

Adopted Levels, Gammas

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	K. Kitao	NDS 75,99 (1995)	1-Feb-1993

$Q(\beta^-)=527$ 22; $S(n)=8355$ 20; $S(p)=11809$ 25; $Q(\alpha)=-5635$ 22 [2012Wa38](#)
 Note: Current evaluation has used the following Q record 520 228355 2011750 50-5640 30 [1993Au05](#).

 ^{118}Cd LevelsCross Reference (XREF) Flags

A	^{118}Ag β^- decay (3.76 s)
B	^{118}Ag β^- decay (2.0 s)
C	$^{238}\text{U}(^7\text{Li},\text{F})$
D	$^{122}\text{Sn}(d,^6\text{Li})$

E(level) [‡]	J ^π	T _{1/2}	XREF	Comments
0.0 [†]	0 ⁺ [#]	50.3 min 2	ABCD	$\% \beta^- = 100$ T _{1/2} : from 1968Sc24 . Others: 50 min 2 (1958Gl58), 49.0 min 15 (1961Gl02).
487.77 [†] 8	2 ⁺ [#]	17.9 ps 15	ABCD	T _{1/2} : from $\beta\gamma\gamma(t)$ (1989Ma33).
1164.94 [†] & 9	4 ⁺ [#]	<1.9 ps	ABCD	T _{1/2} : from $\beta\gamma\gamma(t)$ (1989Ma33).
1269	(7 ⁻)		D	J ^π : L=(7) in (d, ⁶ Li).
1269.55& 8	2 ⁺ @		ABC	
1285.61& 12	0 ⁺ @	9.7 ps 14	A D	T _{1/2} : from $\beta\gamma\gamma(t)$ (1989Ma33).
1460 30	(0 ⁺)		D	J ^π : L=(0) in (d, ⁶ Li).
1615.07 10	0 ⁺ @	<7.1 ps	A D	XREF: D(1600). T _{1/2} : from $\beta\gamma\gamma(t)$ (1989Ma33).
1915.77 ^a 10	2 ⁺ @		AB	
1929.14 ^a 9	(3,4 ⁺)		ABC	J ^π : 659 γ to 2 ⁺ , 764 γ to 4 ⁺ , no γ to 0 ⁺ .
1935	3 ⁻		D	J ^π : L=3 in (d, ⁶ Li).
1935.94 [†] ^a 13	(6 ⁺) [#]		BC	J ^π : 4 ⁺ ,5 ⁺ ,6 ⁺ from $\gamma\gamma(\theta)$ in ^{118}Ag β^- decay; systematics of the yrast states in Cd isotopes suggests 6 ⁺ .
2073.69 ^a 13	0 ⁺ @		A	
2091.61 ^a 9	3 ⁺ @		AB	
2110 30			D	
2182.14 25			B	
2223.33 10	3,4,5		ABCD	J ^π : strong γ to 4 ⁺ .
2322.31 10	3,4 ⁺		AB	J ^π : strong γ to 4 ⁺ , 406 γ to 2 ⁺ .
2395 30			D	
2471.84 11			AB	
2575 30			D	
2590.9 [†] 10	(8 ⁺) [#]		C	
2621.00 11			B	
2640.55 25			BC	
2756.00 20			B	
2788.72 19	(1)		A	J ^π : strong γ to 0 ⁺ .
3017.9 [†] 15	(10 ⁺) [#]		C	
3031.85 18			B	
3181.73 23	2,3,4		AB	J ^π : γ 's to 2 ⁺ and 4 ⁺ .
3224.32 17	(1)		A	J ^π : strong γ to 0 ⁺ .
3265.77 19	2,3,4		AB	J ^π : γ 's to 2 ⁺ and 4 ⁺ .
3329.0 4			B	
3381.8 3			AB	

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Adopted Levels, Gammas (continued) ^{118}Cd Levels (continued)

<u>E(level)[‡]</u>	<u>J^π</u>	<u>XREF</u>
3579.0 [†] 18	(12 ⁺) [#]	C
4367.0 [†] 20	(14 ⁺) [#]	C

[†] Band(A): yrast band.

[‡] From a least-squares fit to adopted E(γ 's), for γ -connecting levels. Others are from (d,⁶Li).

[#] γ cascades to 0⁺ g.s., and syst in yrast band in ^{114}Cd - ^{122}Cd .

@ From $\gamma\gamma(\theta)$ in ^{118}Ag β^- decay (1984Ap04, 1987Ap01).

& Member of two phonon triplet.

^a Member of three phonon quintuplet (1987Ap01).

<u>$\gamma(^{118}\text{Cd})$</u>								
<u>E_i(level)</u>	<u>J_i^π</u>	<u>E_γ[†]</u>	<u>I_γ[#]</u>	<u>E_f</u>	<u>J_f^π</u>	<u>Mult.</u>	<u>δ</u>	<u>Comments</u>
487.77	2 ⁺	487.77 10	100	0.0	0 ⁺			B(E2)(W.u.)=33 3
1164.94	4 ⁺	677.13 10	100	487.77	2 ⁺			B(E2)(W.u.)>61
1269.55	2 ⁺	781.73 10	100 10	487.77	2 ⁺			
		1269.54 10	69 7	0.0	0 ⁺			
1285.61	0 ⁺	797.83 10	100	487.77	2 ⁺			B(E2)(W.u.)=5.3 8
1615.07	0 ⁺	345.51 10	<5.1 @	1269.55	2 ⁺			B(E2)(W.u.)>13
		1127.32 10	100 @ 10	487.77	2 ⁺			B(E2)(W.u.)>1.2
1915.77	2 ⁺	646.20 10	39 4	1269.55	2 ⁺			
1929.14	(3,4 ⁺)	1428.02 10	100 10	487.77	2 ⁺	E2+M1	+1.9	Mult.,δ: from 1987Ap01.
		659.63 10	100 10	1269.55	2 ⁺			
		764.23 10	59 6	1164.94	4 ⁺			
		1441.34 10	48 5	487.77	2 ⁺			
1935.94	(6 ⁺)	771.00 10	100 10	1164.94	4 ⁺			
2073.69	0 ⁺	1585.91 10	100 @	487.77	2 ⁺			
2091.61	3 ⁺	822.02 10		1269.55	2 ⁺			
		926.53 10		1164.94	4 ⁺			
		1603.96 10		487.77	2 ⁺	E2+M1	+1.15	Mult.,δ: from 1987Ap01.
2182.14		246.2 3	100	1935.94	(6 ⁺)			
2223.33	3,4,5	294.20 10	10.8 11	1929.14	(3,4 ⁺)			
		1058.39 10	100 10	1164.94	4 ⁺			
		1735.52 10		487.77	2 ⁺			
2322.31	3,4 ⁺	230.66 10		2091.61	3 ⁺			
		406.54 10	15.6 16	1915.77	2 ⁺			
		1157.40 10	100 10	1164.94	4 ⁺			
2471.84		248.50 10		2223.33	3,4,5			
		542.70 10		1929.14	(3,4 ⁺)			
2590.9	(8 ⁺)	655 [‡]		1935.94	(6 ⁺)			
2621.00		397.67 10	100 10	2223.33	3,4,5			
		691.87 10		1929.14	(3,4 ⁺)			
2640.55		704.6 3	100	1935.94	(6 ⁺)			
2756.00		433.6 3	29 3	2322.31	3,4 ⁺			
		532.7 3	100 10	2223.33	3,4,5			
2788.72	(1)	2300.9 3	5.4 6	487.77	2 ⁺			
		2788.7 3	100 10	0.0	0 ⁺			
3017.9	(10 ⁺)	427 [‡]		2590.9	(8 ⁺)			
3031.85		275.8 3	41 4	2756.00				
		391.3 3	41 4	2640.55				
		410.9 3	34 4	2621.00				

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Adopted Levels, Gammas (continued) $\gamma(^{118}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\#$	E_f	J_f^π	$E_i(\text{level})$	J_i^π	$E_\gamma^\dagger$	$I_\gamma^\#$	E_f	J_f^π
3031.85		808.5 3	100 10	2223.33	3,4,5	3265.77	2,3,4	1336.8 3	12.8 13	1929.14	(3,4 ⁺)
		849.7 3	45 5	2182.14				2100.8 3	99 10	1164.94	4 ⁺
3181.73	2,3,4	2016.9 3	54 6	1164.94	4 ⁺			2777.8 3	100 10	487.77	2 ⁺
		2693.8 3	100 10	487.77	2 ⁺	3329.0		2164.0 3	100	1164.94	4 ⁺
3224.32	(1)	435.6 3	4.6 5	2788.72	(1)	3381.8		2894.0 3	100	487.77	2 ⁺
		1938.6 3	35 4	1285.61	0 ⁺	3579.0	(12 ⁺)	561 [‡]		3017.9	(10 ⁺)
		2736.7 3	18.8 19	487.77	2 ⁺	4367.0	(14 ⁺)	788 [‡]		3579.0	(12 ⁺)
		3224.2 3	100 10	0.0	0 ⁺						

[†] From ^{118}Ag β^- decay (3.76-s, 2.0-s), unless otherwise noted.

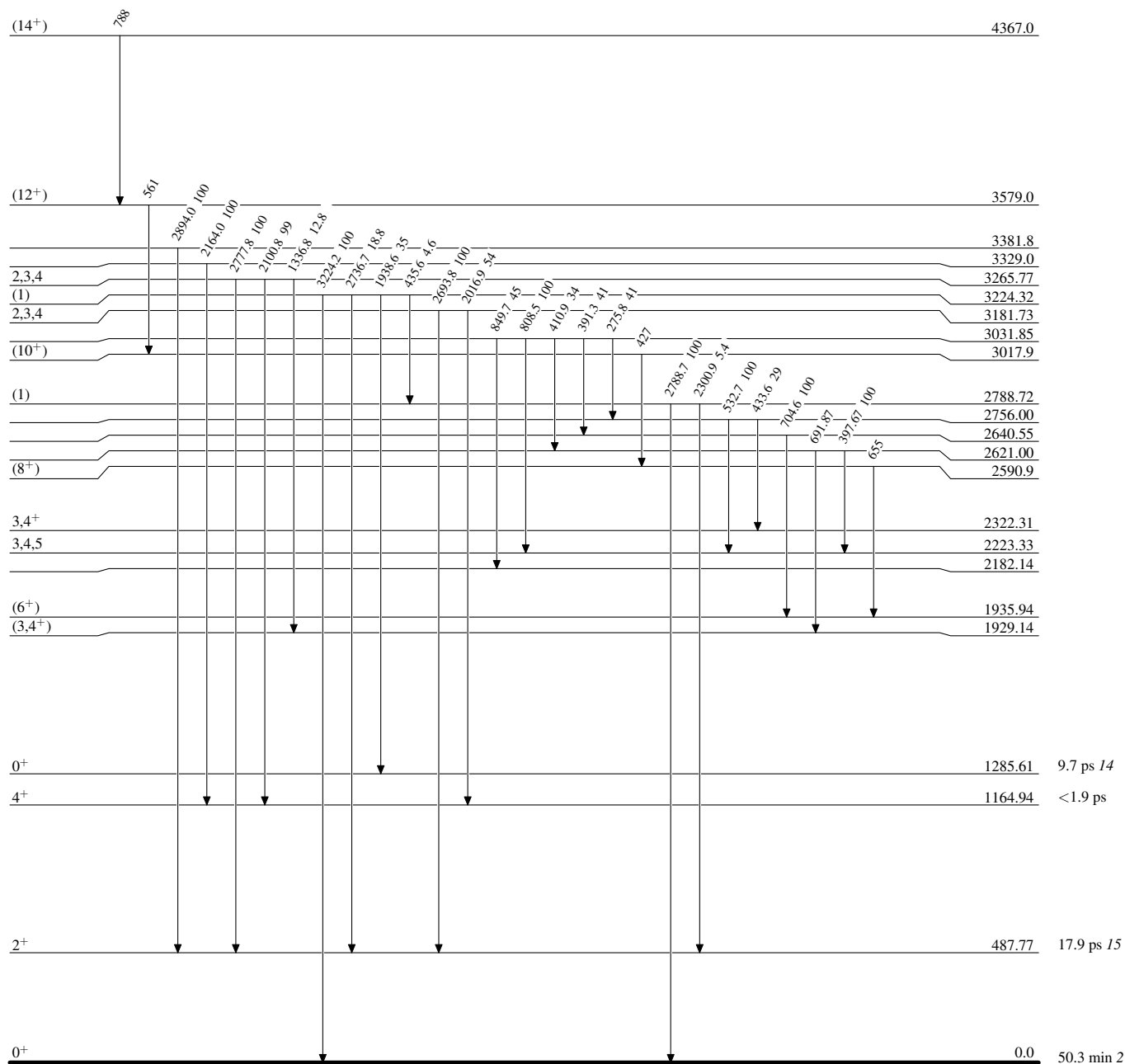
[‡] From $^{238}\text{U}(^7\text{Li,F})$.

[#] From the combined β^- decay of 3.76-s and 2.0-s given by [1979HiZR](#), unless otherwise noted. Uncertainty of 10% assumed by evaluator.

[@] From [1984Ap04](#). Uncertainty of 10% assumed by evaluator.

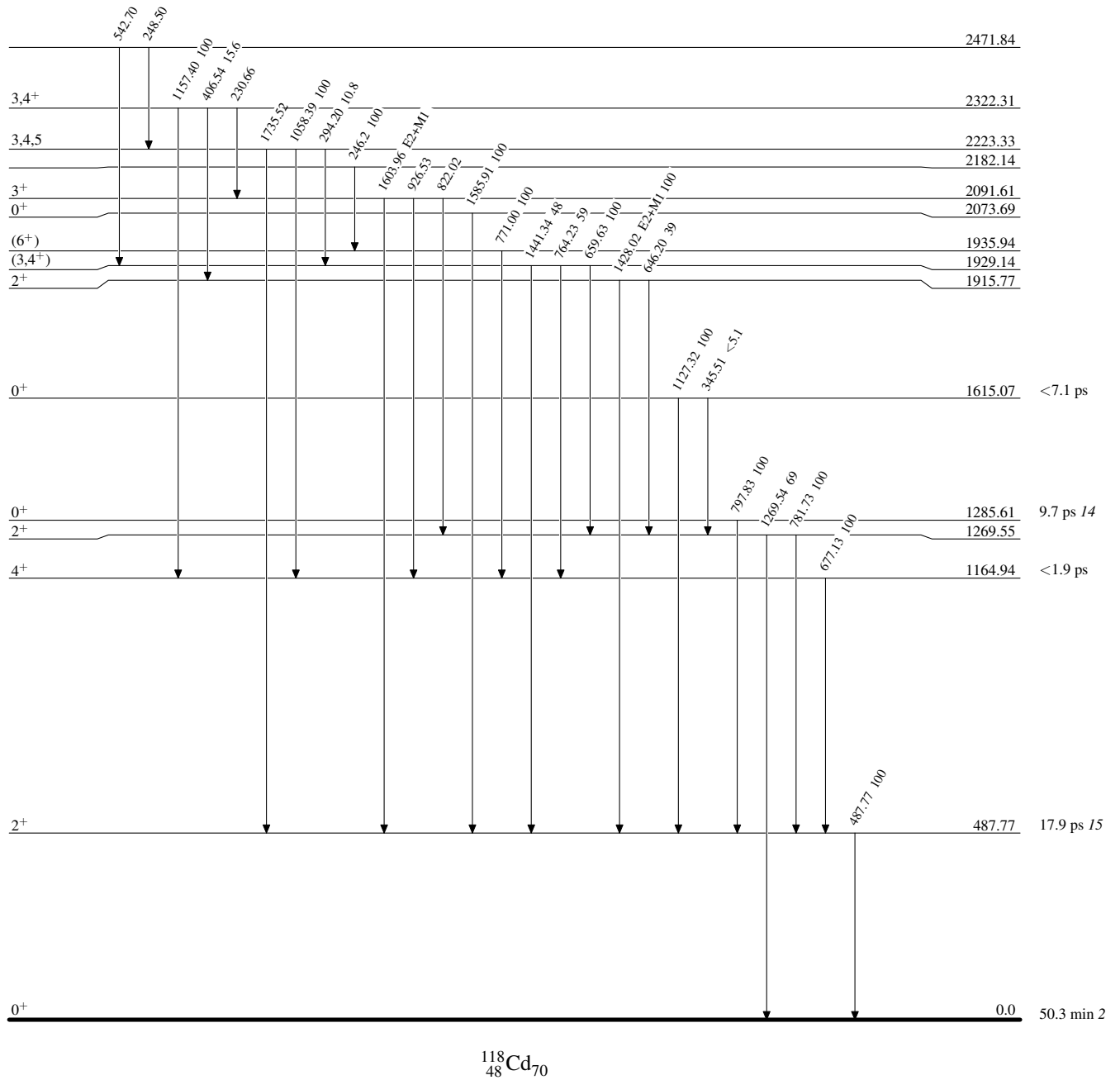
Adopted Levels, Gammas**Level Scheme**

Intensities: Relative photon branching from each level

 $^{118}_{48}\text{Cd}_{70}$

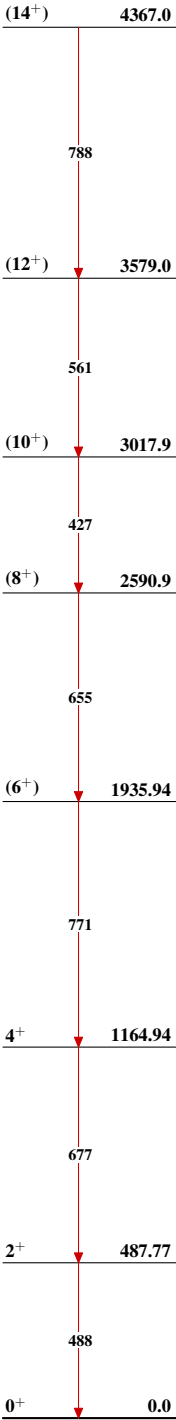
Adopted Levels, GammasLevel Scheme (continued)

Intensities: Relative photon branching from each level



Adopted Levels, Gammas

Band(A): Yrast band



$^{118}_{48}\text{Cd}_{70}$