}U(^{12}C,Fγ)
D	^{108}Pd(t,p)	I	^{110}Pd(p,p′),(d,d′),(pol d,d′)		
E	^{110}Pd(α,α′)	J	^{110}Pd(p,p′γ)		

E(level)[†]	J$^\pi$[‡]	T$_{1/2}$	XREF	Comments
0.0[#]	0$^+$	stable	ABCDEFGHIJKLM	
373.80[#] *7*	2$^+$	44.0 ps *7*	ABCDEF HIJKLM	μ=+0.62 *6* Q=−0.72 *14* B(E2)↑=0.876 *16* J$^\pi$: 373.80γ E2 to 0$^+$; L(t,p), L(α,α′)=2. T$_{1/2}$: Weighted average of 45.5 ps *17* (from recoil-distance technique in 1989Ko40), 43.6 ps *8* (from adopted B(E2)↑=0.876 *16*) and 46 ps *6* (from recoil distance Doppler-shift technique in 2008De30). μ: using dynamical field technique in 1980Br01. Others: +0.6 *4* using time integral perturbed angular correlations in 2005Sm08 and 2004Sm04 (T$_{1/2}$=46.6 ps *14* was used), +0.70 *6* using transient field technique in 1985ThZX, 0.74 *6* using recoil into gas in 1979LaZL, 0.68 *8* (in Fe host) and 0.72 *8* (in alloy host) using transient field implantation perturbed-angular-correlation technique in 1974Hu01. Q: using reorientation precession technique in 1976Ha21 (−0.60 *14* for destructive interference). Others: −0.47 *3* from (e,e′) in 1991We15, −0.28 *3* from (e,e′) in 1973PeYX, −0.55 *8* or −0.35 *8* from Coulomb excitation in 1972Lu08, −0.72 *8* or −0.45 *8* from Coulomb excitation in 1971Ha08, −0.48 *5* or −0.23 *5* from Coulomb excitation in 1970Be45. B(E2)↑: Weighted average of 0.87 *3* (1991We15), 0.80 *7* (1976Li19) in ^{110}Pd(e,e′), 0.82 *5* (symmetrized from 0.85 *+2−7* in 1989SvZZ), 0.88 *6* (1971Bo08), 0.82 *8* (1971Ha08), 0.91 *6* (1969Ro05), 0.91 *3* (weighted average of 0.92 *6*, 0.90 *6*, 0.91 *6* and 0.91 *6* in 1962Ec01), 0.94 *8* (1962Ga10) and 0.86 *6* (1958St32). Others: 0.78 in 1962Er05 and 0.91 in 1962Ri09.
813.59[@] *7*	2$^+$	17.7 ps *8*	AB DEF HIJKL	J$^\pi$: 439.76γ E2+M1 to 2$^+$ and 813.7γ to 0$^+$; L(t,p)=2. T$_{1/2}$: From 1989Ko40 using the recoil-distance technique. Others: 18.6 *+5−9* (1989SvZZ) and 14.0 *18* from 1969Ro05.
920.78[#] *10*	4$^+$	4.1 ps *3*	B DEF HIJKLM	XREF: E(923). J$^\pi$: 547.04γ E2 to 2$^+$; member of the g.s. band; L(t,p)=4. T$_{1/2}$: From 1989Ko40 using the recoil-distance technique. Others: 4.5 ps *+3−1* (1989SvZZ) and 3.8 ps *6* (1969Ro05). B(E4)=91×10^{-4} *14* from (e,e′) in 1991We15.
946.74[&] *11*	0$^+$	7.9 ps *7*	A D HIJK	XREF: J(945). J$^\pi$: L(t,p)=0; 572.89γ to 2$^+$; non-observation of γ-ray transition to g.s (J$^\pi$=0$^+$); assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′). T$_{1/2}$: From 1989Ko40 using the recoil-distance technique. Others: 10.6 ps

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Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

E(level)[†]	J^{π}[‡]	$T_{1/2}$	XREF	Comments
				+4−8 (1989SvZZ) and 8.0 ps *14* (1969Ro05).
1170.65[a] *11*	0^+		A D HIJK	XREF: D(1175)J(1168). J^{π}: L(t,p)=0; 796.83γ to 2^+; non-observation of γ-ray transition to g.s ($J^{\pi}=0^+$); assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
1212.12[@] *13*	(3^+)		B HijKL	XREF: i(1213)j(1212). J^{π}: 291.6γ to 4^+, 838.2γ to 2^+; band member.
1214.48[&] *15*	2^+	9.1 ps *6*	A D F HijK	XREF: i(1213)j(1212). J^{π}: L(t,p)=(2); 267.4γ to 0^+, 840.9γ to 2^+; band member. $T_{1/2}$: From recoil-distance technique in 1989Ko40. Others: 12.1 ps *+10−17* (1989SvZZ) and <16 ps (1969Ro05), both from Coulomb excitation.
1398.31[@] *13*	4^+	5.1 ps *6*	B F HIJKL	XREF: J(1401). J^{π}: 477.8γ to 4^+, 584.6γ to 2^+; band member. $T_{1/2}$: From recoil-distance technique in 1989Ko40. Other: 5.4 ps *+5−4* from Coulomb excitation in 1989SvZZ. B(E4)≈0.001 from (e,e′) in 1991We15.
1470.06[a] *10*	2^+		FGHIJK	XREF: J(1472). J^{π}: 1096.29γ to 2^+, 1470.2γ to 0^+; band member.
1573.99[#] *17*	6^+	1.40 ps *14*	B HIJKLM	XREF: J(1576). J^{π}: 653.1γ to 4^+; member of the g.s. band. $T_{1/2}$: From 1989Ko40 using the recoil-distance technique. Other: 1.46 ps *+14−7* in Coulomb excitation (1989SvZZ).
1584[f] *1*			I	
1641?	(0^+)		G	E(level),J^{π}: From 1979Du06 in ^{110}Pd(π^-,X).
1716.6[g] *11*	2^+		Ij	XREF: j(1713). J^{π}: From ^{110}Pd(p,p′),(d,d′),(pol d,d′).
1718.86[&] *15*	4^+	2.2 ps *3*	HIjK	XREF: j(1713). J^{π}: 905.2γ to 2^+; 144γ to 6^+; band member; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′); $T_{1/2}$: From 1989Ko40 using recoil-distance technique. Other: 1.9 ps *4* in Coulomb excitation (1989SvZZ).
1759.3[@] *4*	(5^+)		L	J^{π}: 547.2γ to (3^+); band member.
1864[f] *1*	(2^+)[h]		I	
1889.78 *19*	2^+		D HI K	XREF: D(1891)I(1891). J^{π}: L(t,p)=(2); 941.5γ to 0^+, 1515.9γ to 2^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
1900.04 *15*	(4^+)		B L	J^{π}: 501.9γ to 4^+, 1086.5γ to 2^+, 890.5γ from (6^+).
1900.5 *3*	(2^+)		HI	J^{π}: 729.9γ to 0^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
1934.60[a] *18*	4^+		DEF HIJK	XREF: K(1936). J^{π}: L(t,p)=(4); 463.9γ to 2^+, 1014γ to 4^+; band member. B(E4)=56×10^{-4} *13* from ^{110}Pd(e,e′) (1991We15).
1956[g] *2*	(4^+)		I	J^{π}: From ^{110}Pd(p,p′),(d,d′),(pol d,d′).
1987.22[@] *17*	(6^+)		B L	J^{π}: 588.8γ to (4^+); band member.
1991[g] *2*	(4^+)[h]		I	
2037.67 *18*	3^-		DEF HIJK	XREF: K(2015). J^{π}: L(t,p), L(α,α')=3; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′). ε B(E3)↑=0.086 *12* in 1969Ro05, weighted average of 0.083 *15* and 0.093 *21*. β_3=0.140 *11*, deduced from B(E3), assuming ε=1 (3^- state decays entirely to first 2^+ state).
2061.0 *4*	$(5,6^+)$		K	J^{π}: 487γ to 6^+, 1140γ to 4^+. Note, that this level was assigned as the 6^+ member of the g.s. band in Coulomb excitation, but this was contradicted in ^{176}Yb(^{31}P,Xγ).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

E(level)[†]	J^{π}[‡]	XREF	Comments
2089.1 5	(4^+)	K	J^{π}: 1275γ to 2^+, 515γ to 6^+.
2095[f] 1		I	
2125.3 3	(1^-)	HI	J^{π}: 1751.3γ to 2^+, 2125.3γ to 0^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2140.70[g] 25	2^+	D F HIJK	XREF: D(2135)F(2130)J(2131). J^{π}: L(t,p)=2; 767γ to 2^+, 1220γ to 4^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2193.0 3	(2^+)	HIJ	XREF: I(2190). J^{π}: 1378.8γ to 2^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2194[f] 1	(6^+)[h]	I	
2260.67 19	(5^+)	B I L	J^{π}: 1048.5γ to (3^+), 1340.0γ to 4^+; direct feeding in ^{110}Rh β^- decay (J^{π}=(6^+)).
2276.0 3	(3^-)	HI	XREF: I(2274). J^{π}: 1354.9γ to 4^+, 1462.5γ to 2^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2293.3 3	(2^+)	HIJ	XREF: I(2295). J^{π}: 1919.5γ to 2^+, 2309γ to 0^+.
2295.5[c] 3	(5^-)	DE I L	XREF: D(2283)E(2290). J^{π}: L(t,p)=5; 721.5 to 6^+, 1374.6γ to 4^+; band member.
2296.2[#] 4	8^+	KLM	J^{π}: 722.2γ to 6^+; member of the g.s. band.
2322.08 25	2^+	HI	J^{π}: 1375.3γ to 0^+, 1401.2γ to 4^+.
2335.2[&] 5	(6^+)	I K	XREF: I(2332). J^{π}: 39γ to 8^+, 1414γ to 4^+.
2336[f] 1		I	
2369.7 5	2^+	HI	XREF: I(2373). J^{π}: 1449.5γ to 4^+, 2369.6γ to 0^+.
2422[g] 2	(6^+)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2428[f] 2	4^+	D I	XREF: D(2431). J^{π}: L(t,p)=4.
2446.61 24	(2^+)	B HIJ	J^{π}: 1048.3γ to 4^+, 2094γ to 2^+ and 2452γ to 0^+. Note, that assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′) favors 4^+.
2474.4 3	(2^+)	E HI	XREF: E(2461). J^{π}: 2474.4γ to 0^+, 1076.7γ to 4^+. Note that J^{π}=1^- in ^{110}Pd(p,p′),(d,d′) (1990Pi14 and 1992Pi08), but J^{π}=(3^-,4^+) in ^{110}Pd(pol d,d′) (1993He13).
2490[g] 2	3^-	D I	J^{π}: L(t,p)=3. Note, that J^{π}=(5^-) in ^{110}Pd(pol d,d′) (1993He13).
2498.9 4	(2^+)	HIJ	XREF: I(2496)J(2499). J^{π}: 1286.7γ to (3^+), 1577.3γ to 4^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2511[g] 5	(4^+)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2517[f] 2	2^+	D I	J^{π}: L(t,p)=2; assignment in ^{110}Pd(pol d,d′) (1993He13).
2535[g] 5	(2^+)	D I	XREF: D(2548). J^{π}: L(t,p)=(2); assignment in ^{110}Pd(p,p′),(d,d′) (1990Pi14, 1992Pi08).
2558[f] 2		I	
2563.8 4	(3^-)[h]	HI	
2575[g] 5	(4^+)	I	J^{π}: assignment in ^{110}Pd(pol d,d′) (1993He13).
2580[e] 2		I	
2608[g] 5	(1^-)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2615.3 4		L	
2617[f] 2	(5^-)[h]	I	
2637	(4^+)	D	J^{π}: L(t,p)=(4).
2644[e] 2	(2^+)[h]	I	
2649[e] 2	(2^+)[h]	I	
2650.7[@] 4	(8^+)	L	J^{π}: 663.5γ to (6^+); band member.
2663.1 5	(2^+)	D I L	XREF: D(2658)I(2658). J^{π}: L(t,p)=2. Other: (1^-) in ^{110}Pd(p,p′),(d,d′),(pol d,d′).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	XREF	Comments
2672[g] *5*	(4^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2686.6[d] *4*	(2^+)[h]	HI	
2691[g] *5*	(2^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2695[g] *2*	4^+	D I	XREF: D(2693). J$^{\pi}$: L(t,p)=4.
2714.6 *9*	(4^+)	HI	XREF: I(2718). J$^{\pi}$: 2341.0γ to 2^+; assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2737[d] *2*		I	
2741[g] *5*	(5^-)	D I	XREF: D(2744). J$^{\pi}$: L(t,p)=(5,6); assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2745.5[b] *3*	(7^-)	I L	J$^{\pi}$: 450.0γ to (5^-), 1171.5γ to 6^+; band assignment.
2759[f] *2*	(3^-)[h]	D I	XREF: D(2760).
2764[g] *5*	(1^-)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2775.1 *6*	$5,6^+$	K	J$^{\pi}$: 1201γ to 6^+, 1377γ to 4^+.
2777.1?	(2^+)	H	J$^{\pi}$: 1830.8γ to 0^+, 2402.8γ to 2^+.
2784[g] *5*	(4^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2784.5[c] *4*	(7^-)	L	J$^{\pi}$: 488.9γ to (5^-), 1210.7γ to 6^+; band member.
2790.64 *17*	(4^+)	B L	J$^{\pi}$: 1216.5γ to 6^+, 1392.1γ to 4^+; 890.5γ to (2^+). Note, that significant feeding in ^{110}Rh β^- decay (28.0 s) ($J^{\pi}=(6^+)$) would suggest $J^{\pi}=5^+$.
2792[f] *2*	(3^-)[h]	I	
2805.03 *15*	(4^+)	B HI L	XREF: I(2804). J$^{\pi}$: 817.6γ to 6^+, 1593.6γ to (3^+); 904.5γ to (2^+). Note, that significant feeding in ^{110}Rh β^- decay (28.0 s) ($J^{\pi}=(6^+)$) would suggest $J^{\pi}=5^+$.
2807[e] *2*	$(2^+,6^+,7^-)$	I	J$^{\pi}$: assignment in ^{110}Pd(pol d,d′) (1993He13).
2818[f] *2*	(2^+)	F I	J$^{\pi}$: assignments in (e,e′) and ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2827[e] *2*	$(2^+,5^-)$[h]	I	
2845[g] *5*	(1^-)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2845.3 *7*		L	
2862[f] *2*	(2^+)[h]	I	
2871[f] *2*	(2^+)[h]	I	
2889[f] *2*	(2^+)[h]	I	
2893[g] *5*	(3^-)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2903.2 *10*	(10^+)	K	J$^{\pi}$: 607γ to 8^+.
2908[f] *2*	(2^+)[h]	I	
2912[g] *5*	(1^-)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2923.8 *7*		L	
2932[e] *2*	(2^+)[h]	I	
2937[e] *2*		I	
2948[f] *2*	(4^+)[h]	I	
2952[g] *5*	(2^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2972[g] *5*	(4^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2991.6 *4*	(8^-)	L	J$^{\pi}$: 207.2γ to (7^-), 633γ from (10^-).
2994[g] *5*	(3^-)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
2998[e] *2*		I	
3002[e] *2*	$(1,2^+,5^-)$[h]	I	
3009[g] *5*		E I	XREF: E(3015).
3023[g] *5*	(4^+)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3036[g] *5*		I	
3050[f] *2*		I	

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Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

E(level)†	$J^{\pi\ddagger}$	XREF	Comments
3058^{g} 5	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3062^{f} 2		I	
3070.2$^{\#}$ 5	(10$^+$)	LM	J^{π}: 774.0γ to 8$^+$; member of the g.s. band.
3071^{g} 5	(4$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3075^{f} 2		I	
3079^{f} 2	(2$^+$)^{h}	I	
3089^{g} 5	(4$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3097^{f} 2	(3$^-$)^{h}	I	
3102^{g} 5	(2$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3110^{f} 2	(2$^+$,5$^-$)^{h}	I	
3119^{g} 5	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3127^{e} 2		I	
3131.2 10	(10$^+$)	K	
3152^{g} 5	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3168^{g} 5	(1$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′), but (3$^-$) in ^{110}Pd(pol d,d′) (1993He13).
3181^{g} 2	(4$^+$)^{h}	I	
3191 5	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3195.8 5	(10$^+$)	L	J^{π}: 899.6γ to (8$^+$).
3232^{f} 2	(1,2$^+$,3$^-$)^{h}	I	
3240^{f} 2	(1,2$^+$,3$^-$)^{h}	I	
3246.1^{c} 4	(9$^-$)	L	J^{π}: 254.5γ to (8$^-$), 461.6γ to (7$^-$); band member.
3259^{g} 3	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3266.3 7		L	
3271^{f} 2	(2$^+$)^{h}	I	
3280^{g} 5	(1$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′), but J^{π}=(1,2$^+$,3$^-$) in ^{110}Pd(pol d,d′) (1993He13).
3288^{f} 2	(2$^+$,6$^+$)^{h}	I	
3301^{g} 5	(4$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3320^{f} 2	(4$^+$)^{h}	I	
3326.9^{b} 6	(9$^-$)	L	J^{π}: 581.4γ to (7$^-$); band member.
3333^{f} 2	(4$^+$)^{h}	I	
3353^{f} 2	(2$^+$,4$^+$)^{h}	I	
3368^{f} 2		I	
3374^{g} 5	(2$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′), but J^{π}=(2$^+$,4$^+$) in ^{110}Pd(pol d,d′) (1993He13).
3380^{f} 2		I	
3386^{f} 2	(2$^+$)^{h}	I	
3407^{g} 5	(4$^+$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3413^{f} 2		I	
3419^{f} 2	(2$^+$,5$^-$)^{h}	I	
3427^{d} 2		I	
3431^{d} 2		I	
3435^{d} 2		I	
3445^{f} 2	(2$^+$,5$^-$)^{h}	I	
3455^{e} 2		I	
3458^{e} 2		I	
3471^{f} 2		I	
3484^{g} 5	(3$^-$)	I	J^{π}: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).

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Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

E(level)†	J$^{\pi}$‡	XREF	Comments
3489^{f} *2*		I	
3501^{f} *2*		I	
3511^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3514^{f} *2*	(2$^+$)^{h}	I	
3525^{f} *2*	(2$^+$)^{h}	I	
3535^{f} *2*	(3$^-$)^{h}	I	
3561^{f} *2*	(2$^+$)^{h}	I	
3570^{f} *2*	(2,3,4,5,6)^{h}	I	
3575^{f} *2*	(4$^+$)^{h}	I	
3592^{f} *2*	(1,2$^+$,3$^-$)^{h}	I	
3607^{f} *2*	(1,2$^+$)^{h}	I	
3614^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′), but J^{π}=(1,2$^+$,3$^-$) in ^{110}Pd(pol d,d′) (1993He13).
3622^{f} *2*		I	
3624.1 *6*	(10$^-$)	L	J$^{\pi}$: 632.5γ to (8$^-$) in ^{176}Yb(^{31}P,Xγ).
3638^{f} *2*		I	
3642^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3653^{f} *2*	(2$^+$)^{h}	I	
3669^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3679^{f} *2*	(4$^+$)^{h}	I	
3687^{f} *2*		I	
3694^{f} *2*	(2$^+$,5$^-$)^{h}	I	
3700^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3718.1$^{\#}$ *5*	(12$^+$)	LM	J$^{\pi}$: 647.9γ to (10$^+$); member of the g.s. band.
3720^{f} *2*		I	
3730^{f} *2*		I	
3738^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3769^{g} *4*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3789^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3799^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3826^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3854^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3869^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3916^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
3955^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4001^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4030.2 *11*	(12$^+$)	K	J$^{\pi}$: 899γ to (10$^+$).
4031.1^{b} *7*	(11$^-$)	L	J$^{\pi}$: 704.2γ to (9$^-$); band member.
4037^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4065^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4154^{g} *5*	(3$^-$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4239^{g} *5*	(4$^+$)	I	J$^{\pi}$: assignment in ^{110}Pd(p,p′),(d,d′),(pol d,d′).
4484.1$^{\#}$ *7*	(14$^+$)	LM	J$^{\pi}$: 766.0γ to (12$^+$); member of the g.s. band.

† From least-squares fit to Eγ′s, unless otherwise stated.
‡ From comparison of experimental differential cross sections with coupled-channel calculations in ^{110}Pd(p,p′) and ^{110}Pd(d,d′)

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Adopted Levels, Gammas (continued)

^{110}Pd Levels (continued)

(1992Pi08,1990Pi14), unless otherwise stated.

[#] Band(A): g.s. band.

[@] Band(B): γ-band.

[&] Band(C): band based on 0^+ At 947-keV.

[a] Band(D): band based on 0^+ At 1171-keV.

[b] Band(E): Band based on (7^-), 2745.5 keV. Based on the $\nu h_{11/2} \otimes \nu g_{7/2}$ or $\nu h_{11/2} \otimes \nu d_{5/2}$ configuration (2003La23).

[c] Band(F): Band based on (5^-), 2295.5 keV. Based on the $\nu h_{11/2} \otimes \nu g_{7/2}$ or $\nu h_{11/2} \otimes \nu d_{5/2}$ configuration (2003La23).

[d] Unresolved multiplet in ^{110}Pd(pol d,d′) (1993He13).

[e] Unresolved doublet in ^{110}Pd(pol d,d′) (1993He13).

[f] From ^{110}Pd(pol d,d′) (1993He13).

[g] From ^{110}Pd(d,d′) or ^{110}Pd(p,p′) (1992Pi08 and 1990Pi14).

[h] From ^{110}Pd(pol d,d′) in 1993He13.

Adopted Levels, Gammas (continued)

γ(^{110}Pd)

E$_i$(level)	J$^\pi_i$	E$_\gamma$‡	I$_\gamma$‡	E$_f$	J$^\pi_f$	Mult.	δ	α†	Comments
373.80	2$^+$	373.80 *8*	100	0.0	0$^+$	E2		0.01448	α(K)=0.01245 *18*; α(L)=0.001661 *24*; α(M)=0.000314 *5*; α(N+..)=5.17×10^{-5} *8* α(N)=5.17×10^{-5} *8* B(E2)(W.u.)=55.5 *9* Mult.: α(exp) in ^{110}Rh β^- decay (3.35 s) (1988Ay02), but the value was not given by the authors.
813.59	2$^+$	439.76 *8*	100.0 *13*	373.80	2$^+$	E2+M1	−4.6 *+19−12*	0.00870 *15*	α(K)=0.00752 *13*; α(L)=0.000970 *20*; α(M)=0.000183 *4*; α(N+..)=3.03×10^{-5} *6* α(N)=3.03×10^{-5} *6* B(M1)(W.u.)=0.0005 *4*; B(E2)(W.u.)=44 *3* Mult.: A$_2$=−0.214 *37* using $\gamma(\theta)$ in 1969Ro05; $\gamma\gamma(\theta)$ in 1969Ro03. δ: From $\gamma\gamma(\theta)$ in 1969Ro03.
		813.52 *10*	35 *4*	0.0	0$^+$	[E2]		1.63×10^{-3}	α(K)=0.001423 *20*; α(L)=0.0001707 *24*; α(M)=3.20×10^{-5} *5*; α(N+..)=5.37×10^{-6} *8* α(N)=5.37×10^{-6} *8* B(E2)(W.u.)=0.74 *10* I$_\gamma$: From ^{110}Rh β^- decay (28.0 s).
920.78	4$^+$	(107&)		813.59	2$^+$				
		547.04 *10*	100	373.80	2$^+$	E2		0.00462	α(K)=0.00401 *6*; α(L)=0.000503 *7*; α(M)=9.46×10^{-5} *14*; α(N+..)=1.575×10^{-5} *22* α(N)=1.575×10^{-5} *22* B(E2)(W.u.)=90 *7* Mult.: A$_2$=0.36 *7* and A$_4$=−0.31 *11* from $\gamma(\theta)$ in Coulomb excitation (1962Ec01).
946.74	0$^+$	(133&)		813.59	2$^+$				
		572.89 *10*	100	373.80	2$^+$	[E2]		0.00406	B(E2)(W.u.)=37 *4* α(K)=0.00352 *5*; α(L)=0.000439 *7*; α(M)=8.26×10^{-5} *12*; α(N+..)=1.377×10^{-5} *20* α(N)=1.377×10^{-5} *20*
1170.65	0$^+$	356.9 *2*	47.8 *22*	813.59	2$^+$				I$_\gamma$: Other: 32 *9* in ^{110}Rh β^- decay (3.3 s).
		796.83 *10*	100 *7*	373.80	2$^+$				
1212.12	(3$^+$)	291.6# *2*	8.4# *17*	920.78	4$^+$				I$_\gamma$: Others: 10.4 *8* in ^{110}Pd(n,n′γ), 8 *4* in ^{176}Yb(^{31}P,Xγ).
		398.6# *2*	93# *5*	813.59	2$^+$				I$_\gamma$: Others: 100 *10* in ^{110}Pd(n,n′γ), 64 *4* in ^{176}Yb(^{31}P,Xγ).
		838.2# *3*	100# *8*	373.80	2$^+$				I$_\gamma$: Others: 58 *10* in ^{110}Pd(n,n′γ), 100 *4* in ^{176}Yb(^{31}P,Xγ).

$^{110}_{46}$Pd$_{64}$-8

γ(^{110}Pd) (continued)

E_i(level)	J_i^π	E_γ‡	I_γ‡	E_f	J_f^π	Mult.	α†	Comments
1214.48	2^+	(44&)		1170.65	0^+			
		267.4 *3*	24 *4*	946.74	0^+	[E2]	0.0435	α(K)=0.0370 *6*; α(L)=0.00534 *8*; α(M)=0.001011 *15*; α(N+..)=0.0001651 *24* α(N)=0.0001651 *24* B(E2)(W.u.)=1.6×10^2 *4*
		294&		920.78	4^+			
		401.0 *7*	28 *12*	813.59	2^+	[M1]	0.00955	α(K)=0.00834 *13*; α(L)=0.000987 *15*; α(M)=0.000185 *3*; α(N+..)=3.13×10^{-5} *5* α(N)=3.13×10^{-5} *5* B(M1)(W.u.)=0.0048 *22*
		840.9 *7*	64 *16*	373.80	2^+	[M1]	1.66×10^{-3}	α(K)=0.001454 *21*; α(L)=0.0001684 *24*; α(M)=3.16×10^{-5} *5*; α(N+..)=5.33×10^{-6} *8* α(N)=5.33×10^{-6} *8* B(M1)(W.u.)=0.0012 *4* I_γ: Other: 100 *38* in ^{110}Rh β^- decay (3.3 s).
		1214.5 *2*	100 *6*	0.0	0^+	[E2]	6.68×10^{-4}	α(K)=0.000577 *8*; α(L)=6.72×10^{-5} *10*; α(M)=1.258×10^{-5} *18*; α(N+..)=1.143×10^{-5} *17* α(N)=2.12×10^{-6} *3*; α(IPF)=9.31×10^{-6} *14* B(E2)(W.u.)=0.35 *5* I_γ: Other:69 *31* in ^{110}Rh β^- decay (3.3 s).
1398.31	4^+	(183&)		1214.48	2^+			
		(186&)		1212.12	(3^+)			
		477.8# *2*	53# *4*	920.78	4^+	[E2+M1]	0.0065 *4*	α(K)=0.00567 *25*; α(L)=0.00070 *6*; α(M)=0.000131 *12*; α(N+..)=2.19×10^{-5} *17* α(N)=2.19×10^{-5} *17* I_γ: Other: 62 *9* in ^{110}Pd(n,n′γ), 37 *5* in ^{176}Yb(^{31}P,Xγ).
		584.6# *2*	100# *8*	813.59	2^+	[E2]	0.00384	α(K)=0.00333 *5*; α(L)=0.000415 *6*; α(M)=7.80×10^{-5} *11*; α(N+..)=1.300×10^{-5} *19* α(N)=1.300×10^{-5} *19* B(E2)(W.u.)=34 *6*
		1024&		373.80	2^+			
1470.06	2^+	(72&)		1398.31	4^+			
		(255&)		1214.48	2^+			
		298.8 *3*	17 *3*	1170.65	0^+			
		(523&)		946.74	0^+			
		(549&)		920.78	4^+			
		656.42 *15*	71 *5*	813.59	2^+			

$^{110}_{46}$Pd$_{64}$-9

Adopted Levels, Gammas (continued)

γ(^{110}Pd) (continued)

E_i(level)	J^π_i	E_γ‡	I_γ‡	E_f	J^π_f	Mult.	α†	Comments
1470.06	2^+	1096.29 *13*	100 *7*	373.80	2^+			
		1470.2 *2*	31 *3*	0.0	0^+			
1573.99	6^+	(176&)		1398.31	4^+			
		653.1 *2*	100	920.78	4^+	[E2]	0.00285	α(K)=0.00248 *4*; α(L)=0.000304 *5*; α(M)=5.71×10^{-5} *8*; α(N+..)=9.54×10^{-6} *14* α(N)=9.54×10^{-6} *14* B(E2)(W.u.)=108 *11*
1718.86	4^+	(144&)		1573.99	6^+			
		(248&)		1470.06	2^+			
		(320&)		1398.31	4^+			
		503&		1214.48	2^+			
		797&	25	920.78	4^+	[M1]	0.00187	α(K)=0.001642 *23*; α(L)=0.000190 *3*; α(M)=3.57×10^{-5} *5*; α(N+..)=6.02×10^{-6} *9* α(N)=6.02×10^{-6} *9* B(M1)(W.u.)=0.0032 *5* I_γ: From Coulomb excitation.
		905.2 *2*	100 *7*	813.59	2^+	[E2]	1.26×10^{-3}	α(K)=0.001105 *16*; α(L)=0.0001313 *19*; α(M)=2.46×10^{-5} *4*; α(N+..)=4.13×10^{-6} *6* α(N)=4.13×10^{-6} *6* B(E2)(W.u.)=8.8 *15*
		1345.5 *2*	28.1 *24*	373.80	2^+	[E2]	5.68×10^{-4}	α(K)=0.000467 *7*; α(L)=5.41×10^{-5} *8*; α(M)=1.012×10^{-5} *15*; α(N+..)=3.67×10^{-5} *6* α(N)=1.704×10^{-6} *24*; α(IPF)=3.50×10^{-5} *5* B(E2)(W.u.)=0.34 *6*
1759.3	(5^+)	547.2@ *3*	100@	1212.12	(3^+)			
1889.78	2^+	(172&)		1718.86	4^+			
		(420&)		1470.06	2^+			
		(492&)		1398.31	4^+			
		(719&)		1170.65	0^+			
		941.5 *12*	3.4 *15*	946.74	0^+			
		(969&)		920.78	4^+			
		1076.7 *8*	5.1 *16*	813.59	2^+			
		1515.9 *2*	100 *9*	373.80	2^+			
		(1890&)		0.0	0^+			
1900.04	(4^+)	501.9# *2*	11# *3*	1398.31	4^+			I_γ: Other: 13 *5* in ^{176}Yb(^{31}P,Xγ).
		687.7# *2*	100# *7*	1212.12	(3^+)			I_γ: Other: 94 *12* in ^{110}Pd(n,n′γ).

$^{110}_{46}$Pd$_{64}$-10

Adopted Levels, Gammas (continued)

$\gamma(^{110}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Comments
1900.04	(4+)	979.2[#] *3*	9.8[#] *18*	920.78	4+	I_γ: Other: 46 *9* in ^{110}Pd(n,n′γ) and 15 *5* in ^{176}Yb(^{31}P,Xγ).
		1086.5[#] *3*	22[#] *7*	813.59	2+	
1900.5	(2+)	729.9 *10*	41 *12*	1170.65	0+	
		1526.7 *4*	100 *12*	373.80	2+	
1934.60	4+	(218[&])		1716.6	2+	
		(362[&])		1573.99	6+	
		463.9 *4*	100 *11*	1470.06	2+	
		(538[&])		1398.31	4+	
		(721[&])		1214.48	2+	
		722.5 *4*	61 *8*	1212.12	(3+)	
		1014.0 *5*	67 *17*	920.78	4+	
		1120.8 *3*	61 *11*	813.59	2+	
		1560.8 *4*	78 *11*	373.80	2+	
1987.22	(6+)	588.8[#] *2*	100[#]	1398.31	4+	
2037.67	3−	1224.2 *3*	20.0 *18*	813.59	2+	
		1663.8 *2*	100 *10*	373.80	2+	
2061.0	(5,6+)	(125[&])		1934.60	4+	
		(343[&])		1718.86	4+	
		(487[&])		1573.99	6+	
		663[&]		1398.31	4+	
		(1140[&])		920.78	4+	
2089.1	(4+)	(371[&])		1718.86	4+	
		(515[&])		1573.99	6+	
		691[&]		1398.31	4+	
		1168[&]		920.78	4+	
		1275[&]		813.59	2+	
		1715[&]		373.80	2+	
2125.3	(1−)	1751.3 *5*	15 *3*	373.80	2+	
		2125.3 *3*	100 *10*	0.0	0+	
2140.70	2+	(423[&])		1718.86	4+	
		(567[&])		1573.99	6+	
		(671[&])		1470.06	2+	
		(743[&])		1398.31	4+	
		(926[&])		1214.48	2+	
		929.2[a] *3*	100 *14*	1212.12	(3+)	

$^{110}_{46}Pd_{64}$-11

Adopted Levels, Gammas (continued)

γ(^{110}Pd) (continued)

E$_i$(level)	J$^\pi_i$	E$_\gamma$[‡]	I$_\gamma$[‡]	E$_f$	J$^\pi_f$	Comments
2140.70	2$^+$	1221.0[a] *4*	90 *10*	920.78	4$^+$	I$_\gamma$: Other: Iγ=47 in Coulomb excitation (1989SvZZ).
		(1327[&])		813.59	2$^+$	
		1766.7 *3*	100 *10*	373.80	2$^+$	
2193.0	(2$^+$)	1378.8 *4*	100 *16*	813.59	2$^+$	
		1819.8 *4*	59 *7*	373.80	2$^+$	
2260.67	(5$^+$)	1048.5[#] *3*	100[#] *21*	1212.12	(3$^+$)	
		1340.0[#] *3*	36[#] *8*	920.78	4$^+$	
2276.0	(3$^-$)	1354.9 *7*	21 *5*	920.78	4$^+$	
		1462.5 *3*	100 *10*	813.59	2$^+$	
2293.3	(2$^+$)	1354 *20*		920.78	4$^+$	E$_\gamma$: From ^{110}Pd(p,p′γ).
		1919.5 *3*	100	373.80	2$^+$	
		2309 *20*	13 *3*	0.0	0$^+$	E$_\gamma$,I$_\gamma$: From ^{110}Pd(p,p′γ).
2295.5	(5$^-$)	721.5[@] *5*	33[@] *7*	1573.99	6$^+$	
		1374.7[@] *5*	100[@] *7*	920.78	4$^+$	
2296.2	8$^+$	(235[&])		2061.0	(5,6$^+$)	
		722.2[@] *4*	100[@]	1573.99	6$^+$	
2322.08	2$^+$	1375.3 *3*	100 *11*	946.74	0$^+$	
		1401.2 *4*	14 *3*	920.78	4$^+$	
		1948.7 *11*	6 *3*	373.80	2$^+$	
		2322.6 *10*	6.3 *19*	0.0	0$^+$	
2335.2	(6$^+$)	(39[&])		2296.2	8$^+$	
		(274[&])		2061.0	(5,6$^+$)	
		617[&]		1718.86	4$^+$	
		761[&]		1573.99	6$^+$	
		(937[&])		1398.31	4$^+$	
		1414[&]		920.78	4$^+$	
2369.7	2$^+$	1449.5 *20*	27 *13*	920.78	4$^+$	
		1556.3 *10*	79 *21*	813.59	2$^+$	
		2369.6 *6*	100 *23*	0.0	0$^+$	
2446.61	(2$^+$)	1048.3 *2*	100	1398.31	4$^+$	
		2094[a] *20*	30 *7*	373.80	2$^+$	E$_\gamma$,I$_\gamma$: From ^{110}Pd(p,p′γ).
		2452[a] *20*	19 *11*	0.0	0$^+$	E$_\gamma$,I$_\gamma$: From ^{110}Pd(p,p′γ).
2474.4	(2$^+$)	1076.7 *8*	34 *11*	1398.31	4$^+$	
		2100.0 *6*	57 *14*	373.80	2$^+$	
		2474.4 *4*	100 *14*	0.0	0$^+$	
2498.9	(2$^+$)	1286.7[a] *4*	100 *18*	1212.12	(3$^+$)	
		1577.3[a] *7*	64 *18*	920.78	4$^+$	

$^{110}_{46}Pd_{64}$-12

Adopted Levels, Gammas (continued)

$\gamma(^{110}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	Comments
2563.8	(3⁻)	2190.0 *4*	100	373.80	2⁺	
2615.3		714.8[@] *3*	100[@]	1900.04	(4⁺)	
2650.7	(8⁺)	663.5[@] *3*	100[@]	1987.22	(6⁺)	
2663.1	(2⁺)	762.6[@] *4*	100[@]	1900.04	(4⁺)	
2686.6	(2⁺)	1873.2 *5*	53 *16*	813.59	2⁺	
		2312.7 *4*	100 *11*	373.80	2⁺	
2714.6	(4⁺)	1900.2 *20*	56 *26*	813.59	2⁺	
		2341.0 *10*	100 *31*	373.80	2⁺	
2745.5	(7⁻)	450.0[@] *6*	<7.7[@]	2295.5	(5⁻)	
		1171.5[@] *3*	100[@] *8*	1573.99	6⁺	
2775.1	5,6⁺	714[&]		2061.0	(5,6⁺)	
		1201[&]		1573.99	6⁺	
		1377[&]		1398.31	4⁺	
2777.1?	(2⁺)	1830.8[a] *11*	100 *35*	946.74	0⁺	
		2402.8[a] *10*	88 *28*	373.80	2⁺	
2784.5	(7⁻)	488.9 *3*	100 *14*	2295.5	(5⁻)	
		1210.7 *5*	29 *14*	1573.99	6⁺	
2790.64	(4⁺)	803.5[#] *2*	11[#] *3*	1987.22	(6⁺)	
		890.5[#] *3*	100[#] *12*	1900.04	(4⁺)	
		1216.5[#] *3*	22[#] *6*	1573.99	6⁺	
		1392.1[#] *3*	93[#] *10*	1398.31	4⁺	
		1579.2[#] *4*	11[#] *5*	1212.12	(3⁺)	
		1869.5[#] *5*	20[#] *4*	920.78	4⁺	
2805.03	(4⁺)	544.4[#] *2*	35[#] *6*	2260.67	(5⁺)	
		817.6[#] *2*	10[#] *3*	1987.22	(6⁺)	
		904.5[#] *3*	100[#] *10*	1900.04	(4⁺)	
		1230.9[#] *3*	42[#] *8*	1573.99	6⁺	I_γ: Other: 83 *17* in $^{176}Yb(^{31}P,X\gamma)$.
		1406.6[#] *3*	24[#] *4*	1398.31	4⁺	I_γ: Other: 14 *5* in $^{110}Pd(n,n'\gamma)$.
		1593.6[#] *3*	21[#] *5*	1212.12	(3⁺)	I_γ: Other: 100 *12* in $^{110}Pd(n,n'\gamma)$.
		1884.1[#] *4*	26[#] *5*	920.78	4⁺	
2845.3		1271.3[@] *6*	100[@]	1573.99	6⁺	
2903.2	(10⁺)	607 *1*	100	2296.2	8⁺	
2923.8		1349.8[@] *6*	100[@]	1573.99	6⁺	
2991.6	(8⁻)	207.2[@] *4*	100[@] *20*	2784.5	(7⁻)	
		246.1[@] *5*	60[@] *20*	2745.5	(7⁻)	

From ENSDF

$^{110}_{46}Pd_{64}$-13

Adopted Levels, Gammas (continued)

$\gamma(^{110}Pd)$ (continued)

E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f	E_i(level)	J^π_i	E_γ[‡]	I_γ[‡]	E_f	J^π_f
3070.2	(10^{+})	774.0[@] *3*	100[@]	2296.2	8^{+}	3624.1	(10^{-})	632.5[@] *4*	100[@]	2991.6	(8^{-})
3131.2	(10^{+})	835[&]		2296.2	8^{+}	3718.1	(12^{+})	522.3[@] *4*	36[@] *9*	3195.8	(10^{+})
3195.8	(10^{+})	899.6[@] *3*	100[@]	2296.2	8^{+}			647.9[@] *3*	100[@] *9*	3070.2	(10^{+})
3246.1	(9^{-})	254.5[@] *6*	<20[@]	2991.6	(8^{-})	4030.2	(12^{+})	899		3131.2	(10^{+})
		461.6[@] *5*	40[@] *20*	2784.5	(7^{-})			1127		2903.2	(10^{+})
		500.5[@] *4*	100[@] *20*	2745.5	(7^{-})	4031.1	(11^{-})	704.2[@] *3*	100[@]	3326.9	(9^{-})
3266.3		651.0[@] *5*	100[@]	2615.3		4484.1	(14^{+})	766.0[@] *4*	100[@]	3718.1	(12^{+})
3326.9	(9^{-})	581.4[@] *5*	100[@]	2745.5	(7^{-})						

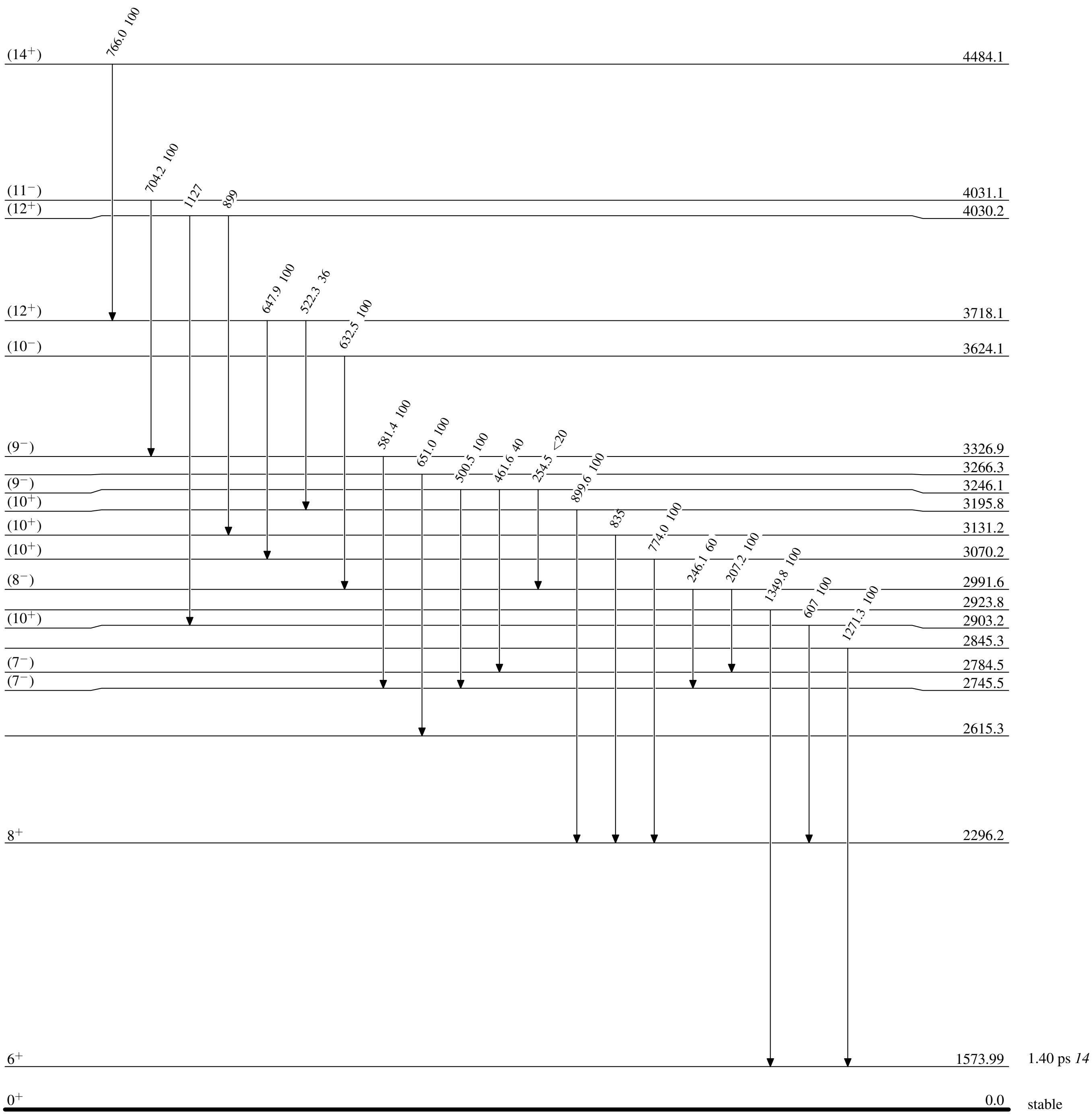
[†] Additional information 1.
[‡] From $^{110}Pd(n,n'\gamma)$, unless otherwise stated.
[#] From ^{110}Rh β^{-} decay (28.0 s).
[@] From $^{176}Yb(^{31}P,X\gamma)$ (2003La23).
[&] From Coulomb excitation.
[a] Placement of transition in the level scheme is uncertain.

$^{110}_{46}Pd_{64}$-14

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

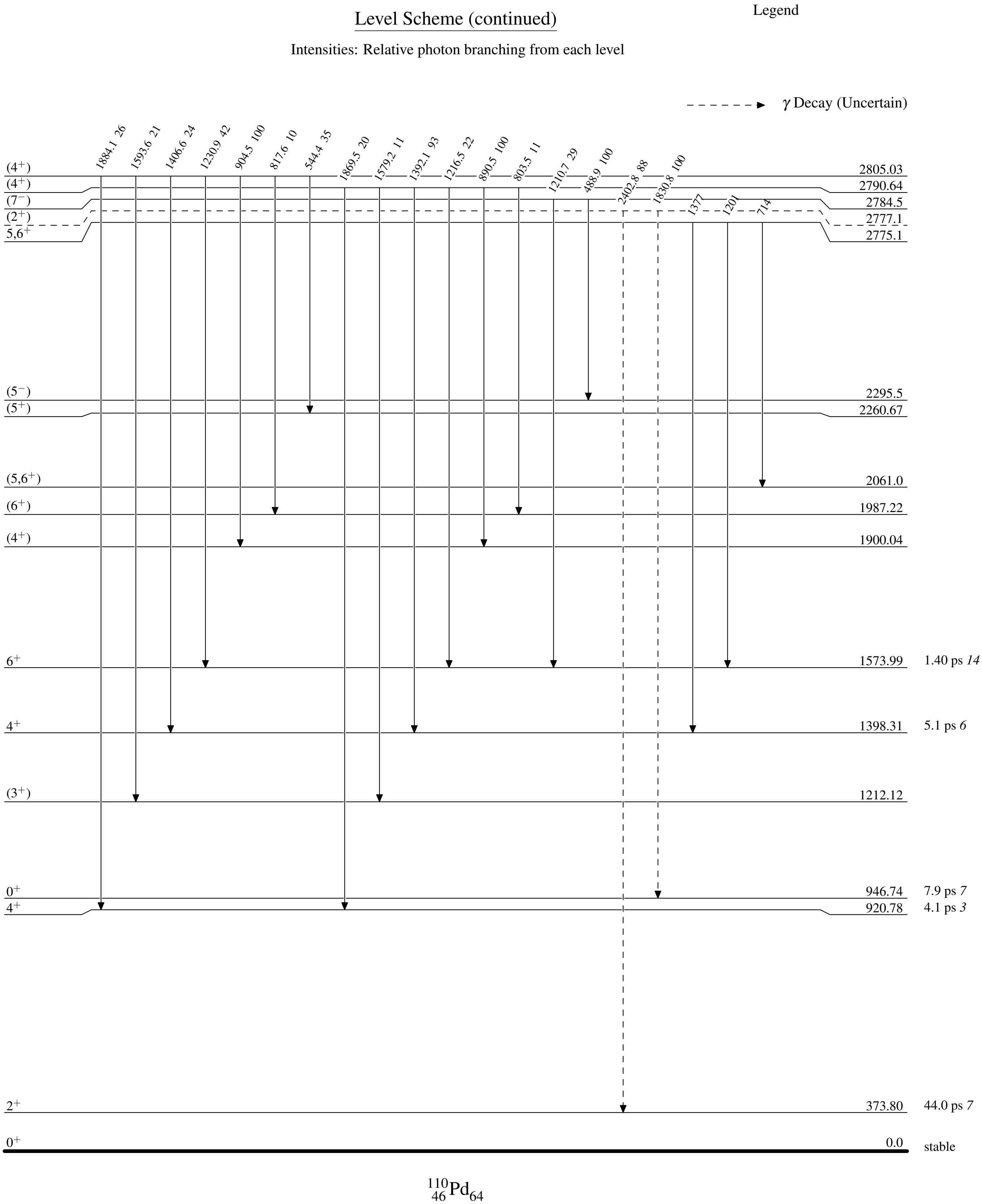


$^{110}_{46}Pd_{64}$

Adopted Levels, Gammas

Level Scheme (continued)

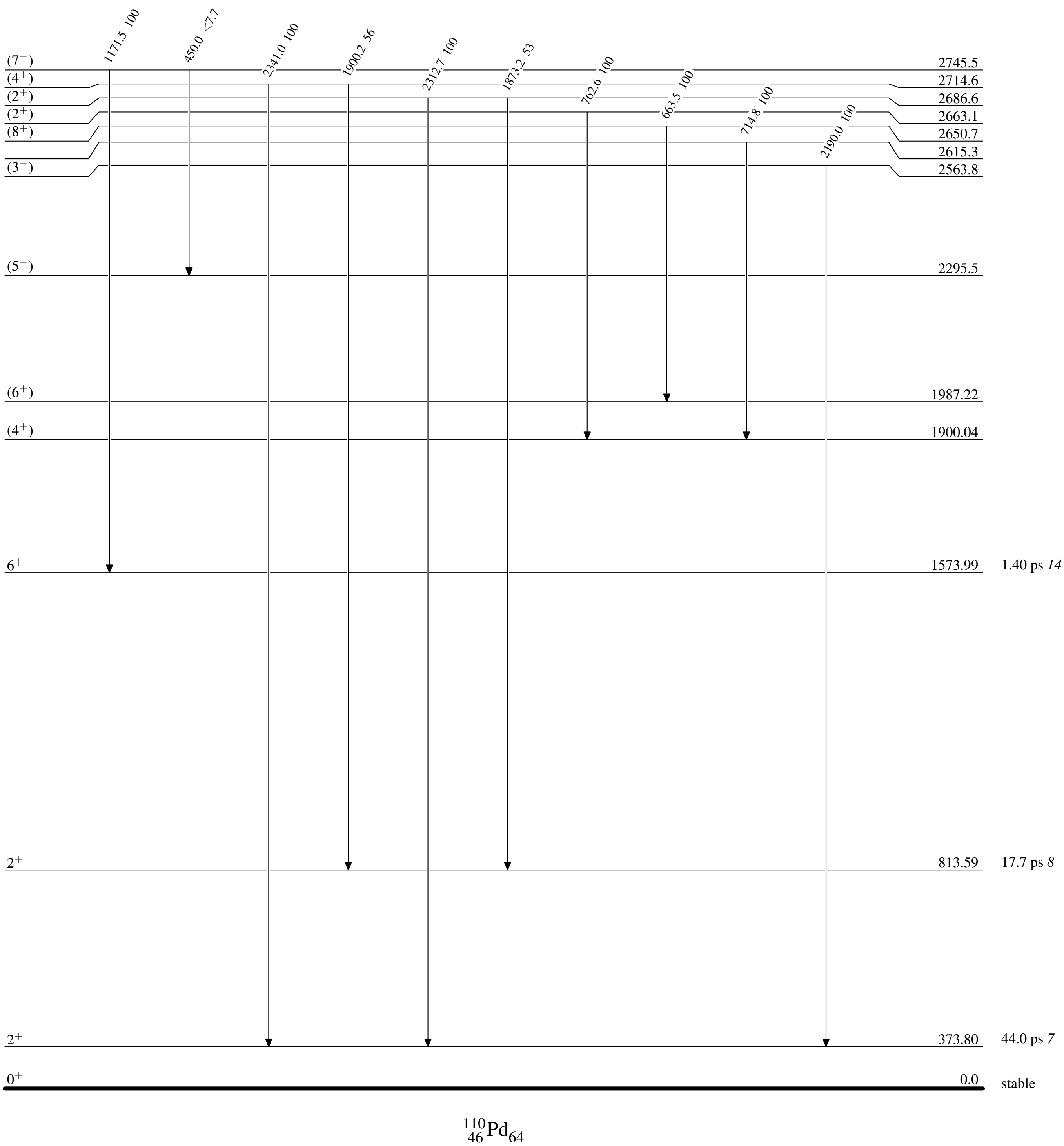
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

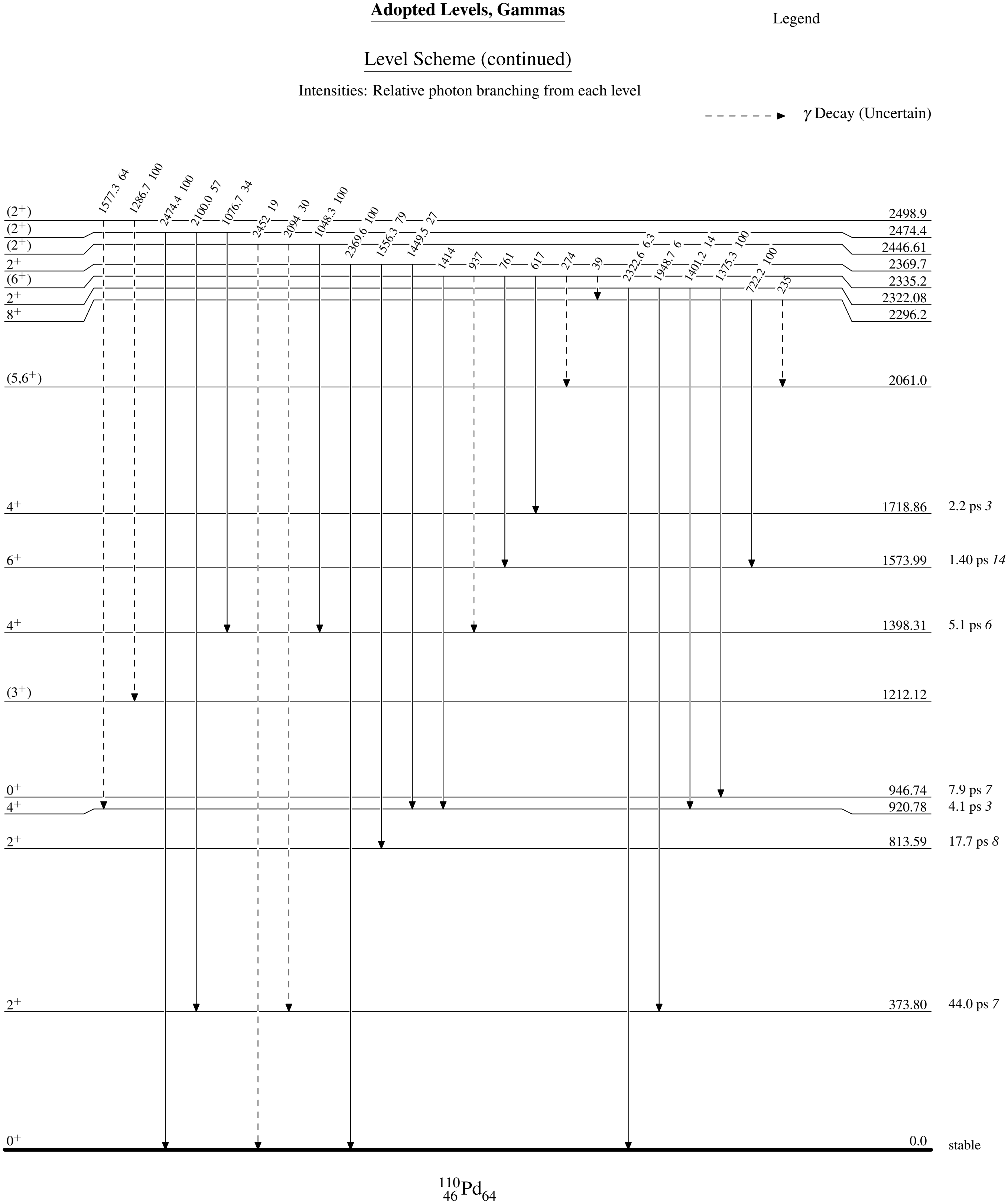
Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

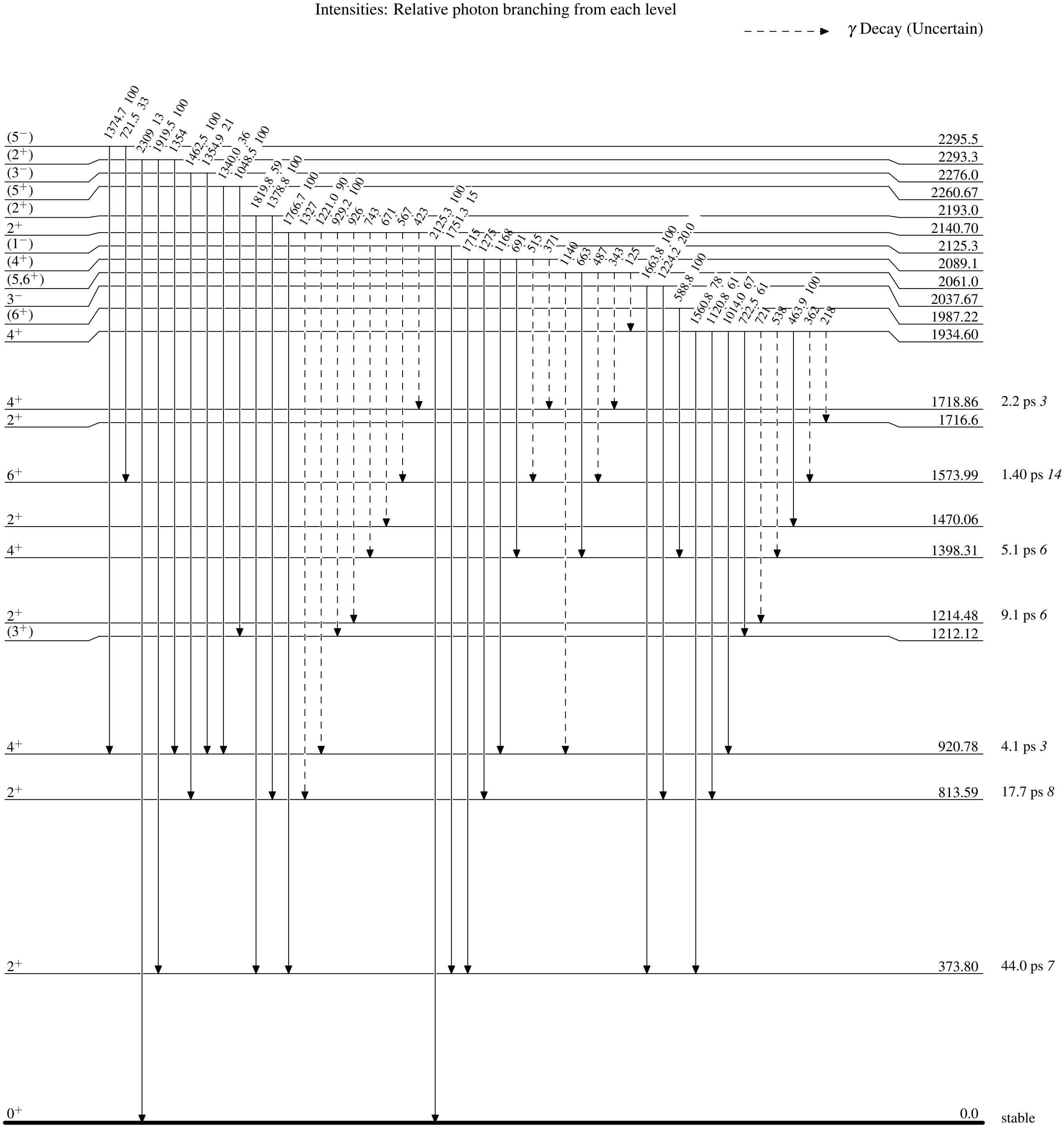


Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



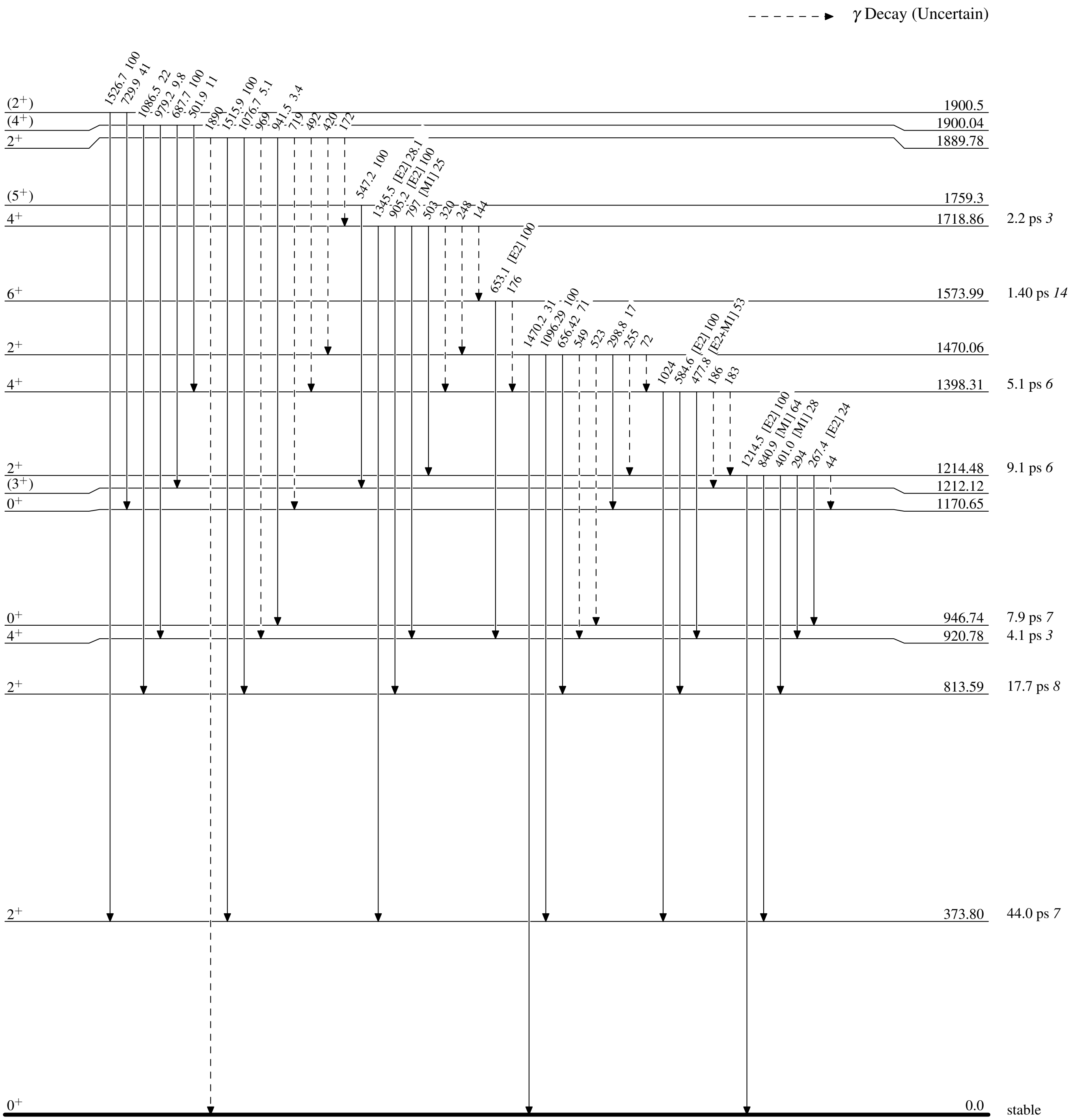
$^{110}_{46}Pd_{64}$

Adopted Levels, Gammas

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level



$^{110}_{46}Pd_{64}$

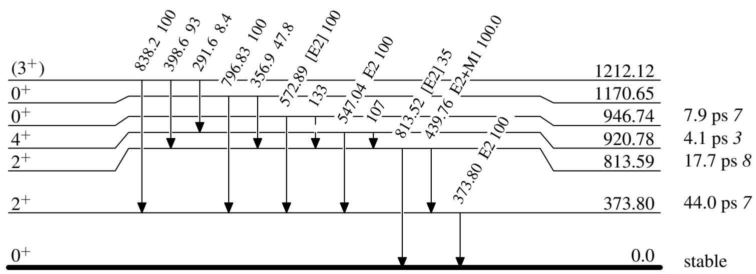
Adopted Levels, Gammas

Legend

Level Scheme (continued)

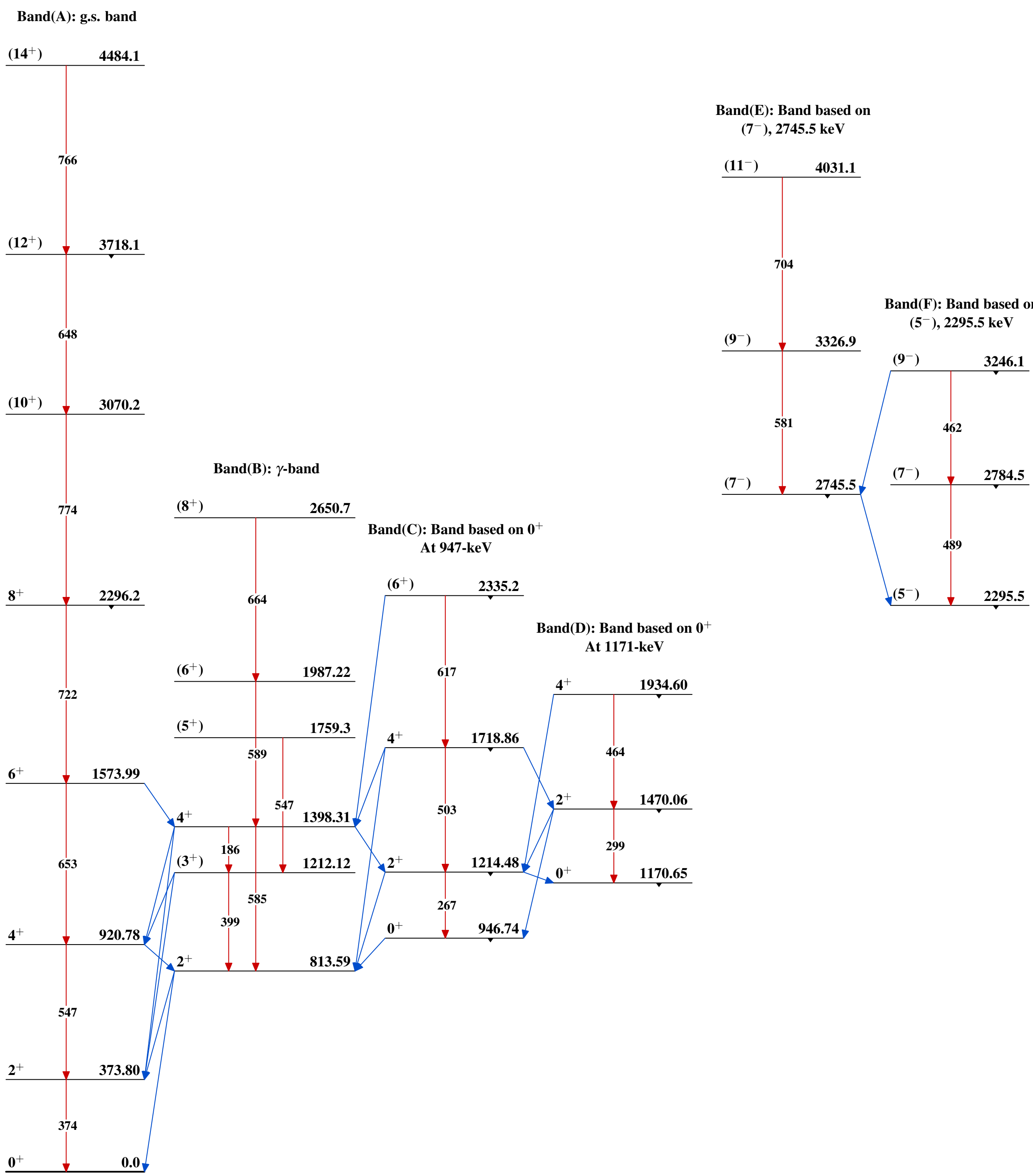
Intensities: Relative photon branching from each level

γ Decay (Uncertain)



$^{110}_{46}Pd_{64}$

Adopted Levels, Gammas



$^{110}_{46}Pd_{64}$