^{110}In ε decay (69.1 min) 1995Be01,1990Gi01

History

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

Parent: ^{110}In: E=62.08 *4*; $J^\pi=2^+$; $T_{1/2}$=69.1 min *5*; Q(ε)=3878 *12*; %ε+%β^+ decay=100.0

1995Be01: ^{110}In activity from ^{111}Cd(p,2nγ), Ep=18.9 MeV. Protons were provided by the Philips variable energy cyclotron at the Paul Scherrer Institute (PSI) at Villigen, Switzerland. Three self-supporting targets of about 15 mg/cm^2, enriched to 95% ^{111}Cd were used. Singles and coincidence measurements were performed. For singles measurements, a Compton-suppressed Ge detector with a volume of 90 cm^3 (to measure γ-rays between 50 and 1800 keV) and a high purity Ge n-type detector with a volume of 98 cm^3 (to measure γ-rays between 400 and 3800 keV) were used. For coincidence measurements, four Ge detectors, three of which were Compton suppressed with volumes between 65 cm^3 and 127 cm^3 were used. Measured: Eγ, Iγ, $\gamma\gamma$. Deduced: ^{110}Cd energy levels, J$^\pi$, log *ft*.

1990Gi01: ^{110}In activity from ^{110}Cd(p,nγ), Ep=7 MeV. Protons were provided by the CN Van de Graaff accelerator of the Laboratory Nazionali di Legnaro. The internal conversion electrons were analyzed by means of a magnetic transport system followed by a 5cm^2×5cm^2 Si(Li) detector. γ-rays were detected using a HPGe detector. Measured: Eγ, Iγ, Ice. Deduced: B(E0)/B(E2).

Others: 2009Be44, 1992Ku01, 1990Ku01, 1990KuZY, 1977Me15, 1977MeZY, 1970BuZZ, 1969Sa20, 1964Na03, 1962Ka08, 1953Bl44, 1951Mc11.

^{110}Cd Levels

E(level)†	J$^\pi$‡	Comments
0.0	0$^+$	
657.792 *19*	2$^+$	
1473.07 *4*	0$^+$	B(E0;0$^+$ to 0$^+$ g.s. level)/B(E2;0$^+$ to 657 keV, 2$^+$ level)=0.027 *4* (1990Gi01).
1475.775 *20*	2$^+$	
1542.44 *3*	4$^+$	
1731.33 *4*	0$^+$	B(E0;0$^+$ to 0$^+$ g.s. level)/B(E2;0$^+$ to 657 keV, 2$^+$ level)<0.049 (1990Gi01). B(E2; 0$^+$ to 657 keV, 2$^+$ level)×B(E2; 0$^+$ to 0$^+$ g.s. level)/B(E2;0$^+$ to 657 keV, 2$^+$ level)×B(E2;0$^+$ to 1475 keV, 2$^+$ level)<0.00029 (1990Gi01). B(E0;0$^+$ to 1473 keV, 0$^+$ level)/B(E2;0$^+$ to 657 keV, 2$^+$ level)<7.2 (1990Gi01). B(E0;0$^+$ to 1473, 0$^+$ level)/B(E2;0$^+$ to 1475 keV, 2$^+$ level)<0.042 (1990Gi01).
1783.537 *25*	2$^+$	
2078.58 *18*	0$^+$	
2078.84 *4*	3$^-$	
2162.80 *3*	3$^+$	
2287.44 *6*	2$^+$	
2331.99 *17*	(0)$^+$	
2355.81 *4*	2$^+$	
2433.09 *15*	3$^+$	
2477.40 *5*	2$^+$	
2481.606 *20*	(2)$^+$	E(level),J$^\pi$: From Adopted Levels.
2633.06 *5*	2$^+$	
2787.24 *4*	2$^+$	
2869.17 *3*	1$^+$,2$^+$	
2917.60 *7*	2$^+$,3,4$^+$	E(level),J$^\pi$: From Adopted Levels.
2975.26 *4*	1$^+$,2$^+$	
3078.38 *3*	1$^{(+)}$	
3101.90 *4*	2$^+$	
3128.41 *7*	1$^+$,2$^+$	
3193.43 *4*	(3$^+$)	
3208.69 *8*	2$^+$,3$^+$	
3314.44 *4*	2$^+$	
3403.31 *6*	(1$^-$)	
3466.42 *5*	1,2,3	

Continued on next page (footnotes at end of table)

^{110}In ε decay (69.1 min) 1995Be01,1990Gi01 (continued)

^{110}Cd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]
3475.420 *25*	1$^+$
3634.68 *12*	2$^+$
3726.58 *18*	1,2$^+$
3771.77 *4*	1$^+$

[†] From least-squares fit to Eγ′s.
[‡] From Adopted Levels.

ε,β$^+$ radiations

E(decay)	E(level)	Iβ$^+$ [‡]	Iε[‡]	Log *ft*	I(ε+β$^+$)[†‡]	Comments
(168 *12*)	3771.77		0.0788 *21*	5.42 *8*	0.0788 *21*	εK=0.825 *4*; εL=0.139 *3*; εM+=0.0360 *9*
(214 *12*)	3726.58		0.0039 *10*	6.96 *13*	0.0039 *10*	εK=0.8350 *21*; εL=0.1313 *17*; εM+=0.0337 *5*
(305 *12*)	3634.68		0.058 *6*	6.13 *6*	0.058 *6*	εK=0.8450 *10*; εL=0.1236 *7*; εM+=0.03142 *21*
(465 *12*)	3475.420		0.812 *20*	5.38 *3*	0.812 *20*	εK=0.8523 *4*; εL=0.1179 *3*; εM+=0.02976 *9*
(474 *12*)	3466.42		0.507 *13*	5.60 *3*	0.507 *13*	εK=0.8526 *4*; εL=0.1177 *3*; εM+=0.02970 *8*
(537 *12*)	3403.31		0.110 *4*	6.38 *3*	0.110 *4*	εK=0.8541 *3*; εL=0.11651 *21*; εM+=0.02935 *6*
(626 *12*)	3314.44		0.817 *15*	5.645 *20*	0.817 *15*	εK=0.8558 *2*; εL=0.11526 *15*; εM+=0.02899 *5*
(731 *12*)	3208.69		0.041 *3*	7.08 *4*	0.041 *3*	εK=0.8571 *2*; εL=0.1142 *1*; εM+=0.02868 *3*
(747 *12*)	3193.43		0.383 *8*	6.133 *18*	0.383 *8*	εK=0.8573 *2*; εL=0.1141 *1*; εM+=0.02864 *3*
(812 *12*)	3128.41		0.075 *6*	6.92 *4*	0.075 *6*	εK=0.8579 *1*; εL=0.11356 *9*; εM+=0.02849 *3*
(838 *12*)	3101.90		0.67 *6*	5.99 *5*	0.67 *6*	εK=0.8582 *1*; εL=0.11338 *8*; εM+=0.02844 *3*
(862 *12*)	3078.38		0.920 *14*	5.881 *15*	0.920 *14*	εK=0.8584 *1*; εL=0.11323 *8*; εM+=0.02840 *3*
(965 *12*)	2975.26		1.396 *22*	5.800 *14*	1.396 *22*	εK=0.8591; εL=0.11267 *6*; εM+=0.02824 *2*
(1071 *12*)	2869.17		1.86 *4*	5.769 *14*	1.86 *4*	εK=0.8597; εL=0.11221 *5*; εM+=0.02810 *2*
(1153 *12*)	2787.24		2.58 *12*	5.692 *23*	2.58 *12*	εK=0.8600; εL=0.11191 *5*; εM+=0.02801 *2*
(1307 *12*)	2633.06	0.00029 *5*	0.200 *5*	6.914 *14*	0.200 *5*	av Eβ=134.9 *53*; εK=0.8594 *2*; εL=0.11130 *6*; εM+=0.02784 *2*
(1463 *12*)	2477.40	0.00082 *10*	0.098 *6*	7.32 *3*	0.099 *6*	av Eβ=202.6 *52*; εK=0.8540 *8*; εL=0.11017 *13*; εM+=0.02755 *4*
(1507 *12*)	2433.09	0.00062 *10*	0.051 *7*	7.63 *6*	0.052 *7*	av Eβ=221.8 *52*; εK=0.8510 *10*; εL=0.10968 *15*; εM+=0.02742 *4*
(1584 *12*)	2355.81	0.0039 *7*	0.19 *3*	7.11 *7*	0.19 *3*	av Eβ=255.3 *52*; εK=0.8436 *14*; εL=0.10857 *21*; εM+=0.02714 *6*
(1653 *12*)	2287.44	0.0020 *2*	0.063 *6*	7.62 *4*	0.065 *6*	av Eβ=284.9 *52*; εK=0.8346 *19*; εL=0.1073 *3*; εM+=0.02681 *7*
(1777 *12*)	2162.80	<0.004	<0.07	>7.7	<0.07	av Eβ=339.0 *53*; εK=0.811 *3*; εL=0.1041 *4*; εM+=0.02601 *10*
(1861 *12*)	2078.84	0.014 *7*	0.16 *7*	7.33 *21*	0.17 *8*	av Eβ=375.7 *53*; εK=0.791 *4*; εL=0.1013 *5*; εM+=0.02531 *11*
(2157 *12*)	1783.537	0.236 *16*	0.93 *6*	6.69 *3*	1.17 *7*	av Eβ=505.5 *54*; εK=0.689 *5*; εL=0.0880 *7*; εM+=0.02196 *16*
(2464 *12*)	1475.775	0.30 *5*	0.55 *8*	7.04 *7*	0.85 *13*	av Eβ=642.7 *54*; εK=0.555 *6*; εL=0.0707 *7*; εM+=0.01764 *18*
(3282 *12*)	657.792	60.7 *4*	26.5 *4*	5.600 *9*	87.23 *19*	av Eβ=1014.7 *56*; εK=0.263 *3*; εL=0.0333 *4*; εM+=0.00831 *10* E(decay): Other: Eβ=2225 *25*; average of 2200 *20* (1962Ka08) and 2250 *20* (1953Bl44). From 1953Bl44, allowed shape is suggested.

[†] From total intensity balance.
[‡] Absolute intensity per 100 decays.

$\gamma(^{110}$Cd)

Iγ normalization: From Σ I(γ+ce) to g.s.=100 with the assumption that the β^-feeding to the g.s. is negligible.

E_γ [‡]	I_γ [‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [&]	δ [a]	α [†]	Comments
184.4 *2*	0.23 *5*	3101.90	2$^+$	2917.60	2$^+$,3,4$^+$	[M1,E2]		0.0856 *13*	α(K)=0.0743 *11*; α(L)=0.00918 *14*; α(M)=0.00176 *3*; α(N+..)=0.000332 *5* α(N)=0.000314 *5*; α(O)=1.81×10^{-5} *3*
255.4[#] *3*	0.012[#] *2*	1731.33	0$^+$	1475.775	2$^+$	E2		0.0556	α(K)=0.0467 *7*; α(L)=0.00719 *11*; α(M)=0.001397 *21*; α(N+..)=0.000251 *4* α(N)=0.000241 *4*; α(O)=9.98×10^{-6} *15* Mult.: α(K)exp=0.023 *7*.
258.3 *1*		1731.33	0$^+$	1473.07	0$^+$	E0			E_γ: From 1990Gi01. The uncertainty of the electron energy was estimated from another close transition given by the authors. Iγ(258γ)/Ice(K)(258γ)<6.5×10^{-3} (1990Gi01). Mult.: From 1990Gi01.
295.3[#] *3*	0.040[#] *6*	2078.58	0$^+$	1783.537	2$^+$	E2		0.0342	α(K)=0.0290 *5*; α(L)=0.00426 *7*; α(M)=0.000826 *12*; α(N+..)=0.0001496 *22* α(N)=0.0001433 *21*; α(O)=6.29×10^{-6} *9* Mult.: α(K)exp=0.028 5.
295.42[@] *18*	0.017[@] *3*	2078.84	3$^-$	1783.537	2$^+$	(E1)		0.00805	α(K)=0.00702 *10*; α(L)=0.000836 *12*; α(M)=0.0001597 *23*; α(N+..)=2.98×10^{-5} *5* α(N)=2.83×10^{-5} *4*; α(O)=1.563×10^{-6} *22*
305.8 *2*	0.35 *11*	2787.24	2$^+$	2481.606	(2)$^+$	[M1]		0.0227	α(K)=0.0197 *3*; α(L)=0.00240 *4*; α(M)=0.000460 *7*; α(N+..)=8.69×10^{-5} *13* α(N)=8.21×10^{-5} *12*; α(O)=4.77×10^{-6} *7* E_γ,I_γ,Mult.: From adopted gammas.
310.4 *6*	0.031 *14*	1783.537	2$^+$	1473.07	0$^+$	[E2]		0.0290	α(K)=0.0246 *4*; α(L)=0.00357 *6*; α(M)=0.000692 *11*; α(N+..)=0.0001257 *20* α(N)=0.0001203 *19*; α(O)=5.38×10^{-6} *9*
^{x}338.24 *11*	0.025 *4*								
^{x}416.50 *11*	0.027 *4*								
548.4 *2*	0.0048 *7*	2331.99	(0)$^+$	1783.537	2$^+$	[E2]		0.00512	α(K)=0.00442 *7*; α(L)=0.000571 *8*; α(M)=0.0001099 *16*; α(N+..)=2.04×10^{-5} *3* α(N)=1.94×10^{-5} *3*; α(O)=1.011×10^{-6} *15* E_γ: From adopted gammas.
602.9[#] *3*	0.070[#] *11*	2078.84	3$^-$	1475.775	2$^+$	E1(+M2)	−0.14 *22*	0.0016 *11*	α(K)=0.0014 *10*; α(L)=0.00017 *12*; α(M)=3.2×10^{-5} *24*; α(N+..)=6.E−6 *5* α(N)=6.E−6 *5*; α(O)=3.2×10^{-7} *24* Mult.: From 1992Ku01, deduced from $\gamma(\theta)$ using (α,2nγ)).
605.4 *3*		2078.58	0$^+$	1473.07	0$^+$	E0			I_γ: <0.3 given in 1992Ku01.
620.3553 *17*	0.023 *6*	2162.80	3$^+$	1542.44	4$^+$	M1+E2	−0.50 *5*	0.00391	α(K)=0.00341 *5*; α(L)=0.000410 *6*; α(M)=7.86×10^{-5} *11*;

γ(^{110}Cd) (continued)

E_γ[‡]	I_γ[‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	δ[a]	α[†]	Comments
									α(N+..)=1.482×10^{-5} *21* α(N)=1.401×10^{-5} *20*; α(O)=8.11×10^{-7} *12* I_γ: From adopted gammas. Mult.: From adopted gammas.
624.47 *9*		2355.81	2$^+$	1731.33	0$^+$	E2		0.00360	α(K)=0.00311 *5*; α(L)=0.000394 *6*; α(M)=7.58×10^{-5} *11*; α(N+..)=1.411×10^{-5} *20* α(N)=1.339×10^{-5} *19*; α(O)=7.16×10^{-7} *10* E_γ,Mult.: From adopted gammas.
651.3[@c] *5*	0.0087[@] *11*	2433.09	3$^+$	1783.537	2$^+$				
657.75 *5*	100	657.792	2$^+$	0.0	0$^+$	E2		0.00314	α(K)=0.00272 *4*; α(L)=0.000342 *5*; α(M)=6.57×10^{-5} *10*; α(N+..)=1.224×10^{-5} *18* α(N)=1.161×10^{-5} *17*; α(O)=6.26×10^{-7} *9* Mult.: K/(L+M) = 6.0 *5* (^{110}In ε Decay (4.92 h) in 1962Ka08).
686.92 *9*	0.054 *15*	2162.80	3$^+$	1475.775	2$^+$	M1+E2	−1.69 *+2−4*	0.00289	α(K)=0.00251 *4*; α(L)=0.000309 *5*; α(M)=5.93×10^{-5} *9*; α(N+..)=1.111×10^{-5} *16* α(N)=1.053×10^{-5} *15*; α(O)=5.85×10^{-7} *9* I_γ: From adopted gammas. 0.111 *9* in ^{110}In ε decay (69.1 min). Mult.: Deduced from $\gamma(\theta)$ using (α,2nγ) (A_2=−0.70 *15*, A_4=−0.01 *2*) in 1992Ku01.
746.19 *17*		2477.40	2$^+$	1731.33	0$^+$	E2		0.00227	α(K)=0.00197 *3*; α(L)=0.000245 *4*; α(M)=4.69×10^{-5} *7*; α(N+..)=8.77×10^{-6} *13* α(N)=8.32×10^{-6} *12*; α(O)=4.57×10^{-7} *7* E_γ,Mult.: From adopted gammas.
790.81 *18*	0.018 *3*	3078.38	1$^{(+)}$	2287.44	2$^+$	[M1]		0.00226	α(K)=0.00197 *3*; α(L)=0.000233 *4*; α(M)=4.46×10^{-5} *7*; α(N+..)=8.44×10^{-6} *12* α(N)=7.97×10^{-6} *12*; α(O)=4.72×10^{-7} *7*
815.31 *4*	0.304 *13*	1473.07	0$^+$	657.792	2$^+$	E2		0.00183	α(K)=0.001592 *23*; α(L)=0.000195 *3*; α(M)=3.74×10^{-5} *6*; α(N+..)=7.01×10^{-6} *10* α(N)=6.64×10^{-6} *10*; α(O)=3.69×10^{-7} *6* Mult.: α(K)exp=0.0016 *2*, sum of the 815.31 keV and 818.05 keV transitions.
818.05 *3*	0.89 *11*	1475.775	2$^+$	657.792	2$^+$	M1+E2	−1.36 *6*	0.00191	α(K)=0.001665 *24*; α(L)=0.000201 *3*; α(M)=3.86×10^{-5} *6*; α(N+..)=7.25×10^{-6} *11* α(N)=6.86×10^{-6} *10*; α(O)=3.91×10^{-7} *6* Mult.: From adopted gammas. α(K)exp=0.0016 *2*, sum of the 815.31 keV and 818.05 keV transitions in ^{110}In ε Decay (69 min).
884.70 *4*	0.16 *8*	1542.44	4$^+$	657.792	2$^+$	E2		1.51×10^{-3}	α(K)=0.001313 *19*; α(L)=0.0001597 *23*; α(M)=3.06×10^{-5} *5*; α(N+..)=5.74×10^{-6} *8*

$^{110}_{48}Cd_{62}$-4

γ(^{110}Cd) (continued)

E_γ[‡]	I_γ[‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	δ[a]	α[†]	Comments
									α(N)=5.44×10^{-6} *8*; α(O)=3.05×10^{-7} *5* Mult.: α(K)exp=0.0012 *2*.
890.7[@] *5*	0.0024[@] *4*	2433.09	3$^+$	1542.44	4$^+$	[M1]		1.72×10^{-3}	α(K)=0.001506 *22*; α(L)=0.0001772 *25*; α(M)=3.39×10^{-5} *5*; α(N+..)=6.42×10^{-6} *9* α(N)=6.06×10^{-6} *9*; α(O)=3.59×10^{-7} *5*
957.30 *18*	0.030 *5*	2433.09	3$^+$	1475.775	2$^+$	M1+E2	−0.9 *7*	0.00137 *9*	α(K)=0.00120 *8*; α(L)=0.000142 *8*; α(M)=2.72×10^{-5} *15*; α(N+..)=5.1×10^{-6} *3* α(N)=4.9×10^{-6} *3*; α(O)=2.83×10^{-7} *21* Mult.: From adopted gammas.
958.56 *5*	0.069 *5*	3314.44	2$^+$	2355.81	2$^+$	[M1]		1.46×10^{-3}	α(K)=0.001277 *18*; α(L)=0.0001500 *21*; α(M)=2.87×10^{-5} *4*; α(N+..)=5.43×10^{-6} *8* α(N)=5.13×10^{-6} *8*; α(O)=3.05×10^{-7} *5*
1001.71 *6*	0.050 *5*	2477.40	2$^+$	1475.775	2$^+$	[M1]		1.32×10^{-3}	α(K)=0.001158 *17*; α(L)=0.0001358 *19*; α(M)=2.60×10^{-5} *4*; α(N+..)=4.92×10^{-6} *7* α(N)=4.64×10^{-6} *7*; α(O)=2.76×10^{-7} *4*
1023.05 *5*	0.064 *12*	3101.90	2$^+$	2078.84	3$^-$	[E1]		4.65×10^{-4}	α(K)=0.000407 *6*; α(L)=4.70×10^{-5} *7*; α(M)=8.97×10^{-6} *13*; α(N+..)=1.695×10^{-6} *24* α(N)=1.601×10^{-6} *23*; α(O)=9.40×10^{-8} *14*
1030.0[@] *5*	0.1095[@] *25*	3193.43	(3$^+$)	2162.80	3$^+$	[M1]		1.24×10^{-3}	α(K)=0.001088 *16*; α(L)=0.0001276 *18*; α(M)=2.44×10^{-5} *4*; α(N+..)=4.62×10^{-6} *7* α(N)=4.36×10^{-6} *7*; α(O)=2.59×10^{-7} *4*
1073.55 *4*	0.106 *5*	1731.33	0$^+$	657.792	2$^+$	E2		9.75×10^{-4}	α(K)=0.000850 *12*; α(L)=0.0001017 *15*; α(M)=1.95×10^{-5} *3*; α(N+..)=3.66×10^{-6} *6* α(N)=3.47×10^{-6} *5*; α(O)=1.98×10^{-7} *3* Mult.: α(K)exp=0.00085 8.
1085.57 *4*	0.039 *12*	2869.17	1$^+$,2$^+$	1783.537	2$^+$	E2+M1		1.11×10^{-3}	α(K)=0.000969 *14*; α(L)=0.0001135 *16*; α(M)=2.17×10^{-5} *3*; α(N+..)=4.11×10^{-6} *6* α(N)=3.88×10^{-6} *6*; α(O)=2.31×10^{-7} *4*
1090.83[@] *10*	0.0605[@] *17*	2633.06	2$^+$	1542.44	4$^+$	[E2]		9.42×10^{-4}	α(K)=0.000821 *12*; α(L)=9.81×10^{-5} *14*; α(M)=1.88×10^{-5} *3*; α(N+..)=3.54×10^{-6} *5* α(N)=3.34×10^{-6} *5*; α(O)=1.92×10^{-7} *3*
1125.77 *3*	1.06 *6*	1783.537	2$^+$	657.792	2$^+$	M1+E2	+0.28 *4*	1.01×10^{-3}	α(K)=0.000886 *13*; α(L)=0.0001038 *15*; α(M)=1.98×10^{-5} *3*; α(N+..)=4.78×10^{-6} *7* α(N)=3.55×10^{-6} *5*; α(O)=2.11×10^{-7} *3*; α(IPF)=1.022×10^{-6} *15* Mult.: α(K)exp=0.00043 5.
1151.70 *6*	0.050 *4*	3314.44	2$^+$	2162.80	3$^+$	[M1]		9.76×10^{-4}	α(K)=0.000852 *12*; α(L)=9.96×10^{-5} *14*; α(M)=1.90×10^{-5} *3*; α(N+..)=5.72×10^{-6} *8* α(N)=3.40×10^{-6} *5*; α(O)=2.03×10^{-7} *3*; α(IPF)=2.11×10^{-6} *3*
1157.24 *17*		2633.06	2$^+$	1475.775	2$^+$	[M1]		9.66×10^{-4}	α(K)=0.000843 *12*; α(L)=9.85×10^{-5} *14*;

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

E_γ[‡]	I_γ[‡b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[a]	α[†]	Comments
									α(M)=1.88×10^{-5} *3*; α(N+..)=6.00×10^{-6} *9* α(N)=3.37×10^{-6} *5*; α(O)=2.01×10^{-7} *3*; α(IPF)=2.43×10^{-6} *4* E_γ: From adopted gammas.
1235.67 *4*	0.297 *8*	3314.44	2$^+$	2078.84	3$^-$	[E1]		3.84×10^{-4}	α(K)=0.000288 *4*; α(L)=3.31×10^{-5} *5*; α(M)=6.32×10^{-6} *9*; α(N+..)=5.65×10^{-5} *8* α(N)=1.128×10^{-6} *16*; α(O)=6.66×10^{-8} *10*; α(IPF)=5.53×10^{-5} *8*
1314.25 *10*	0.042 *3*	2787.24	2$^+$	1473.07	0$^+$	[E2]		6.63×10^{-4}	α(K)=0.000555 *8*; α(L)=6.56×10^{-5} *10*; α(M)=1.254×10^{-5} *18*; α(N+..)=2.92×10^{-5} *4* α(N)=2.23×10^{-6} *4*; α(O)=1.298×10^{-7} *19*; α(IPF)=2.68×10^{-5} *4*
1344.88 *15*	0.019 *4*	3128.41	1$^+$,2$^+$	1783.537	2$^+$	[M1]		7.27×10^{-4}	α(K)=0.000610 *9*; α(L)=7.10×10^{-5} *10*; α(M)=1.358×10^{-5} *19*; α(N+..)=3.24×10^{-5} *5* α(N)=2.43×10^{-6} *4*; α(O)=1.449×10^{-7} *21*; α(IPF)=2.98×10^{-5} *5*
[x]1387.22 *7*	0.033 *4*								
1393.63 *7*	0.054 *4*	2869.17	1$^+$,2$^+$	1475.775	2$^+$	[M1]		6.88×10^{-4}	α(K)=0.000565 *8*; α(L)=6.58×10^{-5} *10*; α(M)=1.258×10^{-5} *18*; α(N+..)=4.41×10^{-5} *7* α(N)=2.25×10^{-6} *4*; α(O)=1.343×10^{-7} *19*; α(IPF)=4.17×10^{-5} *6* E_γ: Least-squares fit gives 1393.39 *3*.
1410.08 *8*	0.033 *4*	3193.43	(3$^+$)	1783.537	2$^+$	[M1]		6.76×10^{-4}	α(K)=0.000552 *8*; α(L)=6.42×10^{-5} *9*; α(M)=1.227×10^{-5} *18*; α(N+..)=4.84×10^{-5} *7* α(N)=2.19×10^{-6} *3*; α(O)=1.310×10^{-7} *19*; α(IPF)=4.61×10^{-5} *7*
1421.10[#] *4*	0.46[#] *7*	2078.84	3$^-$	657.792	2$^+$	E1(+M2)	+0.01 *8*	4.32×10^{-4} *10*	α(K)=0.000226 *9*; α(L)=2.59×10^{-5} *10*; α(M)=4.94×10^{-6} *19*; α(N+..)=0.000175 *3* α(N)=8.8×10^{-7} *4*; α(O)=5.23×10^{-8} *20*; α(IPF)=0.000174 *3* Mult.: α(K)exp=0.00019 2.
1473.1 *11*		1473.07	0$^+$	0.0	0$^+$	E0			E_γ: From 1990Gi01. The uncertainty of the electron energy was estimated by the evaluators based on the energy resolution (2.6 keV at 1450 keV electron energy) given by the authors. Iγ(1473γ)/Ice(K)(1473γ)<3.4×10^{-4} (1990Gi01). Mult.: From 1990Gi01.
1475.76 *3*	0.49 *6*	1475.775	2$^+$	0.0	0$^+$	E2		5.77×10^{-4}	α(K)=0.000440 *7*; α(L)=5.16×10^{-5} *8*; α(M)=9.87×10^{-6} *14*; α(N+..)=7.51×10^{-5} *11* α(N)=1.760×10^{-6} *25*; α(O)=1.029×10^{-7} *15*; α(IPF)=7.32×10^{-5} *11* I_γ: From adopted gammas. 0.42 *6* from ^{110}In ε decay (69.1 min). Mult.: α(K)exp=0.00046 *3*.
1505.03 *4*	0.11 *3*	2162.80	3$^+$	657.792	2$^+$	M1+E2	−1.27 *3*	5.90×10^{-4}	α(K)=0.000446 *7*; α(L)=5.20×10^{-5} *8*; α(M)=9.94×10^{-6} *14*; α(N+..)=8.21×10^{-5} *12* α(N)=1.776×10^{-6} *25*; α(O)=1.048×10^{-7} *15*;

$^{110}_{48}Cd_{62}$-6

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

E_γ[‡]	I_γ[‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	δ[a]	α[†]	Comments
									α(IPF)=8.02×10^{-5} *12* Mult.: α(K)exp=0.00050 5.
1555.76 *21*	0.013 *4*	3634.68	2$^+$	2078.84	3$^-$				
1583.18 *20*	0.013 *5*	3314.44	2$^+$	1731.33	0$^+$	[E2]		5.52×10^{-4}	α(K)=0.000384 *6*; α(L)=4.49×10^{-5} *7*; α(M)=8.57×10^{-6} *12*; α(N+..)=0.0001149 *17* α(N)=1.530×10^{-6} *22*; α(O)=8.98×10^{-8} *13*; α(IPF)=0.0001133 *16*
1602.57 *4*	0.123 *4*	3078.38	1$^{(+)}$	1475.775	2$^+$	[M1]		5.93×10^{-4}	α(K)=0.000422 *6*; α(L)=4.90×10^{-5} *7*; α(M)=9.36×10^{-6} *14*; α(N+..)=0.0001123 *16* α(N)=1.674×10^{-6} *24*; α(O)=1.001×10^{-7} *14*; α(IPF)=0.0001105 *16*
1626.17 *6*	0.055 *4*	3101.90	2$^+$	1475.775	2$^+$	[M1]		5.87×10^{-4}	α(K)=0.000410 *6*; α(L)=4.75×10^{-5} *7*; α(M)=9.08×10^{-6} *13*; α(N+..)=0.0001213 *17* α(N)=1.623×10^{-6} *23*; α(O)=9.71×10^{-8} *14*; α(IPF)=0.0001196 *17*
1629.62 *5*	0.085 *5*	2287.44	2$^+$	657.792	2$^+$	M1(+E2)	+0.06 *3*	5.87×10^{-4}	α(K)=0.000408 *6*; α(L)=4.73×10^{-5} *7*; α(M)=9.03×10^{-6} *13*; α(N+..)=0.0001227 *18* α(N)=1.616×10^{-6} *23*; α(O)=9.66×10^{-8} *14*; α(IPF)=0.0001209 *17* Mult.: From adopted gammas.
1652.70 *9*	0.028 *3*	3128.41	1$^+$,2$^+$	1475.775	2$^+$	[M1]		5.82×10^{-4}	α(K)=0.000396 *6*; α(L)=4.59×10^{-5} *7*; α(M)=8.78×10^{-6} *13*; α(N+..)=0.0001316 *19* α(N)=1.569×10^{-6} *22*; α(O)=9.39×10^{-8} *14*; α(IPF)=0.0001299 *19*
1666.23 *7*	0.042 *3*	3208.69	2$^+$,3$^+$	1542.44	4$^+$				
1674.3[#] *3*	0.020[#] *3*	2331.99	(0)$^+$	657.792	2$^+$	[E2]		5.45×10^{-4}	α(K)=0.000345 *5*; α(L)=4.02×10^{-5} *6*; α(M)=7.68×10^{-6} *11*; α(N+..)=0.0001527 *22* α(N)=1.370×10^{-6} *20*; α(O)=8.06×10^{-8} *12*; α(IPF)=0.0001512 *22*
1697.97 *4*	0.26 *3*	2355.81	2$^+$	657.792	2$^+$	M1+E2	+1.75 *15*	5.53×10^{-4}	α(K)=0.000345 *5*; α(L)=4.02×10^{-5} *6*; α(M)=7.67×10^{-6} *12*; α(N+..)=0.0001597 *23* α(N)=1.370×10^{-6} *20*; α(O)=8.10×10^{-8} *12*; α(IPF)=0.0001582 *23* Mult.: α(K)exp=0.00027 5.
1717.70 *10*	0.030 *3*	3193.43	(3$^+$)	1475.775	2$^+$	[M1]		5.74×10^{-4}	α(K)=0.000366 *6*; α(L)=4.24×10^{-5} *6*; α(M)=8.10×10^{-6} *12*; α(N+..)=0.0001578 *22* α(N)=1.448×10^{-6} *21*; α(O)=8.67×10^{-8} *13*; α(IPF)=0.0001563 *22*
1731.4 *11*		1731.33	0$^+$	0.0	0$^+$	E0			E_γ: From 1990Gi01. The uncertainty of the electron energy was estimated by the evaluators based on the energy resolution (2.6 keV at 1450 keV electron energy) given by the authors. Mult.: From 1990Gi01. Iγ(1731γ)/Ice(K)(1731γ)<2.1×10^{-4} (1990Gi01).
1744.10 *7*	0.050 *3*	3475.420	1$^+$	1731.33	0$^+$	[M1]		5.73×10^{-4}	α(K)=0.000355 *5*; α(L)=4.11×10^{-5} *6*; α(M)=7.85×10^{-6} *11*; α(N+..)=0.0001690 *24* α(N)=1.403×10^{-6} *20*; α(O)=8.40×10^{-8} *12*; α(IPF)=0.0001675 *24*
1775.3 *3*	0.021 *4*	2433.09	3$^+$	657.792	2$^+$	M1+E2	−0.35 *10*	5.69×10^{-4}	α(K)=0.000338 *6*; α(L)=3.92×10^{-5} *6*; α(M)=7.49×10^{-6} *12*; α(N+..)=0.000184 *3* α(N)=1.339×10^{-6} *21*; α(O)=8.00×10^{-8} *13*; α(IPF)=0.000183 *3* I$_\gamma$: From adopted gammas. 0.014 *3* in ^{110}In ε decay (69.1 min). Mult.,δ: From adopted gammas.

γ(^{110}Cd) (continued)

E_γ[‡]	I_γ[‡b]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[a]	α[†]	Comments
1783.47 *4*	0.30 *2*	1783.537	2^+	0.0	0^+	E2		5.49×10^{-4}	α(K)=0.000306 *5*; α(L)=3.56×10^{-5} *5*; α(M)=6.79×10^{-6} *10*; α(N+..)=0.000201 *3* α(N)=1.212×10^{-6} *17*; α(O)=7.15×10^{-8} *10*; α(IPF)=0.000200 *3* Mult.: α(K)exp=0.00018 *3*.
1819.82 *24*		2477.40	2^+	657.792	2^+	[M1]		5.72×10^{-4}	α(K)=0.000325 *5*; α(L)=3.76×10^{-5} *6*; α(M)=7.19×10^{-6} *10*; α(N+..)=0.000202 *3* α(N)=1.286×10^{-6} *18*; α(O)=7.70×10^{-8} *11*; α(IPF)=0.000201 *3* E_γ: From adopted gammas.
1851.15 *13*	0.046 *4*	3634.68	2^+	1783.537	2^+				
1975.20 *5*	0.144 *4*	2633.06	2^+	657.792	2^+	[E2+M1]		5.87×10^{-4}	α(K)=0.000276 *4*; α(L)=3.18×10^{-5} *5*; α(M)=6.08×10^{-6} *9*; α(N+..)=0.000274 *4* α(N)=1.088×10^{-6} *16*; α(O)=6.52×10^{-8} *10*; α(IPF)=0.000272 *4*
2002.37 *5*	0.132 *3*	3475.420	1^+	1473.07	0^+	[M1]		5.91×10^{-4}	α(K)=0.000268 *4*; α(L)=3.10×10^{-5} *5*; α(M)=5.92×10^{-6} *9*; α(N+..)=0.000286 *4* α(N)=1.058×10^{-6} *15*; α(O)=6.34×10^{-8} *9*; α(IPF)=0.000285 *4*
2078.4 *3*		2078.58	0^+	0.0	0^+	E0			I_γ: <0.17 given in 1992Ku01.
2129.40 *3*	2.20 *3*	2787.24	2^+	657.792	2^+	M1+E2		6.17×10^{-4}	α(K)=0.000237 *4*; α(L)=2.74×10^{-5} *4*; α(M)=5.23×10^{-6} *8*; α(N+..)=0.000347 *5* α(N)=9.35×10^{-7} *13*; α(O)=5.61×10^{-8} *8*; α(IPF)=0.000346 *5* Mult.: From adopted gammas.
2211.33 *3*	1.78 *3*	2869.17	$1^+,2^+$	657.792	2^+	M1+E2		6.38×10^{-4}	α(K)=0.000220 *3*; α(L)=2.54×10^{-5} *4*; α(M)=4.85×10^{-6} *7*; α(N+..)=0.000387 *6* α(N)=8.67×10^{-7} *13*; α(O)=5.20×10^{-8} *8*; α(IPF)=0.000386 *6* Mult.: From adopted gammas.
[x]2243.30 *10*	0.042 *3*								
[x]2259.38 *10*	0.045 *3*								
2317.41 *4*	1.315 *22*	2975.26	$1^+,2^+$	657.792	2^+	M1+E2	−0.16 *12*	6.67×10^{-4}	α(K)=0.000201 *3*; α(L)=2.31×10^{-5} *4*; α(M)=4.41×10^{-6} *7*; α(N+..)=0.000439 *7* α(N)=7.90×10^{-7} *12*; α(O)=4.74×10^{-8} *7*; α(IPF)=0.000438 *7* Mult.: From adopted gammas.
2420.51 *4*	0.535 *10*	3078.38	$1^{(+)}$	657.792	2^+	[M1]		6.98×10^{-4}	α(K)=0.000185 *3*; α(L)=2.13×10^{-5} *3*; α(M)=4.06×10^{-6} *6*; α(N+..)=0.000488 *7* α(N)=7.26×10^{-7} *11*; α(O)=4.36×10^{-8} *7*; α(IPF)=0.000487 *7*
2444.05 *4*	0.299 *6*	3101.90	2^+	657.792	2^+	[M1]		7.05×10^{-4}	α(K)=0.000181 *3*; α(L)=2.09×10^{-5} *3*; α(M)=3.98×10^{-6} *6*; α(N+..)=0.000499 *7* α(N)=7.12×10^{-7} *10*; α(O)=4.28×10^{-8} *6*; α(IPF)=0.000498 *7*
2477.16 *8*	0.051 *2*	2477.40	2^+	0.0	0^+	[E2]		7.24×10^{-4}	α(K)=0.0001686 *24*; α(L)=1.94×10^{-5} *3*; α(M)=3.70×10^{-6} *6*; α(N+..)=0.000532 *8* α(N)=6.61×10^{-7} *10*; α(O)=3.94×10^{-8} *6*; α(IPF)=0.000532 *8*
2535.55 *4*	0.219 *5*	3193.43	(3^+)	657.792	2^+	[M1]		7.34×10^{-4}	α(K)=0.0001689 *24*; α(L)=1.94×10^{-5} *3*; α(M)=3.71×10^{-6} *6*; α(N+..)=0.000542 *8* α(N)=6.63×10^{-7} *10*; α(O)=3.98×10^{-8} *6*; α(IPF)=0.000542 *8*
[x]2598.55 *13*	0.026 *2*								

$^{110}_{48}Cd_{62}$-8

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

E_γ[‡]	I_γ[‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α[†]	Comments
2656.55 *4*	0.406 *9*	3314.44	2$^+$	657.792	2$^+$	[M1]	7.75×10^{-4}	α(K)=0.0001545 *22*; α(L)=1.776×10^{-5} *25*; α(M)=3.39×10^{-6} *5*; α(N+..)=0.000600 *9* α(N)=6.06×10^{-7} *9*; α(O)=3.64×10^{-8} *5*; α(IPF)=0.000599 *9*
2745.45 *6*	0.090 *3*	3403.31	(1$^-$)	657.792	2$^+$	[E1]	1.17×10^{-3}	α(K)=8.11×10^{-5} *12*; α(L)=9.19×10^{-6} *13*; α(M)=1.752×10^{-6} *25*; α(N+..)=0.001083 *16* α(N)=3.13×10^{-7} *5*; α(O)=1.87×10^{-8} *3*; α(IPF)=0.001082 *16*
2787.30 *7*	0.035 *11*	2787.24	2$^+$	0.0	0$^+$	[E2]	8.31×10^{-4}	α(K)=0.0001375 *20*; α(L)=1.576×10^{-5} *22*; α(M)=3.01×10^{-6} *5*; α(N+..)=0.000675 *10* α(N)=5.37×10^{-7} *8*; α(O)=3.21×10^{-8} *5*; α(IPF)=0.000674 *10* I_γ: From adopted gammas. 0.072 *3* in ^{110}In ε decay (69.1 min).
2808.59 *4*	0.519 *13*	3466.42	1,2,3	657.792	2$^+$			
2817.61 *7*	0.058 *3*	3475.420	1$^+$	657.792	2$^+$	[M1]	8.32×10^{-4}	α(K)=0.0001383 *20*; α(L)=1.587×10^{-5} *23*; α(M)=3.03×10^{-6} *5*; α(N+..)=0.000675 *10* α(N)=5.42×10^{-7} *8*; α(O)=3.26×10^{-8} *5*; α(IPF)=0.000674 *10*
2869.28 *10*	0.033 *2*	2869.17	1$^+$,2$^+$	0.0	0$^+$			
^{x}2891.88 *6*	0.084 *3*							
^{x}2939.44 *25*	0.012 *2*							
2975.29 *6*	0.112 *4*	2975.26	1$^+$,2$^+$	0.0	0$^+$	[M1,E2]	8.88×10^{-4}	α(K)=0.0001249 *18*; α(L)=1.433×10^{-5} *20*; α(M)=2.73×10^{-6} *4*; α(N+..)=0.000746 *11* α(N)=4.89×10^{-7} *7*; α(O)=2.94×10^{-8} *5*; α(IPF)=0.000745 *11*
^{x}3043.97 *5*	0.126 *4*							
^{x}3059.20 *15*	0.017 *2*							
3078.42 *4*	0.265 *8*	3078.38	1$^{(+)}$	0.0	0$^+$	(M1)	9.24×10^{-4}	α(K)=0.0001173 *17*; α(L)=1.345×10^{-5} *19*; α(M)=2.57×10^{-6} *4*; α(N+..)=0.000791 *11* α(N)=4.59×10^{-7} *7*; α(O)=2.76×10^{-8} *4*; α(IPF)=0.000790 *11* Mult.: From adopted gammas.
3102.00 *18*	0.005 *1*	3101.90	2$^+$	0.0	0$^+$	[E2]	9.42×10^{-4}	α(K)=0.0001147 *16*; α(L)=1.312×10^{-5} *19*; α(M)=2.50×10^{-6} *4*; α(N+..)=0.000812 *12* α(N)=4.47×10^{-7} *7*; α(O)=2.68×10^{-8} *4*; α(IPF)=0.000812 *12*
3114[@]	0.0186[@] *6*	3771.77	1$^+$	657.792	2$^+$			
3128.25 *10*	0.030 *2*	3128.41	1$^+$,2$^+$	0.0	0$^+$	[E2]	9.52×10^{-4}	α(K)=0.0001131 *16*; α(L)=1.293×10^{-5} *19*; α(M)=2.47×10^{-6} *4*; α(N+..)=0.000823 *12* α(N)=4.41×10^{-7} *7*; α(O)=2.64×10^{-8} *4*; α(IPF)=0.000823 *12*
^{x}3280.85 *10*	0.033 *2*							
3315.2[@c] *7*	0.142[@] *3*	3314.44	2$^+$	0.0	0$^+$	[E2]	1.02×10^{-3}	α(K)=0.0001027 *15*; α(L)=1.173×10^{-5} *17*; α(M)=2.24×10^{-6} *4*; α(N+..)=0.000901 *13* α(N)=4.00×10^{-7} *6*; α(O)=2.40×10^{-8} *4*; α(IPF)=0.000901 *13*
3403.48 *15*	0.022 *2*	3403.31	(1$^-$)	0.0	0$^+$	[E1]	1.48×10^{-3}	α(K)=6.00×10^{-5} *9*; α(L)=6.79×10^{-6} *10*; α(M)=1.293×10^{-6} *19*; α(N+..)=0.001415 *20* α(N)=2.31×10^{-7} *4*; α(O)=1.387×10^{-8} *20*; α(IPF)=0.001415 *20*
^{x}3467.1 *5*	0.003 *1*							
3475.34 *3*	0.590 *19*	3475.420	1$^+$	0.0	0$^+$	[M1]	1.06×10^{-3}	α(K)=9.41×10^{-5} *14*; α(L)=1.076×10^{-5} *15*; α(M)=2.05×10^{-6} *3*;

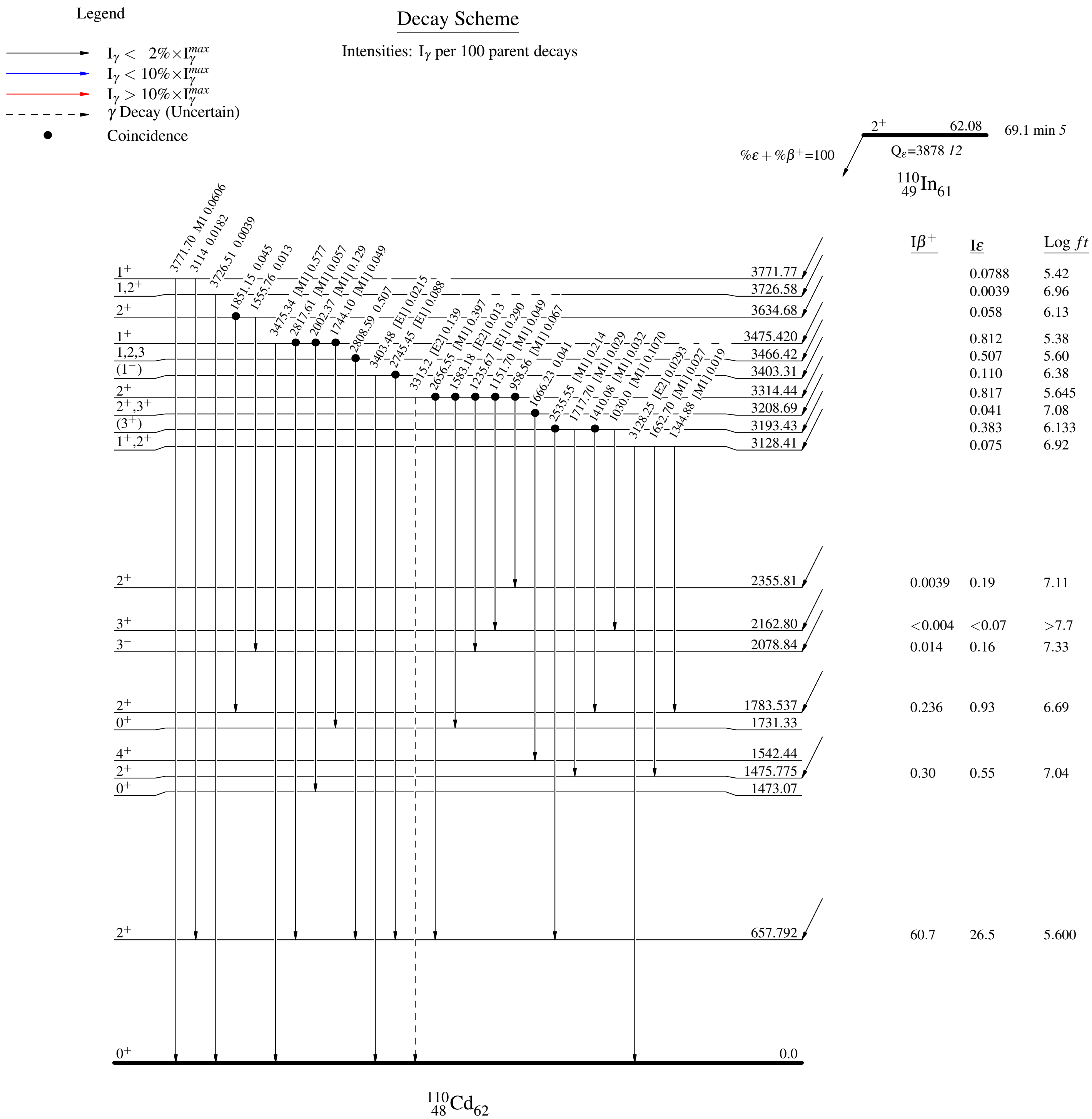
γ(^{110}Cd) (continued)

E_γ[‡]	I_γ[‡b]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[&]	α[†]	Comments
								α(N+..)=0.000958 *14* α(N)=3.67×10^{-7} *6*; α(O)=2.21×10^{-8} *3*; α(IPF)=0.000958 *14*
[x]3596.99 *4*	0.114 *4*							
3726.51 *18*	0.004 *1*	3726.58	1,2$^+$	0.0	0$^+$			
3771.70 *4*	0.062 *2*	3771.77	1$^+$	0.0	0$^+$	M1	1.17×10^{-3}	α(K)=8.14×10^{-5} *12*; α(L)=9.30×10^{-6} *13*; α(M)=1.773×10^{-6} *25*; α(N+..)=0.001076 *15* α(N)=3.17×10^{-7} *5*; α(O)=1.91×10^{-8} *3*; α(IPF)=0.001076 *15* E_γ: From adopted gammas.

[†] Additional information 1.
[‡] From 1995Be01, unless otherwise stated.
[#] From 1992Ku01.
[@] From adopted gammas.
[&] From 1992Ku01, deduced using α(K)exp (α(K)exp were normalized to α(K)exp(657.8)=2.7 *1* by the authors), unless otherwise stated.
[a] From adopted gammas.
[b] For absolute intensity per 100 decays, multiply by 0.9774 *7*.
[c] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

$^{110}_{48}$Cd$_{62}$-10

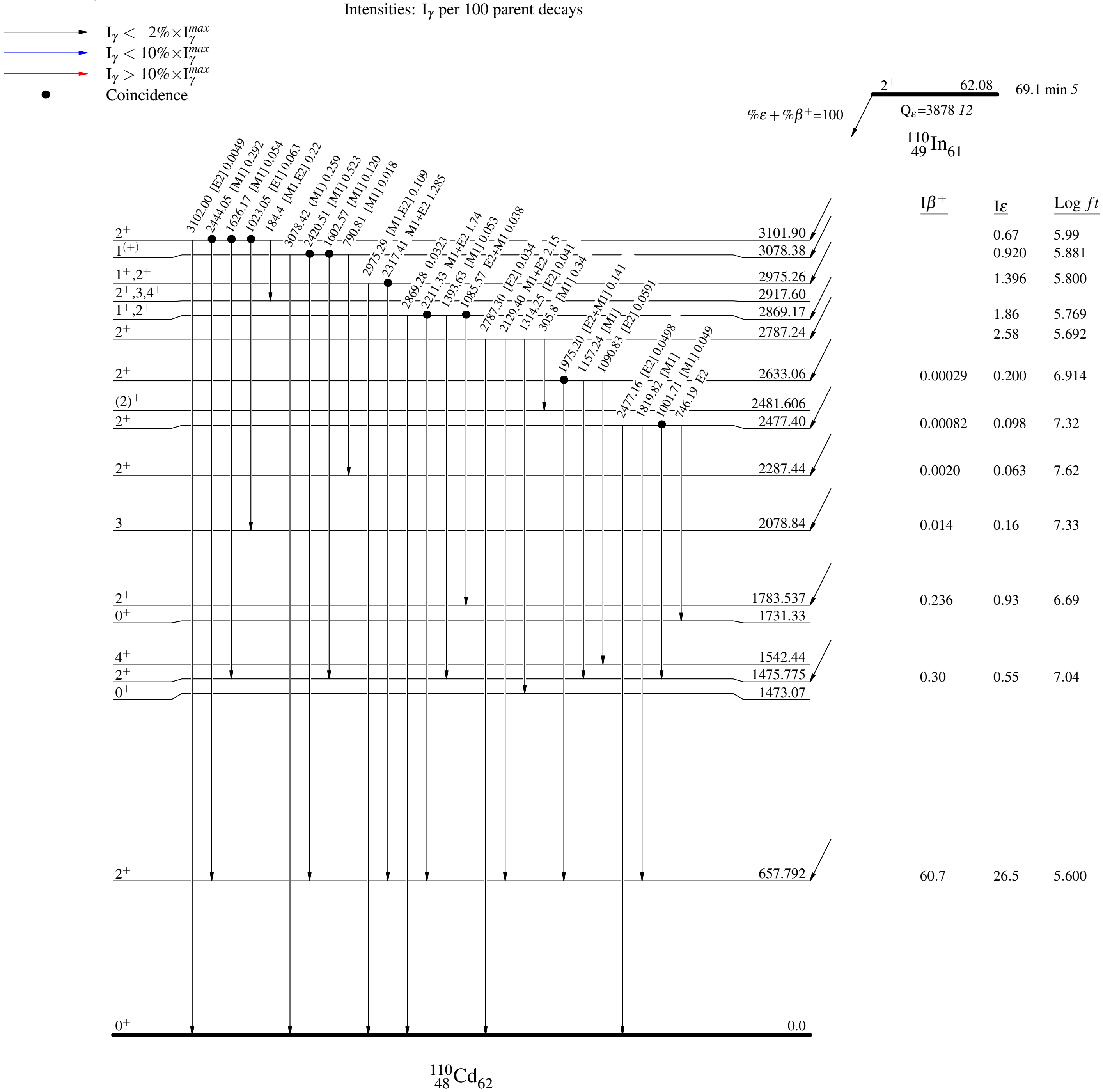
^{110}In ε decay (69.1 min) 1995Be01,1990Gi01



^{110}In ε decay (69.1 min) 1995Be01,1990Gi01

Decay Scheme (continued)

Intensities: I_γ per 100 parent decays



^{110}In ε decay (69.1 min) 1995Be01,1990Gi01