

$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73

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

2003Ba57 and 2003Ba19 are the same group, also 2006BaZX.

2003Ba19 was a preliminary work, The data here are from 2007Ba73.

Neutron beam in the energy range of 2.1 to 3.8 MeV was produced in the reaction $^3\text{H}(p,n)$ at the University of Kentucky. Enriched target. Measured $E\gamma$, $I\gamma$, $\gamma(\theta)$ using Compton-suppressed HPGe detector. Measured lifetimes using Doppler-shift attenuation method (DSAM). Comparisons with Interacting Boson Model (IBM) calculations of levels and transition probabilities.

E=fast-reactor neutrons (1976De42), E=2.67 MeV (1977Ne01).

Measured: γ , $\sigma(E(n),E\gamma)$ (1976De42), $\sigma(\gamma,\theta)$; semi (1976De42,1977Ne01,1987Ar24).

Others: E=1.2-3 MeV (1974Gi02), E=2.67 MeV (1980Ne02).

The level scheme is as given by 2007Ba73.

 ^{114}Cd Levels

E(level) [†]	J ^π [‡]	T _{1/2} [#]	Comments
0.0	0 ⁺		
558.39 3	2 ⁺	10.2@ ps	
1134.42 ^b 5	0 ⁺	9.9@ ps	
1209.62& 3	2 ⁺	3.1@ ps	
1283.61& 4	4 ⁺	1.4@ ps	
1305.60& 5	0 ⁺	4.7@ ns	
1364.31 ^b 3	2 ⁺	5.2 ps	
1732.16 ^b 4	4 ⁺	4.8@ ps	
1841.75 ^b 5	2 ⁺	>0.83 ps	
1859.58 ^a 7	0 ⁺	>0.73 ps	
1864.10 ^a 4	3 ⁺	>0.87 ps	
1931.93 ^a 4	4 ⁺	>0.31 ps	
1958.03 ^c 4	3 ⁻	0.60 ps +15-10	
1990.21 11	6 ⁺		
2047.94 ^a 4	2 ⁺	0.57 ps +25-14	
2152.08 ^b 4	4 ⁺	>0.35 ps	
2204.34 ^b 4	3 ⁺	>0.55 ps	
2218.78 5	2 ⁺	89 fs +8-7	E(level): Mixed-symmetry state.
2298.63 ^c 8	5 ⁻	>1.04 ps	
2384.71 ^c 6	3 ⁻	0.55 ps +16-10	
2391.23 8	4 ⁺	187 fs +24-21	Hexadecapole configuration.
2400.2 10	6 ⁺		
2412.53 13	6 ⁺		
2437.58 7	0 ⁺	>0.90 ps	
2456.39 ^c 8	1 ⁻	39 fs 4	
2460.59 ^c 6	4 ⁻	>0.68 ps	
2503.24 9	(4)	152 fs +35-28	
2525.10 9	(3)		
2525.19 5	2 ⁺	>0.35 ps	
2535.73 8	5 ⁻	0.18 ps +28-8	
2553.91 7	0 ⁺	0.32 ps +12-7	
2580.35 ^c 6	2 ⁻	0.42 ps +9-6	
2636.35 7	0 ⁺	0.25 ps +6-4	
2650.00 7	2 ⁺	0.41 ps +13-8	
2660.78 9	3 ⁺ ,2 ⁺	22.2 fs 14	
2668.2 10	8 ⁺		

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$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73 (continued) ^{114}Cd Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2} [#]	Comments
2697.73 16			
2700.84 6	3 ⁺	0.31 ps +11-7	
2747.21 10	(5)		
2749.47 6	2 ⁺	0.69 ps +10-7	
2756.83 7	4	0.51 ps +73-19	
2767.53 7	1 ⁻	29.8 fs 28	
2784.27 7	5 ⁻		
2788.84 7	2 ⁺	0.25 ps +5-4	
2799.96 6	1 ⁺	19.4 fs 21	E(level): Mixed-symmetry configuration.
2806.55 7	3 ⁺	125 fs +18-15	
2811.92 7	2 ⁺	0.36 ps +23-10	
2811.93 8	4 ⁺		
2820.08 7	4 ⁺		
2827.88 10		0.38 ps +44-14	
2871.63 7	2,3	125 fs +17-14	
2874.26 6	2,4	>0.62 ps	
2880.56 10	4,3	111 fs +21-17	
2910.37 16	4		
2918.45 10	3	69 fs +17-14	
2932.97 10	4 ⁺	125 fs +21-17	
2935.76 6	2 ⁺	>0.35 ps	
2941.27 7	2,3 ⁺	0.24 ps +12-6	
2953.00 10	3 ⁺	62 fs 7	
2955.97 11	5		
2956.33 10	2	166 fs +28-21	
2999.37 7	1 ⁽⁻⁾	25.0 fs 28	
3001.63 12	4 ⁺		
3002.38 8	2 ⁺	145 fs +49-28	
3025.04 11	2,3	0.33 ps +19-9	
3051.54 11	(2)		
3061.48 8	2 ⁺	121 fs +24-17	
3077.88 9	2 ⁺	139 fs +66-35	
3108.22 10	1 ⁽⁻⁾	22 fs 6	
3111.74 10	(2)		
3115.56 7	3,2	146 fs +21-17	
3140.34 9	3,2	229 fs +42-35	
3141.2 15	6		
3156.89 11	2		
3167.40 8			
3168.72 13	2	90 fs +35-21	
3176.14 7	2,3	0.22 ps +10-6	
3192.19 14	2,3	0.17 ps +12-6	
3205.86 9	2 ⁺	173 fs +49-35	
3206.40 9	3		
3213.02 21	1	42 fs +5-4	
3218.45 15	1 ⁽⁻⁾	33.3 fs 35	
3221.40 17	1		
3222.76 15	0	0.14 ps +9-4	
3232.41 12	1,2,3	121 fs +24-17	
3249.18 11	1	62 fs +42-21	
3257.46 10	1,2	132 fs +62-35	
3261.96 14	1,2,3		
3265.36 14	1,2		
3285.09 12	2,3 ⁺	121 fs +28-21	
3296.57 11			
3298.52 13	2,3	42 fs +10-7	

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¹¹⁴Cd(n,n'γ) 2007Ba73 (continued)

¹¹⁴Cd Levels (continued)

E(level) [†]	J ^π [‡]	T _{1/2} [#]	E(level) [†]
3322.29 8	1	0.18 ps +17-7	3478.54 19
3334.34 9	2,3,4	114 fs +38-28	3488.79 22
3350.68 19	2,3		3500.23 20
3366.79 16	3		3503.80 13
3369.70 10			3543.74 23
3381.95 13	1,2,3		3552.14 25
3409.62 16	1,2		3610.7 3
3462.24 19			

[†] From least-squares fit to Eγ's by leaving out the following doublets: 420.21, 477.57, 495.40, 707.30, 742.40 and 742.44, 1841.91, 2811.33. The procedure gives a poor fit with normalized χ²=6.4 as compared to critical χ² of 1.3 resulting in 27 Eγ's deviating by 3 or more standard deviations; 5 Eγ's by 5 or more σ's, 8 Eγ's by 4 σ's and 14 Eγ's by 3 σ's. It is possible that some of the Eγ's are doublets with poor energy resolution.

[‡] From Adopted Levels, Gammas.

[#] From DSAM (2007Ba73), unless otherwise stated.

@ From 'Adopted Levels'.

& Two phonon sequence.

^a Three phonon sequence.

^b Intruder sequence.

^c Quadrupole-octupole sequence.

γ(¹¹⁴Cd)

E _i (level)	J _i ^π	E _γ	I _γ	E _f	J _f ^π	Mult.	δ	Comments
558.39	2 ⁺	558.38 5		0.0	0 ⁺	E2		
1134.42	0 ⁺	576.00 5		558.39	2 ⁺	E2		
1209.62	2 ⁺	651.18 5	100.0 10	558.39	2 ⁺	M1+E2	-1.0 1	δ: 1.6 +13-6 (1980Ne02), -1.0 +2-5 or -2.5 (1976De42), or -1.3 +4-10.
		1209.64 5	31.4 4	0.0	0 ⁺	E2		
1283.61	4 ⁺	725.22 5		558.39	2 ⁺	E2		
1305.60	0 ⁺	747.20 5		558.39	2 ⁺	E2		
1364.31	2 ⁺	229.91 5	<8	1134.42	0 ⁺	E2		
		805.83 5	100.0 15	558.39	2 ⁺	M1+E2	+0.08 +5-3	δ: -5.7 +20-51 or 0.29 10 (1980Ne02) or +0.050 25.
		1364.28 5	90.9 11	0.0	0 ⁺	E2		
1732.16	4 ⁺	368.00 6	42.9 9	1364.31	2 ⁺	E2		
		448.61 5	29.4 5	1283.61	4 ⁺	M1+E2	-1.1 2	δ: -1.6 +4-10(1987Ar24).
		522.48 [†] 5	100 15	1209.62	2 ⁺	E2		
		1173.74 6	80.5 11	558.39	2 ⁺	E2		
1841.75	2 ⁺	477.57 ^{‡†} 6	22.2 3	1364.31	2 ⁺	M1+E2	-0.4 1	δ: -2.3 +13-47 (1987Ar24).
		536.24 6	17.1 3	1305.60	0 ⁺	E2		
		632.16 7	4.9 1	1209.62	2 ⁺	M1+E2	+3.6 +44-13	
		707.30 ^{‡†} 5	64.4 10	1134.42	0 ⁺	E2		
		1283.37 6	100.0 13	558.39	2 ⁺	M1+E2	+2.4 +3-2	
		1841.91 [†] 6	23.9 3	0.0	0 ⁺	E2		
1859.58	0 ⁺	495.40 ^{‡†} 6	6.8 2	1364.31	2 ⁺	E2		
		1301.18 6	100.0 13	558.39	2 ⁺	E2		
1864.10	3 ⁺	580.46 6	21.0 4	1283.61	4 ⁺	M1+E2		δ: =-1.6 2 or -0.4 1.
		654.43 6	100.0 15	1209.62	2 ⁺	M1+E2	-4.2 3	δ: -4.2 +6-8 (1987Ar24).

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$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73 (continued) $\gamma(^{114}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	Comments
1864.10	3 ⁺	1305.74 6	94.8 14	558.39	2 ⁺	M1+E2	-2.2 1	δ : -0.10 +2-5 (1976De42), -2.20 13 (1987Ar24).
1931.93	4 ⁺	567.59 [†] 6	42.1 8	1364.31	2 ⁺	E2		
		648.37 [†] 6	61.5 13	1283.61	4 ⁺	E2		
		722.30 6	100.0 13	1209.62	2 ⁺	E2		
		1373.51 8	13.1 6	558.39	2 ⁺	E2		
1958.03	3 ⁻	748.40 10	27.1 4	1209.62	2 ⁺	E1(+M2)	-0.01 +3-4	
		1399.71 10	100.0 4	558.39	2 ⁺	E1+M2	+0.07 2	δ : +0.04 +6-10(1976De42) Other: +0.048 14.
1990.21	6 ⁺	706.60 10		1283.61	4 ⁺	E2		
2047.94	2 ⁺	683.59 6	3.1 1	1364.31	2 ⁺	E2,M1+E2		δ : -0.5 +2-4 for mult=M1+E2.
		742.40 [†] 6	8.5 2	1305.60	0 ⁺	E2		
		838.27 [†] 7	4.6 3	1209.62	2 ⁺	M1(+E2)	0.0 +3-2	
		1489.46 6	100.0 12	558.39	2 ⁺	M1+E2	+0.32 +3-2	δ : 0.00 10 or +2.3 +10-5 (1976De42), -0.29 5.
2152.08	4 ⁺	288.00 5	18.7 9	1864.10	3 ⁺	M1+E2	+0.16 1	
		310.40 8	17.3 12	1841.75	2 ⁺	E2		
		420.21 ^{‡†} 6	45.3 11	1732.16	4 ⁺	M1+E2	-1.2 +3-10	δ : -0.55 13 or +3.2 +21-8.
		787.82 7	31.1 6	1364.31	2 ⁺	E2		
		868.39 6	59.8 9	1283.61	4 ⁺	M1+E2		δ : =+2.3 3 or -0.33 5.
		942.45 6	100.0 13	1209.62	2 ⁺	E2		
		1593.70 7	32.2 6	558.39	2 ⁺	E2		
2204.34	3 ⁺	472.7 5		1732.16	4 ⁺	M1+E2	+0.28 +29-20	
		840.09 6	45.0 16	1364.31	2 ⁺	M1+E2		δ : -0.35 +13-18 or =1.6 5.
		920.64 6	74.4 10	1283.61	4 ⁺	M1+E2	-2.1 2	δ : -15 +5-10 (1987Ar24).
		994.73 6	75.8 10	1209.62	2 ⁺	M1+E2		δ : =-0.53 +4-6 or -1.2 1, -0.8 +3-7 (1987Ar24),
		1645.99 6	100.0 12	558.39	2 ⁺	M1+E2	-0.42 +4-5	
2218.78	2 ⁺	854.6 3	0.9 1	1364.31	2 ⁺	M1+E2	+0.6 +11-5	
		1660.34 6	100.0 2	558.39	2 ⁺	M1+E2	+0.19 +4-5	δ : +0.17 6 or 1.5 2 (1987Ar24).
		2218.82 10	3.1 2	0.0	0 ⁺	E2		
2298.63	5 ⁻	340.80 10	4.0 5	1958.03	3 ⁻			2007Ba73 give $\delta(E2/M1)<+7.9$; but ΔJ^π requires E2.
		1015.2 [†] 10	100.0 5	1283.61	4 ⁺	E1(+M2)	-0.01 +1-2	
2384.71	3 ⁻	426.50 10	9.8 3	1958.03	3 ⁻	M1+E2		δ : =+0.1 1 or +1.2 3.
		1175.11 10	6.9 12	1209.62	2 ⁺	E1(+M2)	+0.01 10	
		1826.32 10	100.0 12	558.39	2 ⁺	E1(+M2)	+0.01 +1-2	
2391.23	4 ⁺	1107.62 7		1283.61	4 ⁺	M1(+E2)	-0.01 4	
2400.2	6 ⁺	668 [†] 1		1732.16	4 ⁺	E2		
2412.53	6 ⁺	113.9 1		2298.63	5 ⁻	E1		
2437.58	0 ⁺	1879.05 7		558.39	2 ⁺	E2		
2456.39	1 ⁻	2456.03 10		0.0	0 ⁺	E1		E_γ : level-energy difference=2456.36.
2460.59	4 ⁻	256.20 10	9.9 7	2204.34	3 ⁺	E1(+M2)	+0.07 12	
		502.67 10	18.6 7	1958.03	3 ⁻	M1+E2		δ : =+0.58 +15-11 or +2.5 +6-5.
		596.30 10	92 5	1864.10	3 ⁺	E1(+M2)	-0.02 +1-6	
		728.60 10	20.0 7	1732.16	4 ⁺	E1(+M2)	-0.09 +14-12	
		1176.91 10	100.0 19	1283.61	4 ⁺	E1(+M2)	-0.02 +7-6	
2503.24	(4)	1219.62 8		1283.61	4 ⁺			
2525.10	(3)	1966.70 8		558.39	2 ⁺			
2525.19	2 ⁺	567.33 [†] 10		1958.03	3 ⁻			
		665.5 3	0.084 5	1859.58	0 ⁺	E2		
		1160.94 8	46.6 9	1364.31	2 ⁺	M1+E2	-0.34 7	
		1315.55 8	100.0 13	1209.62	2 ⁺	M1+E2	+0.65 +18-14	
		2525.28 9	41 3	0.0	0 ⁺	E2		

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$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73 (continued) $\gamma(^{114}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	Comments
2535.73	5 ⁻	237.17 [†] 6 803.6 8	100 30 51 4	2298.63 1732.16	5 ⁻ 4 ⁺			
		1251.99 8	18 1	1283.61	4 ⁺	E1(+M2)	+0.08 +9-10	
2553.91	0 ⁺	1189.49 9	18.0 8	1364.31	2 ⁺	E1		
		1995.59 8	100.0 25	558.39	2 ⁺	E2		
2580.35	2 ⁻	532.30 10 622.30 10	6.3 4 5.3 4	2047.94 1958.03	2 ⁺ 3 ⁻	E1(+M2) M1+E2	+0.07 +27-18 +1.2 +13-6	
		1370.71 10	100.0 4	1209.62	2 ⁺	E1(+M2)	+0.01 3	
		2021.92 [†] 10	16.5 4	558.39	2 ⁺	E1(+M2)	+0.12 +7-6	
2636.35	0 ⁺	1426.61 10	12.1 5	1209.62	2 ⁺	E2		
		2078.02 8	100 3	558.39	2 ⁺	E2		
2650.00	2 ⁺	1285.53 8	38.1 6	1364.31	2 ⁺	M1+E2	+0.03 6	
		1344.59 [†] 9	12.1 5	1305.60	0 ⁺	E2		
		2649.93 23	100 9	0.0	0 ⁺	E2		
2660.78	3 ⁺ ,2 ⁺	2102.37 8	100.0	558.39	2 ⁺	M1+E2		δ : =+1.9 1 for J(2660.7)=2 or +0.41 +2-3 for J(2660.7)=3.
2668.2	8 ⁺	(678)		1990.21	6 ⁺			E_γ : rounded energy taken from 'adopted gammas' for ^{114}Cd .
2697.73		2139.32 15		558.39	2 ⁺			
2700.84	3 ⁺	495.40 ^{††} 6 742.44 [†] 6	26 3 80.1 15	2204.34 1958.03	3 ⁺ 3 ⁻	M1+E2 E1		
		1417.07 9	19.2 7	1283.61	4 ⁺	M1+E2		δ : =+2.6 +13-8 or +0.54 +21-13.
		1491.36 10	59 3	1209.62	2 ⁺	E2,M1+E2		δ : +0.17 +24-20 for mult=M1+E2.
		2142.46 8	100 4	558.39	2 ⁺	M1+E2		δ : =+2.9 +5-4 or +0.51 4.
2747.21	(5)	1463.59 9		1283.61	4 ⁺			
2749.47	2 ⁺	791.46 9 1540.08 13	18 1 5.4 3	1958.03 1209.62	3 ⁻ 2 ⁺	E1 M1+E2		
		2190.93 9	100 4	558.39	2 ⁺	M1+E2	-2 +1-7	
		2749.44 20	5.0 8	0.0	0 ⁺	E2		δ : =+1.8 2 or +0.11 5.
2756.83	4	798.76 10	38 3	1958.03	3 ⁻			
		1024.68 9	52.0 12	1732.16	4 ⁺			
		1473.22 9	100.0 17	1283.61	4 ⁺			
2767.53	1 ⁻	2209.17 9	55 3	558.39	2 ⁺	E1		
		2767.44 9	100 11	0.0	0 ⁺	E1		
2784.27	5 ⁻	1052.17 9	54 2	1732.16	4 ⁺			
		1500.59 9	100 2	1283.61	4 ⁺			Mult.: M1,E2 listed by 2007Ba73, but ΔJ^π requires E1.
								Mult.: M1,E2 listed by 2007Ba73, but ΔJ^π requires E1.
2788.84	2 ⁺	1579.61 10	13 1	1209.62	2 ⁺	M1+E2	-1.5 +6-13	E_γ : poor fit, level-energy difference=1579.21.
		2230.17 8	100 4	558.39	2 ⁺	M1+E2		E_γ : level-energy difference=2230.43. δ : =-0.28 4 or +7.6 +30-19.
2799.96	1 ⁺	1590.20 10 2241.62 10	19 1 25 1	1209.62 558.39	2 ⁺ 2 ⁺	M1+E2 M1+E2	<+0.24 +1 +62-1	
		2799.97 8	100 11	0.0	0 ⁺	M1		
2806.55	3 ⁺	1522.86 9	86 2	1283.61	4 ⁺	M1+E2	+8 +8-3	
		2248.22 9	100 5	558.39	2 ⁺	M1+E2	+0.34 4	
2811.92	2 ⁺	853.91 8	18 1	1958.03	3 ⁻			
		2253.48 10	100 5	558.39	2 ⁺	M1+E2		δ : =+3.4 +5-4 or -0.11 4.
		2811.33 10	65 8	0.0	0 ⁺	E2		
2811.93	4 ⁺	880.8 2		1931.93	4 ⁺	E2		E_γ : poor fit, level-energy difference=880.0.

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$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73 (continued) $\gamma(^{114}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	Comments
2811.93	4 ⁺	1447.74 10	100 7	1364.31	2 ⁺	E2		
		1601.96 10	35 2	1209.62	2 ⁺	E2		E_γ : level-energy difference=1602.29.
2820.08	4 ⁺	601.35 10		2218.78	2 ⁺			
		772.20 10	100 18	2047.94	2 ⁺			
		861.92 10	86 5	1958.03	3 ⁻			
2827.88		1618.25 9	100.0 18	1209.62	2 ⁺	E2		
2871.63	2,3	913.57 9	13 1	1958.03	3 ⁻			
		2313.24 9	100 5	558.39	2 ⁺			
2874.26	2,4	826.11 8	100 2	2047.94	2 ⁺			
		916.27 9	19 1	1958.03	3 ⁻			
		1664.77 9	33 1	1209.62	2 ⁺			
		2316.2 2		558.39	2 ⁺			
2880.56	4,3	1596.94 9		1283.61	4 ⁺			
2910.37	4	707.30 [‡] 5		2204.34	3 ⁺			
		2351.96 15		558.39	2 ⁺			
2918.45	3	1634.83 9		1283.61	4 ⁺	M1,E2		
2932.97	4 ⁺	1649.35 9		1283.61	4 ⁺	E2		
2935.76	2 ⁺	1629.36 10	56 1	1305.60	0 ⁺	E2		E_γ : poor fit, level-energy difference=1630.15.
		1652.53 9	100 2	1283.61	4 ⁺	E2		E_γ : poor fit, level-energy difference=1652.14.
		1725.78 20	85 3	1209.62	2 ⁺	M1+E2	-1.5 +1-14	
		2377.67 9	93 6	558.39	2 ⁺	M1+E2		E_γ : level-energy difference=2377.35. δ : =+0.20 +11-7 or +1.5 3.
2941.27	2,3 ⁺	1731.59 9	100 2	1209.62	2 ⁺	M1+E2	-0.9 +2-38	
		2382.90 9	96 6	558.39	2 ⁺	M1+E2	+0.18 3	
2953.00	3 ⁺	495.40 ^{‡†} 6		2456.39	1 ⁻			
		2394.59 9		558.39	2 ⁺	E2,M1+E2		δ : +0.15 4 for mult=M1+E2.
2955.97	5	1672.35 10		1283.61	4 ⁺			
2956.33	2	2397.92 9		558.39	2 ⁺			
2999.37	1 ⁽⁻⁾	420.21 ^{‡†} 6		2580.35	2 ⁻			
		614.25 10	21 2	2384.71	3 ⁻	E2		E_γ : poor fit, level-energy difference=614.66.
		2440.78 18	15 1	558.39	2 ⁺	E1		
		2999.71 9	100 15	0.0	0 ⁺	E1		E_γ : poor fit, level-energy difference=2999.33.
3001.63	4 ⁺	477.57 [‡] 6		2525.10 (3)		E2		
		2443.22 11		558.39	2 ⁺	E2		
3002.38	2 ⁺	954.98 10	11 3	2047.94	2 ⁺	M1+E2	-1.5 +7-22	E_γ : poor fit, level-energy difference=954.43.
		3001.68 11	100 15	0.0	0 ⁺	E2		E_γ : poor fit, level-energy difference=3002.34.
3025.04	2,3	2466.63 10		558.39	2 ⁺			
3051.54	(2)	1841.9 [†] 1		1209.62	2 ⁺			
3061.48	2 ⁺	1197.26 12	100 15	1864.10	3 ⁺			
		2503.12 9	95 10	558.39	2 ⁺	M1+E2	-1.5 +5-7	
		3062 1		0.0	0 ⁺			
3077.88	2 ⁺	1868.27 10	100 2	1209.62	2 ⁺	M1+E2	-0.42 +10-11	
		2519.40 20	33 3	558.39	2 ⁺	M1+E2	-1.5 +7-17	
		3077.77 20	58 10	0.0	0 ⁺	E2		
3108.22	1 ⁽⁻⁾	1743.98 15	7 1	1364.31	2 ⁺	E1		
		1973.27 20	9 1	1134.42	0 ⁺	E1		
		2549.65 20	100 8	558.39	2 ⁺	E1		
		3108.69 20	30 6	0.0	0 ⁺	E1		

Continued on next page (footnotes at end of table)

$^{114}\text{Cd}(n,n'\gamma)$ **2007Ba73** (continued) $\gamma(^{114}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	I_γ	E_f	J_f^π	Mult.	δ	Comments
3111.74	(2)	727.37 11 1746.88 14	50 6 15 2	2384.71 1364.31	3 ⁻ 2 ⁺	E2 E1		E_γ : level-energy difference=727.03. E_γ : level-energy difference=1747.42.
3115.56	3,2	1067.07 10	86 3	2047.94	2 ⁺	E2		E_γ : poor fit, level-energy difference=1067.61, E2 is questionable, see Adopted Levels.
		1274.15 11 1832.19 20 2557.36 11	100 3 37 2 91 5	1841.75 1283.61 558.39	2 ⁺ 4 ⁺ 2 ⁺			E_γ : level-energy difference=1273.80.
3140.34	3,2	1276.65 11 2581.50 11	46 2 100.0 8	1864.10 558.39	3 ⁺ 2 ⁺			E_γ : level-energy difference=1276.23. E_γ : level-energy difference=2581.92.
3141.2	6	473 1		2668.2	8 ⁺			
3156.89	2	2022.11 [†] 20 2598.60 12		1134.42 558.39	0 ⁺ 2 ⁺			
3167.40		642.67 11 1802.7 1		2525.19 1364.31	2 ⁺ 2 ⁺			E_γ : poor fit, level-energy difference=642.21. E_γ : level-energy difference=1803.1.
3168.72	2	1959.08 12		1209.62	2 ⁺			
3176.14	2,3	1128.04 10 1311.70 12 2618.17 11	49 3 68 4 100 5	2047.94 1864.10 558.39	2 ⁺ 3 ⁺ 2 ⁺			E_γ : poor fit, level-energy difference=2618.72.
3192.19	2,3	1982.55 13		1209.62	2 ⁺			
3205.86	2 ⁺	986.92 13 1247.75 13 1900.46 13	86 4 63 3 100 5	2218.78 1958.03 1305.60	2 ⁺ 3 ⁻ 0 ⁺	M1+E2 E1 E2		δ : -0.06 +19-18 or +2.8 +29-11.
3206.40	3	1274.15 11 1923.14 12	100.0 18 34.7 13	1931.93 1283.61	4 ⁺ 4 ⁺	M1+E2 M1+E2	+0.4 1 +0.7 +3-2	Mult.: 2007Ba73 list E2. E_γ : level-energy difference=1922.77. Mult.: 2007Ba73 list E2.
3213.02	1	3212.97 21		0.0	0 ⁺			
3218.45	1 ⁽⁻⁾	2659.82 20 3218.61 20	100 10 72 13	558.39 0.0	2 ⁺ 0 ⁺	(E1) (E1)		
3221.40	1	1915.78 16		1305.60	0 ⁺			
3222.76	0	2013.12 14		1209.62	2 ⁺			
3232.41	1,2,3	2673.99 11		558.39	2 ⁺			
3249.18	1	811.15 13 2040.06 14	100 20 72 8	2437.58 1209.62	0 ⁺ 2 ⁺			E_γ : level-energy difference=811.60. E_γ : level-energy difference=2039.54.
3257.46	1,2	802.1 3 2047.55 13 2699.14 14	60 3 100 19	2456.39 1209.62 558.39	1 ⁻ 2 ⁺ 2 ⁺			E_γ : level-energy difference=801.1.
3261.96	1,2,3	2703.54 13		558.39	2 ⁺			
3265.36	1,2	2706.94 13		558.39	2 ⁺			
3285.09	2,3 ⁺	2001.46 11		1283.61	4 ⁺			
3296.57		1092.43 12 2737.68 18	71 4 100 28	2204.34 558.39	3 ⁺ 2 ⁺			
3298.52	2,3	2740.10 12		558.39	2 ⁺			
3322.29	1	865.35 11 2764.51 12 3322.24 13		2456.39 558.39 0.0	1 ⁻ 2 ⁺ 0 ⁺			E_γ : poor fit, level-energy difference=865.89. E_γ : poor fit, level-energy difference=2763.87.
3334.34	2,3,4	753.76 13 2124.92 14 2775.97 13		2580.35 1209.62 558.39	2 ⁻ 2 ⁺ 2 ⁺			
3350.68	2,3	2792.26 18	100 13	558.39	2 ⁺			
3366.79	3	2808.37 15		558.39	2 ⁺			
3369.70		2811.28 [†] 9		558.39	2 ⁺			
3381.95	1,2,3	2172.19 15 2823.81 23	100 23 68 14	1209.62 558.39	2 ⁺ 2 ⁺			
3409.62	1,2	1545.50 15	100	1864.10	3 ⁺			

Continued on next page (footnotes at end of table)

$^{114}\text{Cd}(\text{n},\text{n}'\gamma)$ **2007Ba73** (continued) $\gamma(^{114}\text{Cd})$ (continued)

$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π	$E_i(\text{level})$	J_i^π	E_γ	E_f	J_f^π
3409.62	1,2	3410 1	0.0	0 ⁺	3503.80		1545.50 15	1958.03	3 ⁻
3462.24		3462.18 19	0.0	0 ⁺			2198.63 20	1305.60	0 ⁺
3478.54		2114.21 18	1364.31	2 ⁺	3543.74		2985.31 22	558.39	2 ⁺
3488.79		3488.73 22	0.0	0 ⁺	3552.14		2993.71 24	558.39	2 ⁺
3500.23		3500.17 20	0.0	0 ⁺	3610.7		3610.6 3	0.0	0 ⁺

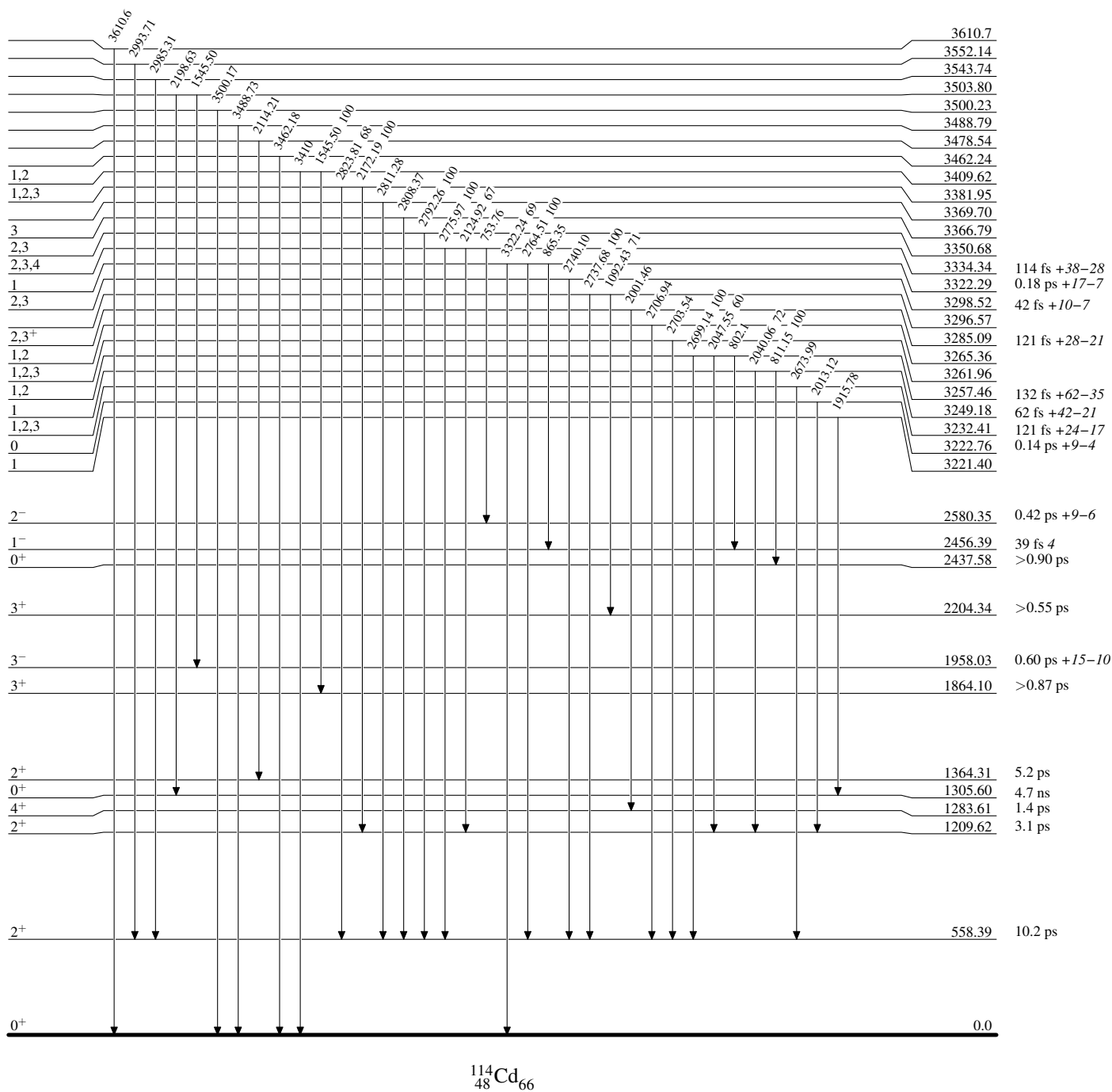
† γ listed as having multiple thresholds implying a doublet or multiplet. Note that in table II of [2007Ba73](#), there is a type error in the value, digit of “1” in the last place should be omitted.

‡ Multiply placed.

$^{114}\text{Cd}(n,n'\gamma)$ $^{2007}\text{Ba73}$

Level Scheme

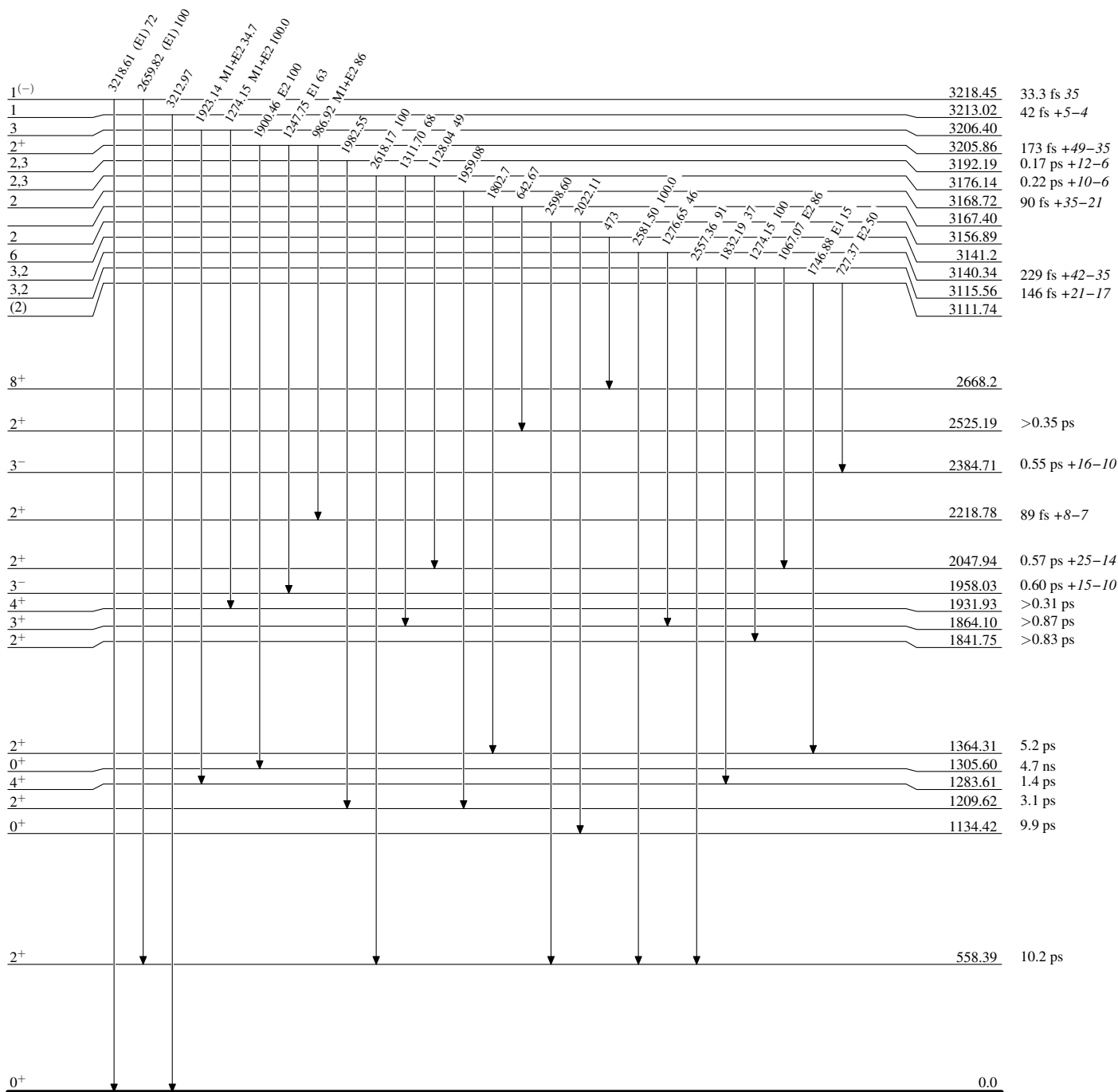
Intensities: Relative photon branching from each level

 $^{114}_{48}\text{Cd}_{66}$

$^{114}\text{Cd}(n,n'\gamma)$ $^{2007}\text{Ba73}$

Level Scheme (continued)

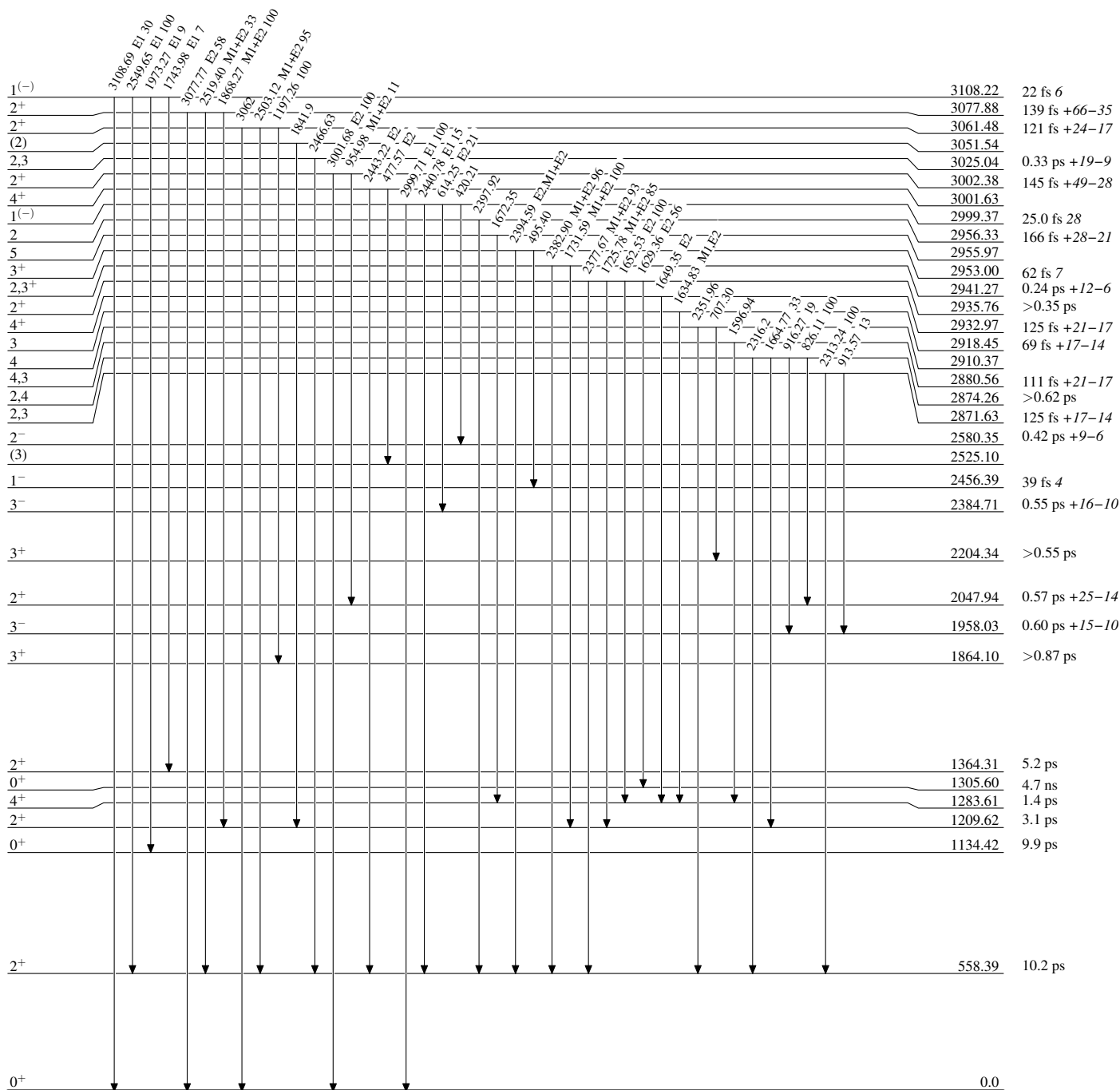
Intensities: Relative photon branching from each level



$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73

Level Scheme (continued)

Intensities: Relative photon branching from each level



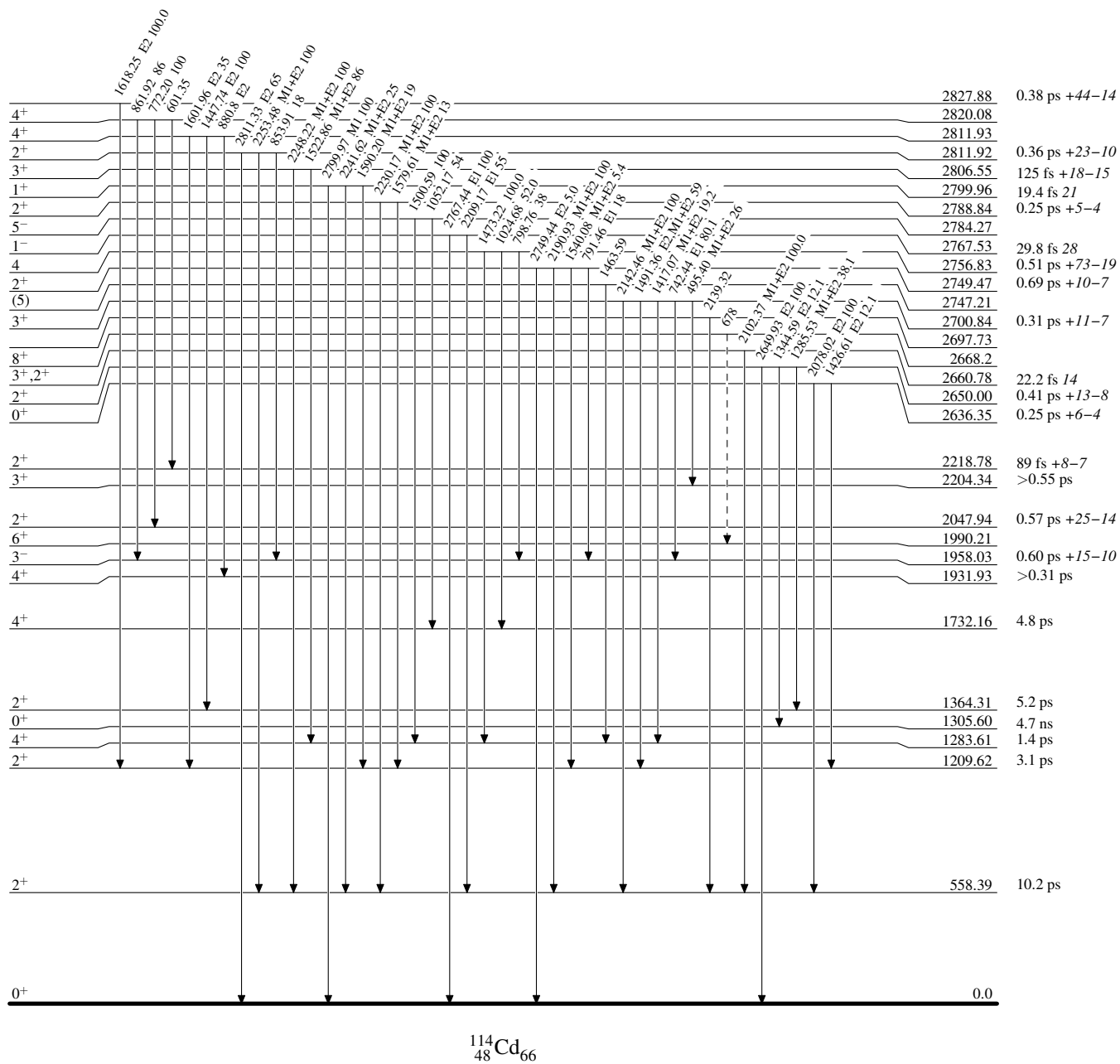
$^{114}\text{Cd}(n,n'\gamma)$ 2007Ba73

Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

-----► γ Decay (Uncertain)

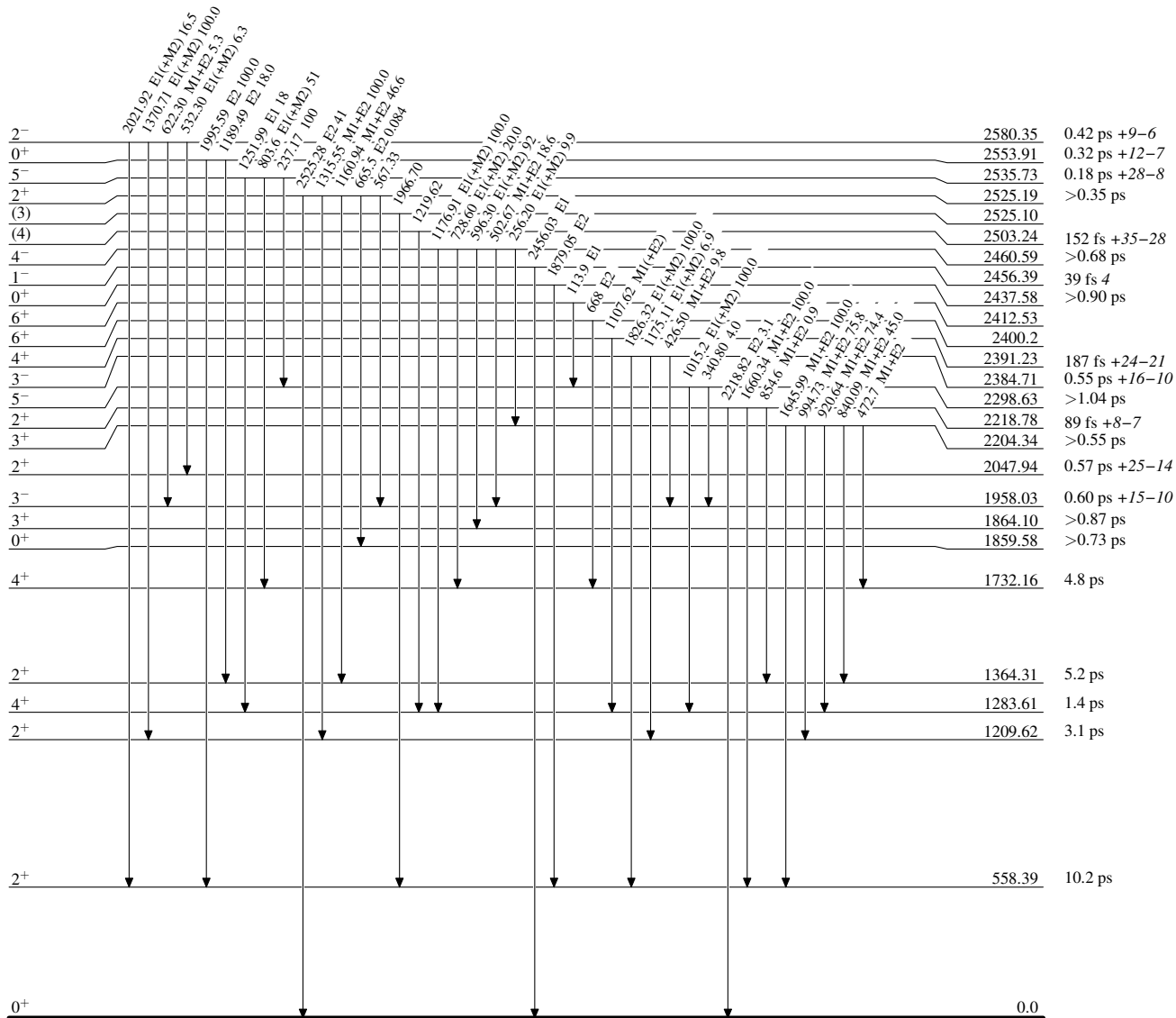


$^{114}_{48}\text{Cd}_{66}$

¹¹⁴Cd(n,n' γ) 2007Ba73

Level Scheme (continued)

Intensities: Relative photon branching from each level



¹¹⁴Cd₆₆

¹¹⁴Cd(n,n' γ) **2007Ba73**

Level Scheme (continued)

Intensities: Relative photon branching from each level

