

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 113,515 (2012)	1-Jan-2012

Q(β^-)=1440 9; S(n)=7971 10; S(p)=12012 10; Q(α)=-5845 12 [2012Wa38](#)
 Note: Current evaluation has used the following Q record 1440 9 7971 1012012 10-5846 12 [2011AuZZ](#).

¹¹⁴Pd Levels

Cross Reference (XREF) Flags

A	²⁵² Cf SF decay	D	(HI,xny)
B	¹¹⁴ Rh β^- decay (1.85 s):J=(7 ⁻)	E	Coulomb excitation
C	¹¹⁴ Rh β^- decay (1.85 s):J=1 ⁺		

E(level)	J $^\pi$	T _{1/2}	XREF	Comments
0 [†]	0 ⁺	2.42 min 6	ABCD	$\% \beta^- = 100$ T _{1/2} : weighted average of 2.4 min 1 (1958A190), 2.45 min 10 (1975BrYN), 2.42 min 15 (1988Ay02).
332.61 [†] 10	2 ⁺	82 ps 14	ABCD	$\mu = 0.44$ 22 (2011StZY , 2007StZZ) J $^\pi$: E2 γ to g.s. T _{1/2} : from RDDS method (2008De30). The older value 0.20 ns 6 (1974JaYY) from $\gamma\gamma(t)$ in ²⁵² Cf SF decay seems too high.
694.62 ^{&} 15	2 ⁺		BCD	J $^\pi$: γ 's to 0 ⁺ and 2 ⁺ Band head of the γ band.
852.37 [†] 16	4 ⁺		ABCD	J $^\pi$: γ to 2 ⁺ , no γ to g.s. and g.s. band with $\Delta J=2$.
872.0 3	(0 ⁺)		BC	J $^\pi$: γ to 2 ⁺ and syst.
1011.65 ^{&} 16	(3 ⁺)		AB D	J $^\pi$: γ band.
1115.56 21	(0 ⁺)		BC	J $^\pi$: from syst.
1319.89 ^{&} 17	(4 ⁺)		AB D	J $^\pi$: γ band.
1391.92 20	2 ⁺		BC	
1500.51 [†] 18	(6 ⁺)		AB D	J $^\pi$: γ to 4 ⁺ and and g.s. band with $\Delta J=2$.
1630.69 ^{&} 17	(5 ⁺)		AB D	J $^\pi$: γ band.
1638.72 21	(3 ⁻ ,4 ⁺)		B	
1983.71 ^{&} 22	(6 ⁺)		AB D	J $^\pi$: γ band.
2065.16 [†] 19	(4 ⁻)		AB	
2090.33 22	(4 ⁻ ,5 ⁺)		B	J $^\pi$: γ band.
2184.00 [#] 19	(5 ⁻)		AB D	J $^\pi$: Band Head based on 5 ⁻ with γ to 6 ⁺ and 4 ⁺ .
2215.7 [†] 4	8 ⁺		AB D	J $^\pi$: γ to 6 ⁺ and and g.s. band with $\Delta J=2$.
2290.0 ^{&} 3	(7 ⁺)		AB D	
2316.1 3			B	
2349.67 22	(5 ⁻ ,6 ⁺)		B	
2398.5 4			B	
2446.7 3	(6 ⁺)		B	
2520.17 [†] 19	(6 ⁻)		AB	
2562.8 5	(6 ⁺)		B	
2598.42 [#] 23	(7 ⁻)		A D	J $^\pi$: Band based on 5 ⁻ with $\Delta J=2$.
2611.3 3	(6 ⁺)		B	
2623.27 18	(6 ⁻)		AB	
2654.7 ^{&} 10	(8 ⁺)		A D	J $^\pi$: γ band.
2687.7 3			AB	
2738.5 3			B	
2752.0 4	(6,7 ⁻)		B	
2789.36 24			AB	

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Adopted Levels, Gammas (continued)

¹¹⁴Pd Levels (continued)

E(level)	J ^π	XREF	Comments
2792.8 4		B	
2821.6 4		B	
2853.2 4		B	
2859.7 [†] 4	10 ⁺	A D	J ^π : γ to 8 ⁺ and and g.s. band with ΔJ=2.
2892.3 4		B	
2905.7& 5	(9 ⁺)	A D	J ^π : γ band.
2927.5 4		B	
2953.4 4	(6 ⁻)	B	
2997.4 3		B	
3047.6 [‡] 5	(8 ⁻)	A	
3055.4 5		B	
3064.40 23	(6,7) ⁻	B	
3078.3 3	(6,7)	B	
3099.2 4	(6,7 ⁺)	B	
3104.4 [#] 4	(9 ⁻)	A D	J ^π : Band based on 5 ⁻ with ΔJ=2.
3128.30 21	(6 ⁻)	AB	
3138.78 23	(6 ⁻)	AB	
3161.9 4		B	
3237.1@ 6	(9 ⁻)	A	
3337.8& 11	(10 ⁺)	A D	J ^π : γ band.
3423.9 4		B	
3443.2 [†] 5	12 ⁺	A D	J ^π : γ to 10 ⁺ and and g.s. band with ΔJ=2.
3503.9& 6	(11 ⁺)	A D	J ^π : γ band.
3737.8 [#] 5	(11 ⁻)	A D	J ^π : Band based on 5 ⁻ with ΔJ=2.
3859.6@ 8	(11 ⁻)	A	
4147.3 [†] 7	(14 ⁺)	A D	J ^π : γ to 12 ⁺ and and g.s. band with ΔJ=2.
4205.7& 8	(13 ⁺)	A	J ^π : γ band.
4472.6 [#] 6	(13 ⁻)	A D	J ^π : Band based on 5 ⁻ with ΔJ=2.
4599.2@ 9	(13 ⁻)	A	
5011.6 [†] 8	(16 ⁺)	A D	J ^π : γ to 14 ⁺ and and g.s. band with ΔJ=2.
5255.7 [#] 7	(15 ⁻)	D	J ^π : Band based on 5 ⁻ with ΔJ=2.

[†] Band(A): g.s. band.

[‡] Band(B): band based on (4⁻).

[#] Band(C): band based on (5⁻).

@ Band(D): band based on (9⁻).

& Band(E): γ band.

γ(¹¹⁴Pd)

E _i (level)	J _i ^π	E _γ [†]	I _γ [†]	E _f	J _f ^π	Mult.	α [‡]	Comments
332.61	2 ⁺	332.6 1	100	0	0 ⁺	E2	0.0211	B(E2)(W.u.)=21 7 Mult.: from ¹¹⁴ Rh decay.
694.62	2 ⁺	362.0 2	100 3	332.61	2 ⁺			
		694.7 3	66 3	0	0 ⁺			
852.37	4 ⁺	519.8 2	100	332.61	2 ⁺			
872.0	(0 ⁺)	539.4 3	100	332.61	2 ⁺			
1011.65	(3 ⁺)	159.4 3	0.10 5	852.37	4 ⁺			
		317.0 2	84.5 25	694.62	2 ⁺			

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Adopted Levels, Gammas (continued) $\gamma(^{114}\text{Pd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π
1011.65	(3 ⁺)	679.0 2	100 3	332.61	2 ⁺
1115.56	(0 ⁺)	782.9 2	100	332.61	2 ⁺
1319.89	(4 ⁺)	467.4 2	33 8	852.37	4 ⁺
		625.3 2	100 12	694.62	2 ⁺
1391.92	2 ⁺	276.2 4	11 3	1115.56	(0 ⁺)
		539.6 2	28 6	852.37	4 ⁺
		697.3 3	100	694.62	2 ⁺
1500.51	(6 ⁺)	648.1 2	100	852.37	4 ⁺
1630.69	(5 ⁺)	310.7 2	3.0 20	1319.89	(4 ⁺)
		619.0 2	100 12	1011.65	(3 ⁺)
		778.4 3	5.0 10	852.37	4 ⁺
1638.72	(3 ⁻ ,4 ⁺)	627.1 3	94 19	1011.65	(3 ⁺)
		944.2 3	100 19	694.62	2 ⁺
1983.71	(6 ⁺)	483.0 4	12 3	1500.51	(6 ⁺)
		663.8 3	100	1319.89	(4 ⁺)
2065.16	(4 ⁻)	426.5 [#] 5	0.030 20	1638.72	(3 ⁻ ,4 ⁺)
		1053.5 2	100 8	1011.65	(3 ⁺)
		1213.1 4	12.7 10	852.37	4 ⁺
2090.33	(4 ⁻ ,5 ⁺)	451.7 3	71 21	1638.72	(3 ⁻ ,4 ⁺)
		459.8 [#] 4	29 14	1630.69	(5 ⁺)
		770.7 4	64 14	1319.89	(4 ⁺)
		1078.7 4	100 21	1011.65	(3 ⁺)
2184.00	(5 ⁻)	863.7 4	7 3	1319.89	(4 ⁺)
		1331.6 2	100	852.37	4 ⁺
2215.7	8 ⁺	715.3 4	100	1500.51	(6 ⁺)
2290.0	(7 ⁺)	659.3 2	100	1630.69	(5 ⁺)
2316.1		1463.8 3	100	852.37	4 ⁺
2349.67	(5 ⁻ ,6 ⁺)	711.0 4	50 14	1638.72	(3 ⁻ ,4 ⁺)
		718.9 [#] 4	21 14	1630.69	(5 ⁺)
		848.9 4	36 21	1500.51	(6 ⁺)
		1029.9 4	100 21	1319.89	(4 ⁺)
2398.5		898.0 4	100	1500.51	(6 ⁺)
2446.7	(6 ⁺)	1594.3 4	100	852.37	4 ⁺
2520.17	(6 ⁻)	336.0 3	33 11	2184.00	(5 ⁻)
		455.0 3	31 8	2065.16	(4 ⁻)
		889.4 2	100 12	1630.69	(5 ⁺)
		1019.7 3	28 6	1500.51	(6 ⁺)
		1508 3	35 17	1011.65	(3 ⁺)
2562.8	(6 ⁺)	1242.9 5	100	1319.89	(4 ⁺)
2598.42	(7 ⁻)	414.2 3	21 3	2184.00	(5 ⁻)
		1097.9 2	100 15	1500.51	(6 ⁺)
2611.3	(6 ⁺)	1758.9 3	100	852.37	4 ⁺
2623.27	(6 ⁻)	103.2 2	6.3 12	2520.17	(6 ⁻)
		273.4 3	4.4 9	2349.67	(5 ⁻ ,6 ⁺)
		439.5 3	3 3	2184.00	(5 ⁻)
		558.2 2	29 6	2065.16	(4 ⁻)
		639.5 3	3.0 10	1983.71	(6 ⁺)
		992.6 2	100 6	1630.69	(5 ⁺)
		1122.6 2	27 4	1500.51	(6 ⁺)
2654.7	(8 ⁺)	671 1	100	1983.71	(6 ⁺)
2687.7		503.7 4	40 5	2184.00	(5 ⁻)
		1056.7 5	100 10	1630.69	(5 ⁺)
		1187.3 3	100 10	1500.51	(6 ⁺)
2738.5		1238.0 3	100	1500.51	(6 ⁺)
2752.0	(6,7 ⁻)	568.0 3	100	2184.00	(5 ⁻)

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Adopted Levels, Gammas (continued) $\gamma(^{114}\text{Pd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\dagger	E_f	J_f^π
2789.36		166.4 3	15 5	2623.27	(6 ⁻)
		605.0 3	13 4	2184.00	(5 ⁻)
		1288.9 3	100	1500.51	(6 ⁺)
2792.8		1292.3 3	100	1500.51	(6 ⁺)
2821.6		1321.1 3	100	1500.51	(6 ⁺)
2853.2		1352.7 3	100	1500.51	(6 ⁺)
2859.7	10 ⁺	644.1 3	100	2215.7	8 ⁺
2892.3		372.1 3	100	2520.17	(6 ⁻)
2905.7	(9 ⁺)	615.7 4	100	2290.0	(7 ⁺)
2927.5		407.3 3	100	2520.17	(6 ⁻)
2953.4	(6 ⁻)	888.2 4	100	2065.16	(4 ⁻)
2997.4		550.5 4	63 25	2446.7	(6 ⁺)
		907.7 4	1.0×10 ² 5	2090.33	(4 ⁻ ,5 ⁺)
		1012.9 [#] 5	38 13	1983.71	(6 ⁺)
3047.6	(8 ⁻)	527.4 [#] 5	100	2520.17	(6 ⁻)
3055.4		705.7 4	100	2349.67	(5 ⁻ ,6 ⁺)
3064.40	(6,7) ⁻	441.0 3	76 16	2623.27	(6 ⁻)
		544.0 3	100 20	2520.17	(6 ⁻)
		618.2 5	20 8	2446.7	(6 ⁺)
		1080.9 3	24 12	1983.71	(6 ⁺)
		1563.8 4	24 12	1500.51	(6 ⁺)
3078.3	(6,7)	557.8 4	23 9	2520.17	(6 ⁻)
		1577.9 3	100 23	1500.51	(6 ⁺)
3099.2	(6,7 ⁺)	1468.6 4	1.0×10 ² 3	1630.69	(5 ⁺)
		1598.6 5	50 21	1500.51	(6 ⁺)
3104.4	(9 ⁻)	505.8 4	1.0×10 ² 3	2598.42	(7 ⁻)
		888.7 4	58 10	2215.7	8 ⁺
3128.30	(6 ⁻)	504.9 4	15 5	2623.27	(6 ⁻)
		608.0 3	28 3	2520.17	(6 ⁻)
		681.2 [#] 5	10.0 20	2446.7	(6 ⁺)
		812.3 3	18 3	2316.1	
		944.5 3	60 15	2184.00	(5 ⁻)
		1144.6 5	15 3	1983.71	(6 ⁺)
		1497.6 5		1630.69	(5 ⁺)
		1627.8 3	1.0×10 ² 3	1500.51	(6 ⁺)
3138.78	(6 ⁻)	400.2 3	26 13	2738.5	
		540.1 [#] 4	9 4	2598.42	(7 ⁻)
		789.2 3	48 13	2349.67	(5 ⁻ ,6 ⁺)
		1048.4 4	70 22	2090.33	(4 ⁻ ,5 ⁺)
		1508.0 4	100 22	1630.69	(5 ⁺)
		1638.5 4	43 13	1500.51	(6 ⁺)
3161.9		1661.4 4	100	1500.51	(6 ⁺)
3237.1	(9 ⁻)	1021.4 5	100	2215.7	8 ⁺
3337.8	(10 ⁺)	683.1 4	100	2654.7	(8 ⁺)
3423.9		1923.4 4	100	1500.51	(6 ⁺)
3443.2	12 ⁺	583.5 3	100	2859.7	10 ⁺
3503.9	(11 ⁺)	598.2 4	100	2905.7	(9 ⁺)
3737.8	(11 ⁻)	633.2 4	100 25	3104.4	(9 ⁻)
		878.3 4	19 6	2859.7	10 ⁺
3859.6	(11 ⁻)	622.5 5	100	3237.1	(9 ⁻)
4147.3	(14 ⁺)	704.1 4	100	3443.2	12 ⁺
4205.7	(13 ⁺)	701.8 5	100	3503.9	(11 ⁺)
4472.6	(13 ⁻)	734.8 4	100	3737.8	(11 ⁻)
4599.2	(13 ⁻)	739.6 5	100	3859.6	(11 ⁻)

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Adopted Levels, Gammas (continued) $\gamma(^{114}\text{Pd})$ (continued)

<u>$E_i(\text{level})$</u>	<u>J_i^π</u>	<u>E_γ^\dagger</u>	<u>I_γ^\dagger</u>	<u>E_f</u>	<u>J_f^π</u>
5011.6	(16 ⁺)	864.3 [#] 4	100	4147.3	(14 ⁺)
5255.7	(15 ⁻)	783.1 4	100	4472.6	(13 ⁻)

[†] From ^{114}Rh β^- decay.

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

[#] Placement of transition in the level scheme is uncertain.

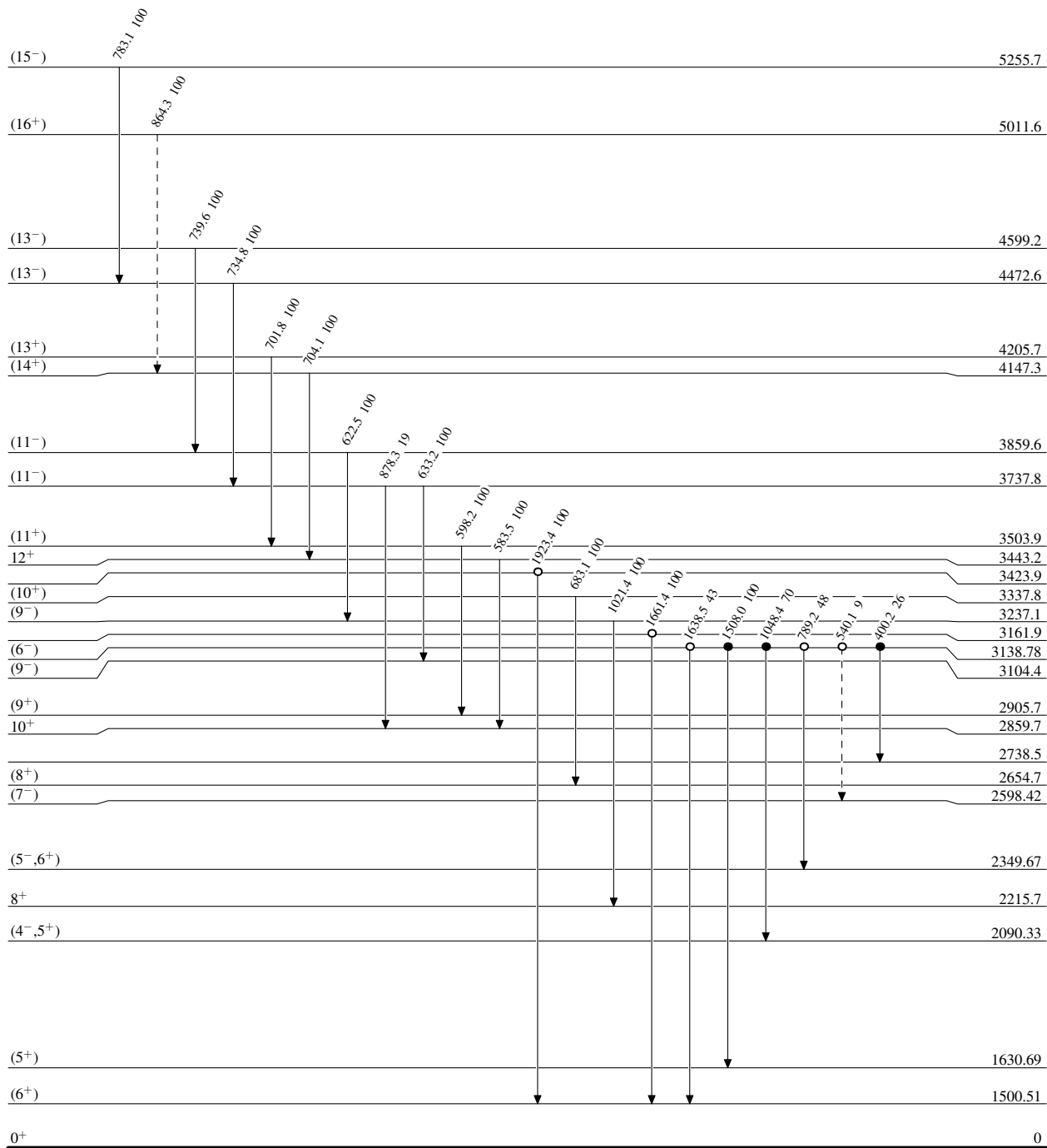
Legend

Adopted Levels, Gammas

Level Scheme

Intensities: Relative photon branching from each level

- ▶ γ Decay (Uncertain)
- Coincidence
- Coincidence (Uncertain)



$^{114}_{46}\text{Pd}_{68}$

2.42 min 6

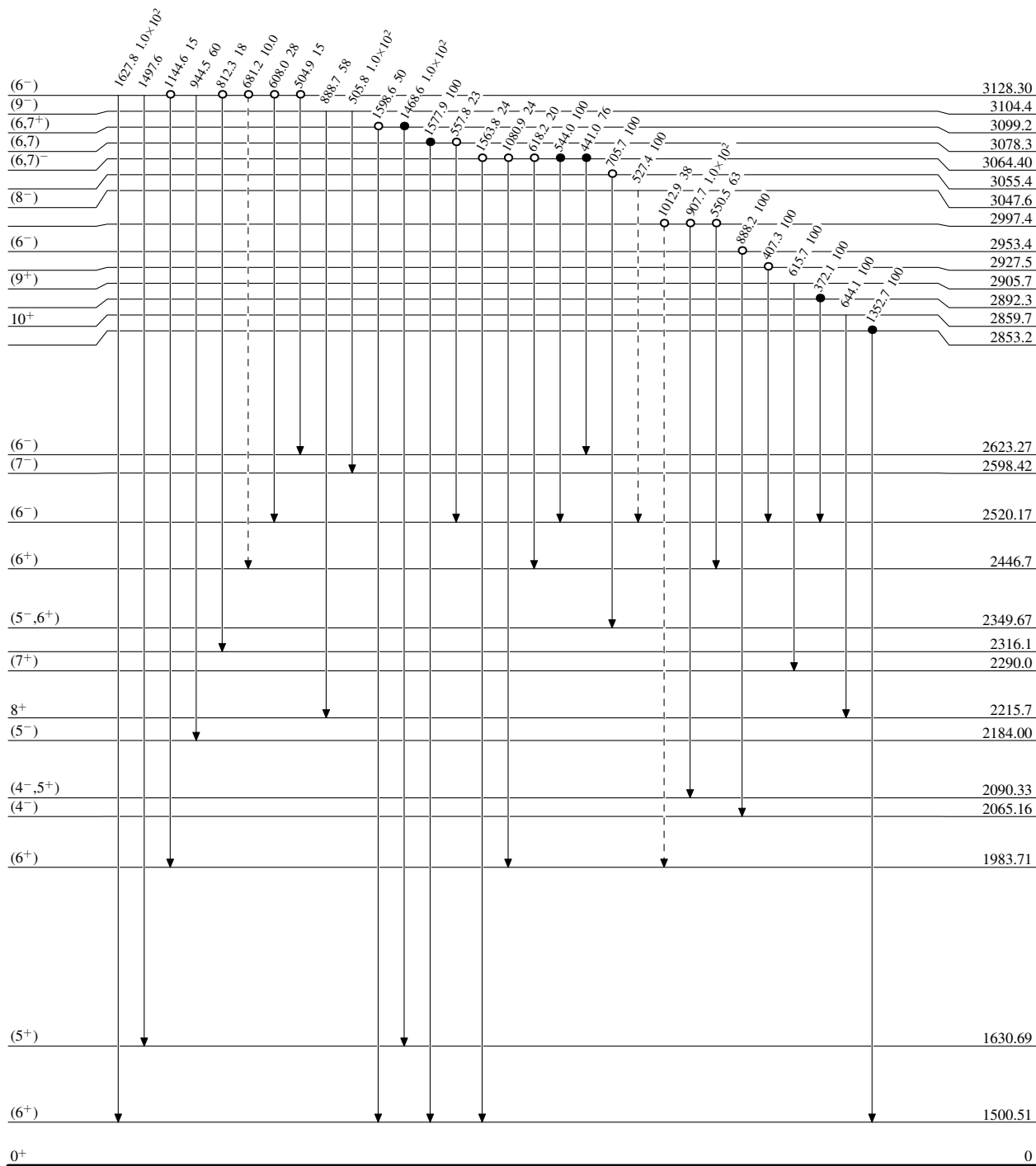
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Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

- ▶ γ Decay (Uncertain)
- Coincidence
- Coincidence (Uncertain)



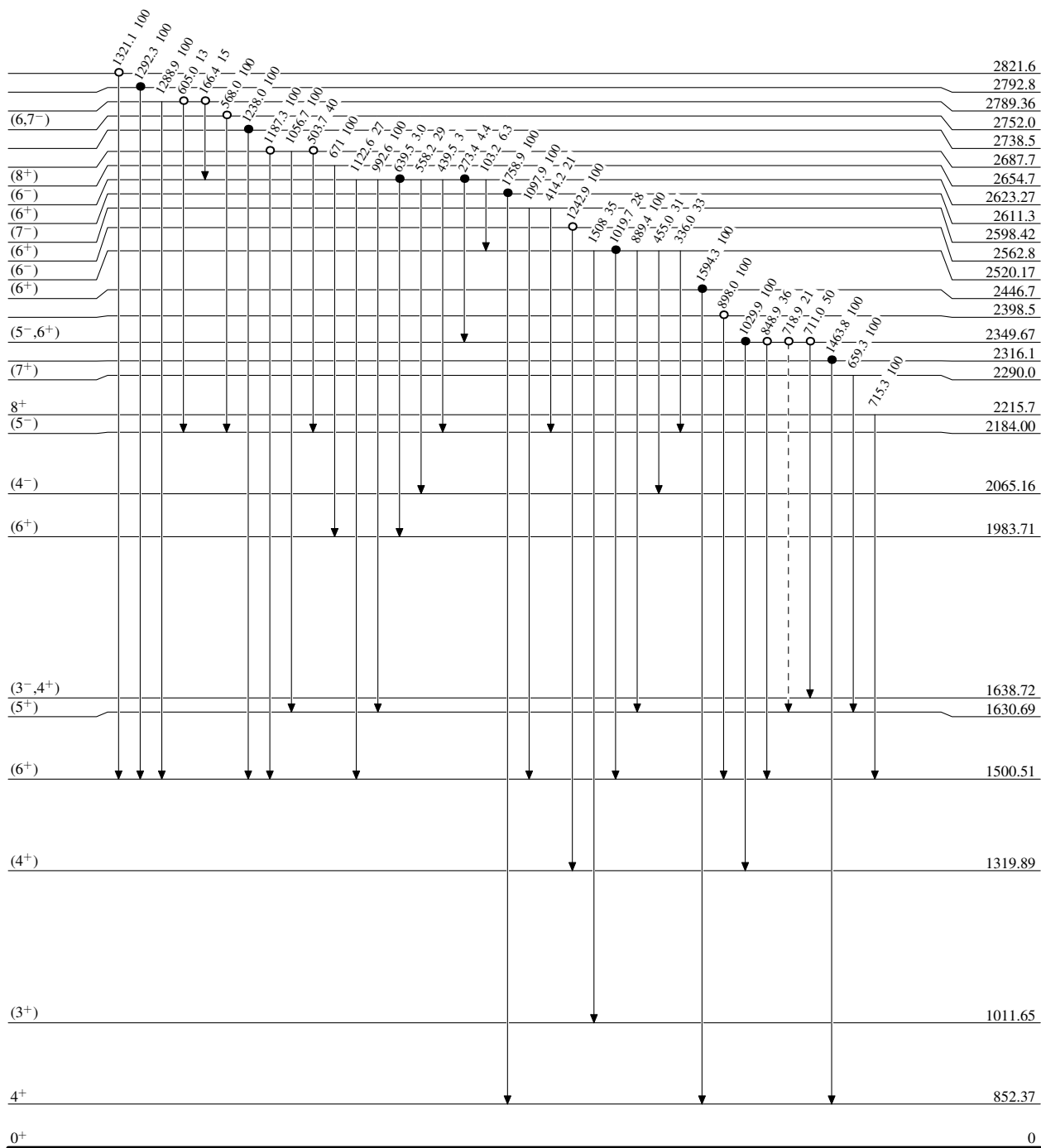
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Adopted Levels, Gammas

Level Scheme (continued)

Intensities: Relative photon branching from each level

- ▶ γ Decay (Uncertain)
- Coincidence
- Coincidence (Uncertain)



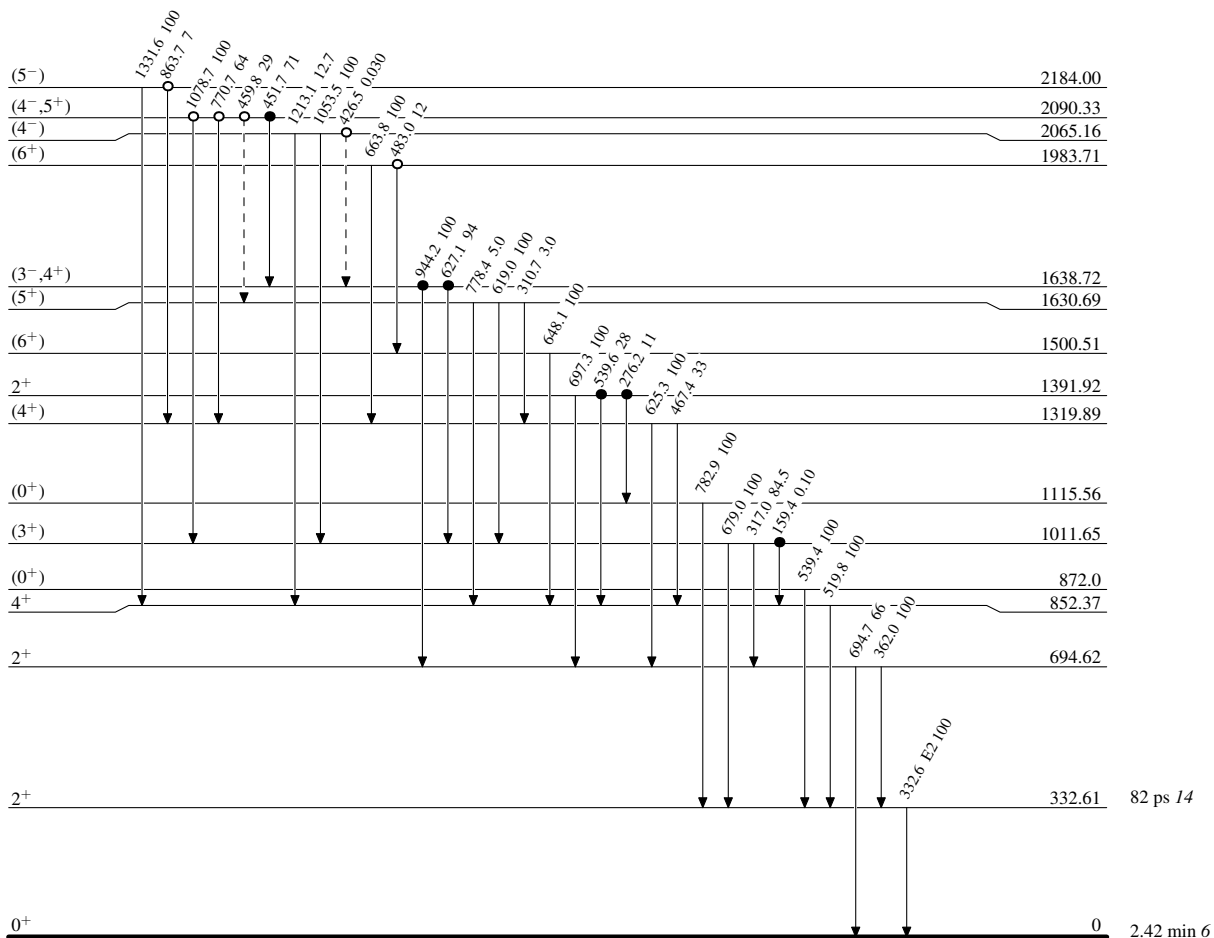
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Adopted Levels, Gammas

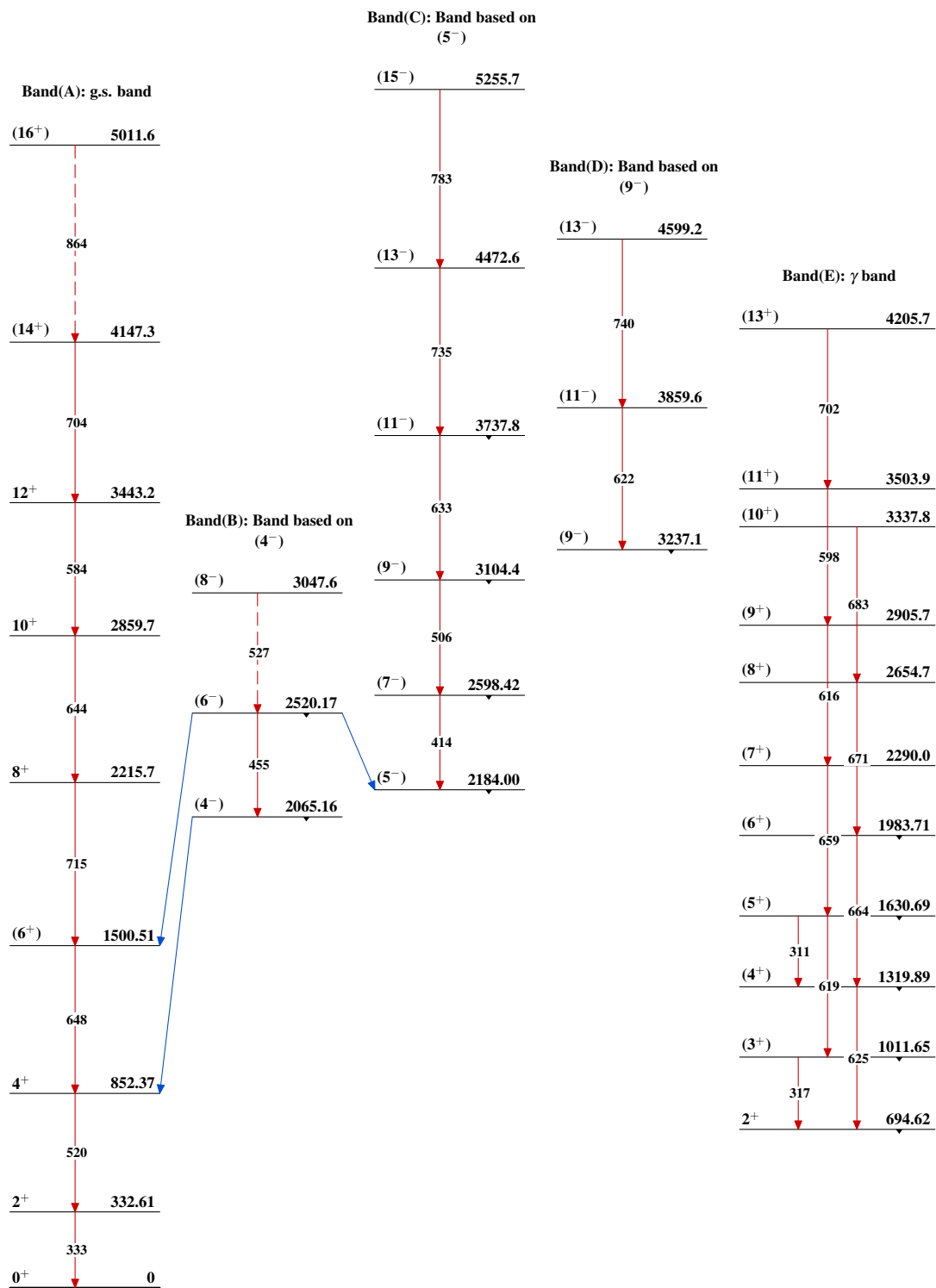
Level Scheme (continued)

Intensities: Relative photon branching from each level

- ▶ γ Decay (Uncertain)
- Coincidence
- Coincidence (Uncertain)



$^{114}_{46}\text{Pd}_{68}$

Adopted Levels, Gammas $^{114}_{46}\text{Pd}_{68}$