

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 110,1239 (2009)	1-Feb-2008

$Q(\beta^-)=2229.8$ 16; $S(n)=5726.3$ 4; $S(p)=10447$ 18; $Q(\alpha)=-4551$ 9 [2012Wa38](#)

Note: Current evaluation has used the following Q record 2217 115726.3 4 1.052×10^{45} $-4.51e+312$ [2003Au03](#).

 ^{111}Pd LevelsCross Reference (XREF) Flags

A	$^{110}\text{Pd}(d,p)$	D	$^{176}\text{Yb}(^{30}\text{Si},F\gamma)$
B	^{111}Pd IT decay (5.5 h)	E	$^{110}\text{Pd}(n,\gamma)$ E=th
C	^{111}Rh β^- decay (11 s)		

E(level) [‡]	J ^π [†]	T _{1/2}	XREF	Comments
0.0	5/2 ⁺	23.4 min 2	A B C D E	$\% \beta^- = 100$ T _{1/2} : 23.4 min 2 (1977Kr14) γ -decay curves. Others: 1952Mc34 , 1957Dz14 . J ^π : allowed β transition ($\log ft=5.85$) to 7/2 ⁺ , 59.8 level of ^{111}Ag . γ from 1/2 ⁺ , 7/2 ⁺ level.
72.2 2	1/2 ⁺		A C E	J ^π : L=0 in (d,p).
172.18 [#] 8	11/2 ⁻	5.5 h 1	A B D	$\% \text{IT}=73$ 3; $\% \beta^- = 27$ 3 T _{1/2} : from 5.5 h 1 (1952Mc34), 5.5 h 2 (1957Dz14). J ^π : based on L(n)=5 in (d,p), E3 γ to 5/2 ⁺ .
191.3 3	+		A C E	J ^π : L(d,p)=0+2 for the 191.3+195.1 levels, 1984KaZW suggest J ^π =(7/2 ⁻) not adopted by evaluators. E(level): multiplet ($\Delta E \leq 3$ keV); L(n)=0+2 fits angular distribution.
195.1 2	+		A C E	J ^π : L(d,p)=0+2 for the 191.3+195.1 levels.
230.8 3	7/2 ⁺ , 9/2 ⁺		A C E	J ^π : L=4 (d,p).
259.3 2			C	
275.3 3	(3/2 ⁺ , 5/2 ⁺)		A C E	J ^π : L=(2) (d,p).
384.2 3	3/2 ⁺ , 5/2 ⁺		A C	J ^π : L=2 (d,p).
411.8 2	7/2 ⁺ , 9/2 ⁺		A C E	J ^π : L=4 (d,p).
450.4 2	3/2 ⁻ , 5/2 ⁻ , 7/2 ⁻		A C E	J ^π : L=3,1 (d,p), γ to 5/2 ⁺ .
508	1/2 ⁺		A	J ^π : L=0 (d,p).
523.8 2			C	
534	5/2 ⁻ , 7/2 ⁻		A	J ^π : L=3 (d,p).
567	(7/2 ⁺ , 9/2 ⁺)		A	J ^π : L=(4) (d,p).
585 [#]	(15/2 ⁻)		D	
587	1/2 ⁻ , 3/2 ⁻		A	J ^π : L=1 (d,p).
603			A	
663.8 5	3/2 ⁺ , 5/2 ⁺		A C	J ^π : L=2 (d,p).
715	3/2 ⁺ , 5/2 ⁺		A	J ^π : L=2 (d,p).
740	3/2 ⁺ , 5/2 ⁺		A	J ^π : L=2 (d,p).
788.9 2			A C	
866			A	
887	(7/2 ⁺ , 9/2 ⁺)		A	J ^π : L=(4) (d,p).
929	1/2 ⁺		A	J ^π : L=0 (d,p).
1000	1/2 ⁻ , 3/2 ⁻		A	J ^π : L=1 (d,p).
1020			A	
1082.8 2			A C	
1090.2 2			C	
1117	(1/2 ⁺)		A	J ^π : L=(0) (d,p).
1133	-		A	J ^π : L=3,1 (d,p).
1204 [#]	(19/2 ⁻)		D	
1207.2 3			C	

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Adopted Levels, Gammas (continued) ^{111}Pd Levels (continued)

$E(\text{level})^{\ddagger}$	$J^{\pi}^{\dagger}$	XREF	Comments
1356	$(1/2^{-}, 3/2^{-})$	A	J^{π} : L=(1) (d,p).
1453	$(5/2^{-}, 7/2^{-})$	A	J^{π} : L=(3) (d,p).
1493	$1/2^{+}$	A	J^{π} : L=0 (d,p).
1521	$1/2^{-}, 3/2^{-}$	A	J^{π} : L=1 (d,p).
1600	$1/2^{-}, 3/2^{-}$	A	J^{π} : L=1 (d,p).
1624	$5/2^{-}, 7/2^{-}$	A	J^{π} : L=3 (d,p).
1673	$5/2^{-}, 7/2^{-}$	A	J^{π} : L=3 (d,p).
1713	$1/2^{-}, 3/2^{-}$	A	J^{π} : L=1 (d,p).
1808	$5/2^{-}, 7/2^{-}$	A	J^{π} : L=3 (d,p).
1928	$(1/2^{-}, 3/2^{-})$	A	J^{π} : L=(1) (d,p).
1981 [#]	$(23/2^{-})$	D	
2018	$5/2^{-}, 7/2^{-}$	A	J^{π} : L=3 (d,p).
2878 [#]	$(27/2^{-})$	D	
3831 [#]	$(31/2^{-})$	D	

[†] J^{π} for levels seen in ($^{30}\text{Si}, \text{Fy}$) are based on band assignments.

[‡] From least-squares fit to E_{γ} 's (by evaluator).

[#] Band(A): $\nu h_{11/2}$, $\alpha = -1/2$ band.

 $\gamma(^{111}\text{Pd})$

$E_i(\text{level})$	J_i^{π}	$E_{\gamma}^{\dagger}$	$I_{\gamma}^{\dagger}$	E_f	J_f^{π}	Mult. [‡]	$\alpha^{\#}$	Comments
72.2	$1/2^{+}$	72.2	100	0.0	$5/2^{+}$			
172.18	$11/2^{-}$	172.18 8	100	0.0	$5/2^{+}$	E3	1.15	$B(E3)(\text{W.u.}) = 6.1 \times 10^{-6}$ 3 E_{γ} : from ^{111}Pd IT decay.
191.3	+	191.3 @ 3	100 @	0.0	$5/2^{+}$			
195.1	+	122.9 3	100	72.2	$1/2^{+}$			
		195.1 3	90	0.0	$5/2^{+}$			
230.8	$7/2^{+}, 9/2^{+}$	230.0 3	100	0.0	$5/2^{+}$			
259.3		187.1 3	45	72.2	$1/2^{+}$			
		259.3 3	≤ 100	0.0	$5/2^{+}$			
275.3	$(3/2^{+}, 5/2^{+})$	275.4 3	100	0.0	$5/2^{+}$			
384.2	$3/2^{+}, 5/2^{+}$	189.2 3	31	195.1	+			
		312.0 3	100	72.2	$1/2^{+}$			
411.8	$7/2^{+}, 9/2^{+}$	136.4 3	9	275.3	$(3/2^{+}, 5/2^{+})$			
		181.0 3	11	230.8	$7/2^{+}, 9/2^{+}$			
		220.5 3	15	191.3	+			
		411.8 3	100	0.0	$5/2^{+}$			
450.4	$3/2^{-}, 5/2^{-}, 7/2^{-}$	191.3 @ 3	≤ 64 @	259.3				
		255.4 3	27	195.1	+			
		259.3 3	≤ 100	191.3	+			
		450.3 3	27	0.0	$5/2^{+}$			
523.8		293.0 3	60	230.8	$7/2^{+}, 9/2^{+}$			
		523.9 3	100	0.0	$5/2^{+}$			
585	$(15/2^{-})$	413		172.18	$11/2^{-}$			
663.8	$3/2^{+}, 5/2^{+}$	388.5 3	100	275.3	$(3/2^{+}, 5/2^{+})$			
		663.8 3	38	0.0	$5/2^{+}$			
788.9		377.0 3	≤ 10	411.8	$7/2^{+}, 9/2^{+}$			
		513.5 3	16	275.3	$(3/2^{+}, 5/2^{+})$			
		529.5 3	16	259.3				
		558.3 3	42	230.8	$7/2^{+}, 9/2^{+}$			

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Adopted Levels, Gammas (continued) $\gamma(^{111}\text{Pd})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\dagger$	E_f	J_f^π
788.9		593.8 3	40	195.1 +		1090.2		859.4 3	65	230.8 7/2 ⁺ , 9/2 ⁺	
		789.0 3	100	0.0 5/2 ⁺				895.0 3	50	195.1 +	
1082.8		807.5 3	100	275.3 (3/2 ⁺ , 5/2 ⁺)		1204	(19/2 ⁻)	619		585 (15/2 ⁻)	
		852.0 3	27	230.8 7/2 ⁺ , 9/2 ⁺		1207.2		931.8 3	100	275.3 (3/2 ⁺ , 5/2 ⁺)	
		891.5 3	73	191.3 +				976.5 3	25	230.8 7/2 ⁺ , 9/2 ⁺	
1090.2		678.5 3	≤25	411.8 7/2 ⁺ , 9/2 ⁺		1981	(23/2 ⁻)	776		1204 (19/2 ⁻)	
		815.0 3	100	275.3 (3/2 ⁺ , 5/2 ⁺)		2878	(27/2 ⁻)	897		1981 (23/2 ⁻)	
		831.0 3	50	259.3		3831	(31/2 ⁻)	953		2878 (27/2 ⁻)	

[†] From ^{111}Rh β^- decay.

[‡] From ^{111}Pd IT decay.

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.

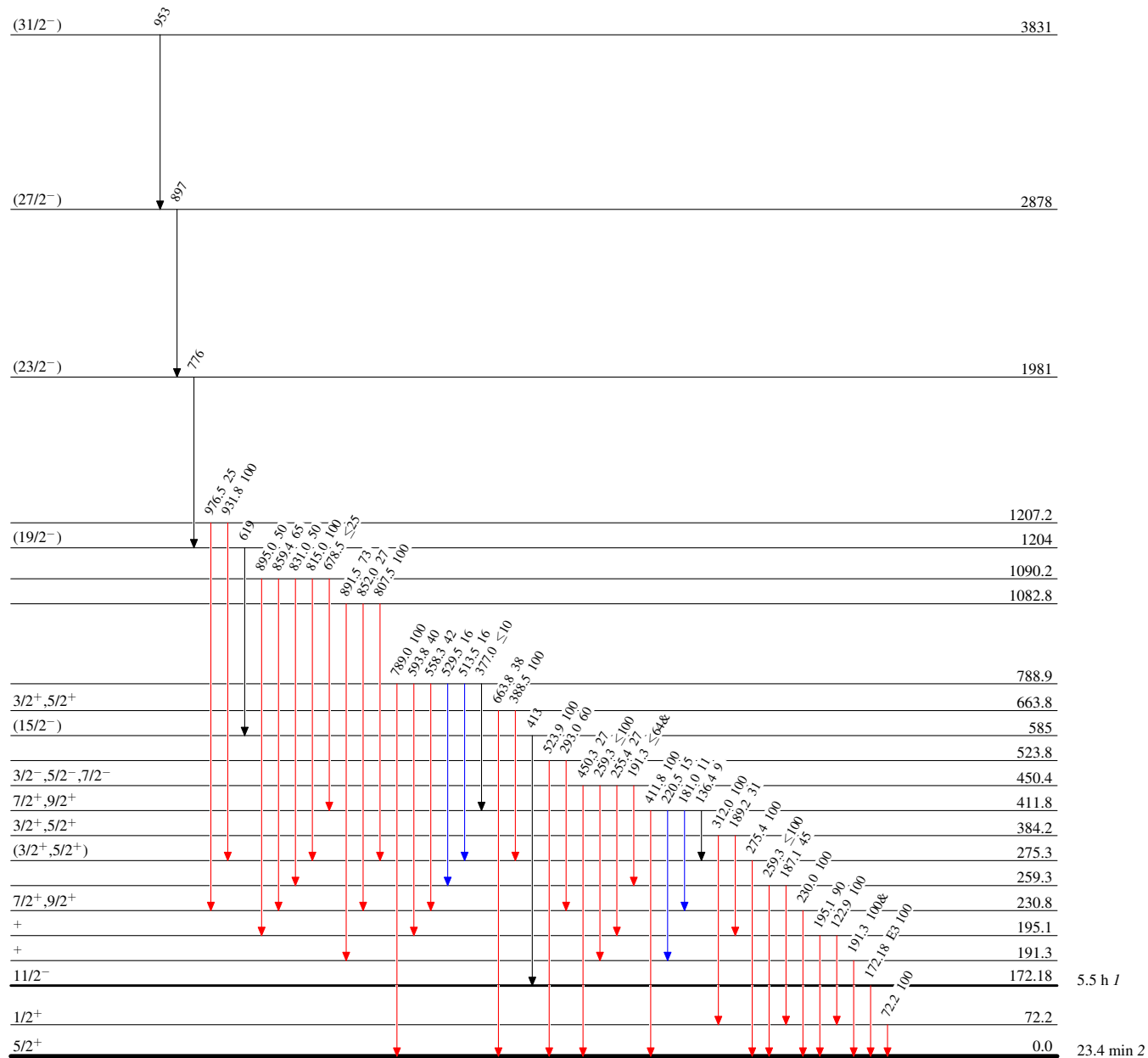
@ Multiply placed with undivided intensity.

Adopted Levels, GammasLevel Scheme

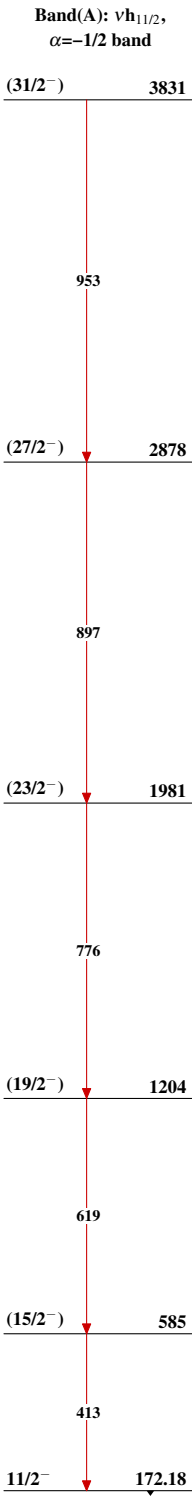
Intensities: Type not specified
& Multiply placed: undivided intensity given

Legend

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

 $^{111}_{46}\text{Pd}_{65}$

Adopted Levels, Gammas



$^{111}_{46}\text{Pd}_{65}$