^{110}Ag β^- decay (249.83 d)

History

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

Parent: ^{110}Ag: E=117.59 *5*; $J^\pi=6^+$; $T_{1/2}$=249.83 d *4*; Q(β^-)=2892.9 *15*; %β^- decay=98.67 *8*

1993Ki18: 5 mg ^{109}Ag, enriched to 98.20% was irradiated by the thermal neutrons at Tsing-Hua Open-Pool reactor. γ-singles were measured using a HPGe-NaI(Tl) Compton-suppression spectrometer. Two HPGe detectors were used for $\gamma\gamma(\theta)$ measurements. Measured:Eγ, Iγ, $\gamma\gamma$-coin., $\gamma\gamma(\theta)$. Deduced: Energy levels, mult., δ.

1990Me15: γ-ray energies were analyzed using automated multi-spectrometer γ-ray counting facility at LLNL′s Nuclear Chemistry Division. Measured: Eγ, Iγ.

1981Ma09: ^{110m}Ag sources were produced at I′Institut National des Radioéléments de Flerus by slow-neutron activation of natural silver. γ-rays were detected using three Ge(Li) and one intrinsic Ge coaxial detectors. Measured: Eγ, Iγ.

1979Ve03: ^{110m}Ag sources were prepared at Bhabha Atomic Research Center at India. γ-rays were detected using a 64.1 cc Ge(Li) detector. 64.1 cc Ge(Li) and 3"x3" NaI(Tl) detectors were used for $\gamma\gamma(\theta)$ measurements. Measured: Eγ, Iγ, $\gamma\gamma(\theta)$. Deduced: Energy levels, mult., δ.

Others: 2000He14, 1993Ka37, 1981Ma09, 1980Ro22, 1980Yo05, 1979Co14, 1978Ma26, 1978Wa07, 1977Ge12, 1974Pr07, 1972Ph04, 1971Si21, 1970Kr14, 1969Br03, 1967Kr04, 1967Le19, 1967Mo12, 1965Si17, 1964Br21, 1964Ne05, 1964Sc06, 1963Su07, 1963Da03, 1962Ka07, 1960Vo06.

^{110}Cd Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	0^+	stable	
657.7621 *11*	2^+		μ: 0.52 *3* from Adopted Levels. Other: 0.56 *10* (from g=0.28 *5*, deduced using $T_{1/2}$=5 ps *1* in nuclear orientation (1978Wa07)) in ^{110}Ag β^- Decay (249.83 d).
1475.7900 *14*	2^+		
1542.4438 *14*	4^+		
1783.491 *16*	2^+		
2078.485 *12*	3^-		
2162.8012 *15*	3^+		J^π: J=3 from $\gamma\gamma(\theta)$ results of 1970Kr03 and 1980Ba58.
2220.0680 *14*	4^+		
2250.549 *12*	4^+		
2287.57? *5*	2^+		a 2287.41 level is fed from $J^\pi=1^+$ ^{110}Ag β^- decay (24.6 s). Because no γ feeding from higher levels is observed here from $J^\pi=6^+$ ^{110}Ag β^- decay (249.76 d), the weak β feeding to this level suggests a high spin (J≥4); therefore, the possibility of a close-lying doublet is not excluded.
2356.2?	2^+		
2433.23 *3*	3^+		
2479.933 *3*	6^+		
2539.672 *8*	5^-		
2561.284 *9*	4^+		
2659.857 *11*	5^-		
2662.50? *10*	0^+		Observation in this decay is questionable because of $J^\pi=0^+$ assignment in ^{110}Ag β^- decay (24.6 s), and no γ feeding to this level is observed here. Otherwise, this must be a close-lying doublet.
2705.668 *10*	$(4)^+$		
2707.397 *8*	$(4)^+$		
2793.420 *7*	$(4)^+$		
2842.62 *6*	$(5)^-$		
2876.808 *11*	6^+		
2926.7465 *16*	5^+		J^π: J=5 from $\gamma\gamma(\theta)$ results of 1970Kr03 and 1980Ba58.

[†] From least-squares fit to Eγ′s.

[‡] From Adopted Levels.

^{110}Ag β^- decay (249.83 d) (continued)

β^- radiations

E(decay)	E(level)	Iβ^-[†‡]	Log *ft*[†]	Comments
(83.7 *15*)	2926.7465	68.6 *5*	5.365 *25*	av Eβ=21.80 *41* E(decay): Other: 87 *2* (1963Da03).
(133.7 *15*)	2876.808	0.399 *18*	8.228 *25*	av Eβ=35.67 *43*
(167.9 *15*)	2842.62	0.0232 *9*	9.773 *21*	av Eβ=45.53 *44*
(350.6 *15*)	2659.857	0.036 *5*	10.61 *6*	av Eβ=102.83 *50*
(470.8 *15*)	2539.672	0.061 *5*	10.81 *4*	av Eβ=144.11 *54*
530 *2*	2479.933	31.3 *3*	8.277 *6*	av Eβ=165.52 *55* E(decay): Weighted average of 531 *2* (1967Mo12), 530 *5* (1962Ka07) and 529 *3* (1963Da03).

† From total intensity balances and the level scheme.
‡ For absolute intensity per 100 decays, multiply by 0.9867 *8*.

^{110}Ag β^- decay (249.83 d) (continued)

$\gamma(^{110}Cd)$

Iγ normalization: From Σ Ti(g.s.)=100. β^- feeding to the $J^\pi = 0^+$ ^{110}Cd g.s. is assumed to be negligible.

E_γ[‡]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
1.60 *10*		2707.397	(4)$^+$	2705.668	(4)$^+$	M1			Mult.: From M1/M2/M3=10 *2*/1.0/0.35 *10* (1993Ka37).
120.23 *3*	0.0179 *9*	2659.857	5$^-$	2539.672	5$^-$	M1(+E2)	−0.1 *3*	0.28 *7*	α(K)=0.24 *5*; α(L)=0.031 *14*; α(M)=0.006 *3*; α(N+..)=0.0011 *5* α(N)=0.0011 *5*; α(O)=5.9×10^{-5} *8* Mult.,δ: From adopted gammas.
133.333 *7*	0.0780 *16*	2926.7465	5$^+$	2793.420	(4)$^+$	[M1]		0.207	α(K)=0.180 *3*; α(L)=0.0224 *4*; α(M)=0.00431 *6*; α(N+..)=0.000811 *12* α(N)=0.000767 *11*; α(O)=4.39×10^{-5} *7*
219.348 *8*	0.076 *5*	2926.7465	5$^+$	2707.397	(4)$^+$	[M1]		0.0539	α(K)=0.0468 *7*; α(L)=0.00575 *8*; α(M)=0.001104 *16*; α(N+..)=0.000208 *3* α(N)=0.000197 *3*; α(O)=1.137×10^{-5} *16*
221.078 *10*	0.0716 *10*	2926.7465	5$^+$	2705.668	(4)$^+$	[M1]		0.0527	α(K)=0.0458 *7*; α(L)=0.00563 *8*; α(M)=0.001081 *16*; α(N+..)=0.000204 *3* α(N)=0.000193 *3*; α(O)=1.114×10^{-5} *16*
229.420[c] *22*	0.0126 *14*	2479.933	6$^+$	2250.549	4$^+$	[E2]		0.0801	α(K)=0.0670 *10*; α(L)=0.01070 *15*; α(M)=0.00208 *3*; α(N+..)=0.000373 *6* α(N)=0.000358 *5*; α(O)=1.410×10^{-5} *20*
[x]264.25 *6*	0.0064 *6*								
266.914 *12*	0.043 *4*	2926.7465	5$^+$	2659.857	5$^-$	[E1]		0.01057	α(K)=0.00922 *13*; α(L)=0.001100 *16*; α(M)=0.000210 *3*; α(N+..)=3.92×10^{-5} *6* α(N)=3.72×10^{-5} *6*; α(O)=2.04×10^{-6} *3*
295.42 *18*	0.00110 *7*	2078.485	3$^-$	1783.491	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* Iγ: From adopted gammas. Eγ,Mult.: From adopted gammas.
310.4 *6*	0.00009 *4*	1783.491	2$^+$	1475.7900	2$^+$	[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* Eγ,Iγ: From adopted gammas.
341.3[c] *1*	0.0023 *5*	2561.284	4$^+$	2220.0680	4$^+$	[M1]		0.01715	α(K)=0.01493 *21*; α(L)=0.00181 *3*; α(M)=0.000347 *5*; α(N+..)=6.55×10^{-5} *10* α(N)=6.19×10^{-5} *9*; α(O)=3.61×10^{-6} *5*
[x]356.42 *7*	0.0045 *3*								
360.23 *8*	0.008 *5*	2793.420	(4)$^+$	2433.23	3$^+$	[M1]		0.01496	α(K)=0.01303 *19*; α(L)=0.001575 *22*; α(M)=0.000302 *5*; α(N+..)=5.71×10^{-5} *8* α(N)=5.39×10^{-5} *8*; α(O)=3.15×10^{-6} *5*
365.448 *11*	0.098 *5*	2926.7465	5$^+$	2561.284	4$^+$	[M1]		0.01443	α(K)=0.01257 *18*; α(L)=0.001519 *22*; α(M)=0.000291 *4*;

$^{110}_{48}Cd_{62}$-3

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ [‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	δ [&]	α [†]	Comments
									α(N+..)=5.50×10^{-5} *8* α(N)=5.20×10^{-5} *8*; α(O)=3.03×10^{-6} *5*
387.075 *9*	0.0549 *9*	2926.7465	5$^+$	2539.672	5$^-$	[E1]		0.00399	α(K)=0.00348 *5*; α(L)=0.000412 *6*; α(M)=7.88×10^{-5} *11*; α(N+..)=1.476×10^{-5} *21* α(N)=1.398×10^{-5} *20*; α(O)=7.86×10^{-7} *11*
396.894 *22*	0.039 *4*	2876.808	6$^+$	2479.933	6$^+$	M1+E2		0.0125 *8*	α(K)=0.0108 *6*; α(L)=0.00139 *17*; α(M)=0.00027 *4*; α(N+..)=5.0×10^{-5} *6* α(N)=4.7×10^{-5} *6*; α(O)=2.50×10^{-6} *5* Mult.: From adopted gammas.
409.38[b] *4*	0.0067[b] *7*	2659.857	5$^-$	2250.549	4$^+$	E1(+M2)	−0.029 *23*	0.00350 *9*	α(K)=0.00305 *8*; α(L)=0.000361 *10*; α(M)=6.90×10^{-5} *18*; α(N+..)=1.29×10^{-5} *4* α(N)=1.23×10^{-5} *4*; α(O)=6.91×10^{-7} *18* Mult.,δ: From adopted gammas.
409.6[b] *1*	0.0041[b] *5*	2842.62	(5)$^-$	2433.23	3$^+$	[M2]		0.0396	α(K)=0.0340 *5*; α(L)=0.00452 *7*; α(M)=0.000877 *13*; α(N+..)=0.0001649 *24* α(N)=0.0001561 *22*; α(O)=8.77×10^{-6} *13* I_γ: Component of doublet. Placement proposed by 1981Ma09. Iγ from adopted gammas.
446.812 *3*	3.87 *5*	2926.7465	5$^+$	2479.933	6$^+$	M1+E2	−0.39 *2*	0.00883	α(K)=0.00768 *11*; α(L)=0.000936 *14*; α(M)=0.000180 *3*; α(N+..)=3.38×10^{-5} *5* α(N)=3.20×10^{-5} *5*; α(O)=1.83×10^{-6} *3* Mult.: α(K)exp=0.0070 *11*. δ: Weighted average of −0.40 *6* (1978Wa07), −0.39 *+2−1* (1979Ve03), −0.35 *5* (1980Ru03) and −0.45 *20* (1970Kr03).
460.85 *8*	0.0054 *16*	2539.672	5$^-$	2078.485	3$^-$	E2		0.00845	α(K)=0.00726 *11*; α(L)=0.000965 *14*; α(M)=0.000186 *3*; α(N+..)=3.43×10^{-5} *5* α(N)=3.27×10^{-5} *5*; α(O)=1.641×10^{-6} *23* E_γ,Mult.: From adopted gammas.
467.01 *4*	0.0264 *19*	2250.549	4$^+$	1783.491	2$^+$	E2		0.00812	α(K)=0.00698 *10*; α(L)=0.000926 *13*; α(M)=0.0001785 *25*; α(N+..)=3.29×10^{-5} *5* α(N)=3.14×10^{-5} *5*; α(O)=1.580×10^{-6} *23* Mult.: From adopted gammas.
493.38 *5*	0.0101 *11*	2926.7465	5$^+$	2433.23	3$^+$	[E2]		0.00692	α(K)=0.00596 *9*; α(L)=0.000782 *11*; α(M)=0.0001507 *22*; α(N+..)=2.79×10^{-5} *4* α(N)=2.65×10^{-5} *4*; α(O)=1.353×10^{-6} *19*
544.56 *4*	0.019 *3*	2707.397	(4)$^+$	2162.8012	3$^+$	M1+E2	+0.21 *11*	0.00541	α(K)=0.00472 *7*; α(L)=0.000565 *8*; α(M)=0.0001083 *16*; α(N+..)=2.05×10^{-5} *3* α(N)=1.93×10^{-5} *3*; α(O)=1.131×10^{-6} *17* Mult.,δ: From adopted gammas.
[x]572.7 *1*	0.0183 *13*								
573.0 *4*	0.018 *1*	2793.420	(4)$^+$	2220.0680	4$^+$	M1+E2	−0.3 *3*	0.00478 *9*	α(K)=0.00416 *8*; α(L)=0.000499 *7*; α(M)=9.57×10^{-5} *14*; α(N+..)=1.81×10^{-5} *3*

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

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ[‡]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
									α(N)=1.707×10^{-5} *24*; α(O)=9.96×10^{-7} *24*
									Mult.,δ: From adopted gammas.
603.08 *20*	0.012 *8*	2078.485	3$^-$	1475.7900	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*
									Eγ: ΔEγ was increased by the evaluators to fit the level scheme.
									Mult.,δ: From adopted gammas.
620.3553 *17*	2.86 *8*	2162.8012	3$^+$	1542.4438	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*; α(N+..)=1.482×10^{-5} *21*
									α(N)=1.401×10^{-5} *20*; α(O)=8.11×10^{-7} *12*
									Mult.: α(K)exp=0.0031 *6*.
									δ: From adopted gammas. Other: −0.54 *8* (weighted average of −0.50 *8* (1980Ru03), −0.8 *5* (1970Kr03) and −0.85 *25* (1979Ve03)) and −1.2 *5* or −0.7 *3* (1978Wa07) in ^{110}Ag β^- Decay (249.83 d).
626.256 *10*	0.227 *17*	2876.808	6$^+$	2250.549	4$^+$	E2		0.00357	α(K)=0.00309 *5*; α(L)=0.000391 *6*; α(M)=7.52×10^{-5} *11*; α(N+..)=1.400×10^{-5} *20*
									α(N)=1.329×10^{-5} *19*; α(O)=7.11×10^{-7} *10*
									Mult.: From adopted gammas.
630.62 *5*	0.035 *5*	2793.420	(4)$^+$	2162.8012	3$^+$	M1(+E2)	+0.02 *7*	0.00382	α(K)=0.00334 *5*; α(L)=0.000396 *6*; α(M)=7.59×10^{-5} *11*; α(N+..)=1.436×10^{-5} *21*
									α(N)=1.356×10^{-5} *19*; α(O)=8.00×10^{-7} *12*
									Mult.,δ: From adopted gammas.
[x]647.9 *4*	0.0185 *5*								
651.3 *5*	0.0029 *7*	2433.23	3$^+$	1783.491	2$^+$	[M1]		0.00354	α(K)=0.00309 *5*; α(L)=0.000367 *6*; α(M)=7.03×10^{-5} *10*; α(N+..)=1.330×10^{-5} *19*
									α(N)=1.256×10^{-5} *18*; α(O)=7.41×10^{-7} *11*
									Eγ,Iγ: from adopted gammas.
657.7600 *11*	100	657.7621	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.: α(K)exp=0.00264 *10*, directly measured by 1964Ne05. K/L=8.1 *7*, (M+N)/L=0.23 *6* (1993Ka37).
[x]666.90 *9*	0.030 *14*								
[x]676.59 *7*	0.15 *1*								Iγ: From 1990Me15.
677.6217 *12*	11.19 *5*	2220.0680	4$^+$	1542.4438	4$^+$	M1+E2	−0.34 *2*	0.00320	α(K)=0.00279 *4*; α(L)=0.000332 *5*; α(M)=6.37×10^{-5} *9*; α(N+..)=1.203×10^{-5} *17*
									α(N)=1.136×10^{-5} *16*; α(O)=6.65×10^{-7} *10*
									Mult.: From α(K)exp=0.0025 *4*.
									δ: From adopted gammas. Others: −0.25 *20* (1970Kr03), −0.44 *5* (1973Jo08), −0.36 *3* (1978Wa07), −0.25 *15* (1979Ve03), and −0.28 *5* (1980Ru03).

$^{110}_{48}Cd_{62}$-5

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ[‡]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
687.0091 *18*	6.83 *3*	2162.8012	3^+	1475.7900	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)=1.052×10^{-5} *15*; α(O)=5.85×10^{-7} *9* Mult.: α(K)exp=0.0022 *5*. δ: From adopted gammas. Others: −1.80 *5* (1973Jo08), −1.65 *9* (1978Wa07), −1.27 *38* (1980Ru03), −1.1 *+8−4* (1970Kr03) and −1.5 *+6−22* (1979Ve03) in ^{110}Ag β^- Decay (249.83 d).
706.6760 *15*	17.46 *7*	2926.7465	5^+	2220.0680	4^+	M1+E2	−1.15 *+5−6*	0.00275	α(K)=0.00239 *4*; α(L)=0.000291 *5*; α(M)=5.58×10^{-5} *8*; α(N+..)=1.048×10^{-5} *15* α(N)=9.92×10^{-6} *14*; α(O)=5.61×10^{-7} *9* Mult.: α(K)exp=0.00262 *23*. K/L= 4.7 (1963Su07). δ: Weighted average of −1.42 *7* (1978Wa07), −1.0 *3* (1970Kr03), −0.58 *2* (1973Jo08), −1.8 *+7−9* (1979Ve03) and −1.1 *3* (1980Ru03).
708.133 *20*	0.24 *5*	2250.549	4^+	1542.4438	4^+	M1+E2	−0.14 *3*	0.00291	α(K)=0.00254 *4*; α(L)=0.000301 *5*; α(M)=5.76×10^{-5} *8*; α(N+..)=1.090×10^{-5} *16* α(N)=1.029×10^{-5} *15*; α(O)=6.07×10^{-7} *9* E_γ: From 1990Me15. Mult.,δ: From adopted gammas.
714.94 *1*	0.0098 *24*	2793.420	$(4)^+$	2078.485	3^-	[E1]		9.54×10^{-4}	α(K)=0.000835 *12*; α(L)=9.73×10^{-5} *14*; α(M)=1.86×10^{-5} *3*; α(N+..)=3.50×10^{-6} *5* α(N)=3.31×10^{-6} *5*; α(O)=1.92×10^{-7} *3* E_γ: Weighted average of 1981Ma09 and 1993Ki18.
744.2755 *18*	4.99 *3*	2220.0680	4^+	1475.7900	2^+	E2		0.00229	α(K)=0.00199 *3*; α(L)=0.000246 *4*; α(M)=4.72×10^{-5} *7*; α(N+..)=8.83×10^{-6} *13* α(N)=8.37×10^{-6} *12*; α(O)=4.60×10^{-7} *7* Mult.: From adopted gammas. Other: E2(+M3) (1979Ve03) with −0.0 *+16−10* (1979Ve03) and (E2) from α(K)exp=0.0021 *4* (1967Mo12) in ^{110}Ag β^- Decay (249.83 d). δ=Infinite (1970Kr03) in ^{110}Ag β^- Decay (249.83 d).
763.9424 *17*	23.64 *7*	2926.7465	5^+	2162.8012	3^+	E2		0.00215	α(K)=0.00186 *3*; α(L)=0.000230 *4*; α(M)=4.42×10^{-5} *7*; α(N+..)=8.26×10^{-6} *12* α(N)=7.83×10^{-6} *11*; α(O)=4.32×10^{-7} *6* Mult.: From adopted gammas. Other: E2 from α(K)exp=0.00184 *17* (1967Mo12). E2(+M3) from 1979Ve03 with δ=−0.10 *+2−3* in ^{110}Ag β^- Decay (249.83 d). δ=Infinite (1970Kr03).
774.71 *7*	0.006 *3*	2250.549	4^+	1475.7900	2^+	E2		0.00207	α(K)=0.00180 *3*; α(L)=0.000222 *4*; α(M)=4.26×10^{-5}

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

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ [‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	δ [&]	α [†]	Comments
									6; α(N+..)=7.97×10^{-6} *12* α(N)=7.55×10^{-6} *11*; α(O)=4.17×10^{-7} *6*
818.0244 *18*	7.77 *4*	1475.7900	2$^+$	657.7621	2$^+$	M1+E2	−1.36 *6*	0.00191	Mult.: From adopted gammas. α(K)=0.001666 *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.: α(K)exp=0.00172 *19* (1967Mo12). δ: From adopted gammas. δ=−1.20 *15* (1970Kr03), −1.36 *10* (1973Jo08), −1.2 *5* (1978Wa07), −1.25 *+22−10* (1979Ve03), and −1.44 *10* (1980Ru03) in ^{110}Ag β^- decay (249.83 d)) Other: −0.27 *10* (1979Ve03).
884.6781 *13*	78.4 *12*	1542.4438	4$^+$	657.7621	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* α(N)=5.44×10^{-6} *8*; α(O)=3.05×10^{-7} *5* Mult.: α(K)exp=0.00126 *6*, directly measured by 1964Ne05. K/L=7.6 (1963Su07).
890.7 *5*	0.0009 *4*	2433.23	3$^+$	1542.4438	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* E_γ,I_γ: from adopted gammas.
937.485 *3*	36.6 *3*	2479.933	6$^+$	1542.4438	4$^+$	E2		1.32×10^{-3}	α(K)=0.001149 *16*; α(L)=0.0001390 *20*; α(M)=2.66×10^{-5} *4*; α(N+..)=5.00×10^{-6} *7* α(N)=4.73×10^{-6} *7*; α(O)=2.67×10^{-7} *4* Mult.: From adopted gammas. Other: From α(K)exp=0.0012 *8* (1964Ne05) and E2 from 1967Mo12. M3+E2 with δ=−0.07 *+7−3* (1979Ve03) in ^{110}Ag β^- Decay (249.53 d). Other δ= Infinite (1970Kr03) in ^{110}Ag β^- Decay (249.53 d).
957.38 *6*	0.0099 *19*	2433.23	3$^+$	1475.7900	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.,δ: From adopted gammas.
997.246 *14*	0.136 *4*	2539.672	5$^-$	1542.4438	4$^+$	E1(+M2)	−0.03 *5*	4.91×10^{-4} *17*	α(K)=0.000430 *15*; α(L)=4.97×10^{-5} *18*; α(M)=9.5×10^{-6} *4*; α(N+..)=1.79×10^{-6} *7* α(N)=1.69×10^{-6} *6*; α(O)=9.9×10^{-8} *4* Mult.: From adopted gammas.
1018.94 *4*	0.0149 *7*	2561.284	4$^+$	1542.4438	4$^+$	M1+E2	−0.6 *4*	0.00123 *5*	α(K)=0.00107 *4*; α(L)=0.000126 *5*; α(M)=2.42×10^{-5} *8*; α(N+..)=4.57×10^{-6} *16* α(N)=4.32×10^{-6} *15*; α(O)=2.54×10^{-7} *11* Mult.,δ: From adopted gammas.
[x]1050.4 *3*	0.008 *1*								
1085.447 *14*	0.076 *4*	2561.284	4$^+$	1475.7900	2$^+$	E2		9.52×10^{-4}	α(K)=0.000830 *12*; α(L)=9.92×10^{-5} *14*;

$^{110}_{48}Cd_{62}$-7

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ[‡]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
									α(M)=1.90×10^{-5} *3*; α(N+..)=3.57×10^{-6} *5* α(N)=3.38×10^{-6} *5*; α(O)=1.94×10^{-7} *3*
1117.48 *3*	0.0517 *9*	2659.857	5$^-$	1542.4438	4$^+$	E1		4.01×10^{-4}	Mult.: From adopted gammas. α(K)=0.000346 *5*; α(L)=3.98×10^{-5} *6*; α(M)=7.60×10^{-6} *11*; α(N+..)=8.06×10^{-6} *12* α(N)=1.356×10^{-6} *19*; α(O)=7.98×10^{-8} *12*; α(IPF)=6.62×10^{-6} *10*
1125.709 *20*	0.0322 *14*	1783.491	2$^+$	657.7621	2$^+$	M1+E2	+0.28 *4*	1.01×10^{-3}	Mult.: From adopted gammas. 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)=1.020×10^{-6} *15*
1163.19 *5*	0.078 *24*	2705.668	(4)$^+$	1542.4438	4$^+$	M1+E2	−0.03 *+6−9*	9.56×10^{-4}	Mult.,δ: From adopted gammas. α(K)=0.000834 *12*; α(L)=9.74×10^{-5} *14*; α(M)=1.86×10^{-5} *3*; α(N+..)=6.34×10^{-6} *9* α(N)=3.33×10^{-6} *5*; α(O)=1.98×10^{-7} *3*; α(IPF)=2.81×10^{-6} *4*
1164.98 *7*	0.046 *3*	2707.397	(4)$^+$	1542.4438	4$^+$	M1(+E2)	<+0.3	9.48×10^{-4} *15*	Mult.,δ: From adopted gammas. α(K)=0.000826 *13*; α(L)=9.66×10^{-5} *15*; α(M)=1.85×10^{-5} *3*; α(N+..)=6.46×10^{-6} *9* α(N)=3.30×10^{-6} *5*; α(O)=1.96×10^{-7} *3*; α(IPF)=2.96×10^{-6} *5*
1186.7 *1*	0.00170 *5*	2662.50?	0$^+$	1475.7900	2$^+$	[E2]		7.92×10^{-4}	Mult.,δ: From adopted gammas. α(K)=0.000686 *10*; α(L)=8.15×10^{-5} *12*; α(M)=1.560×10^{-5} *22*; α(N+..)=8.49×10^{-6} *12* α(N)=2.78×10^{-6} *4*; α(O)=1.602×10^{-7} *23*; α(IPF)=5.55×10^{-6} *8*
1251.06 *4*	0.028 *3*	2793.420	(4)$^+$	1542.4438	4$^+$	[M1]		8.27×10^{-4}	α(K)=0.000712 *10*; α(L)=8.31×10^{-5} *12*; α(M)=1.589×10^{-5} *23*; α(N+..)=1.571×10^{-5} *22* α(N)=2.84×10^{-6} *4*; α(O)=1.693×10^{-7} *24*; α(IPF)=1.270×10^{-5} *18*
1300.07 *7*	0.0200 *7*	2842.62	(5)$^-$	1542.4438	4$^+$	E1(+M2)	+0.0 *1*	3.93×10^{-4} *14*	α(K)=0.000264 *13*; α(L)=3.03×10^{-5} *15*; α(M)=5.8×10^{-6} *3*; α(N+..)=9.34×10^{-5} *16* α(N)=1.03×10^{-6} *6*; α(O)=6.1×10^{-8} *3*; α(IPF)=9.23×10^{-5} *16*
1334.348 *16*	0.150 *5*	2876.808	6$^+$	1542.4438	4$^+$	E2		6.48×10^{-4}	α(K)=0.000539 *8*; α(L)=6.35×10^{-5} *9*; α(M)=1.214×10^{-5} *17*; α(N+..)=3.37×10^{-5} *5* α(N)=2.16×10^{-6} *3*; α(O)=1.259×10^{-7} *18*; α(IPF)=3.14×10^{-5} *5* I_γ: Other: 0.34 *1* (1981Ma09). Mult.: From adopted gammas.

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

^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ [‡]	I_γ [#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [@]	δ [&]	α [†]	Comments
1384.2931 *20*	26.2 *5*	2926.7465	5^+	1542.4438	4^+	M1+E2	−0.44 *1*	6.82×10^{-4}	α(K)=0.000562 *8*; α(L)=6.55×10^{-5} *10*; α(M)=1.252×10^{-5} *18*; α(N+..)=4.25×10^{-5} *6* α(N)=2.24×10^{-6} *4*; α(O)=1.331×10^{-7} *19*; α(IPF)=4.01×10^{-5} *6* Mult.: α(K)exp=0.00055 *4*. δ: Weighted average of −0.37 *3* (1970Kr03), −0.46 *1* (1973Jo08), −0.39 *2* (1978Wa07), −0.42 *+7−6* (1979Ve03), and −0.44 *2* (1980Ru03).
1420.29[c] *10*	0.028 *4*	2078.485	3^-	657.7621	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)=4.95×10^{-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* E_γ: $\Delta E\gamma$ was increased by the evaluators to fit the level scheme. Mult.: From adopted gammas.
[x]1465.6 *1*									
1475.7792 *23*	4.27 *5*	1475.7900	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* Mult.: α(K)exp=0.00043 *6*. δ: δ(E2/M1)=infinite (1979Ve03 and 1970Kr03).
1505.0280 *20*	13.94 *16*	2162.8012	3^+	657.7621	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*; α(IPF)=8.02×10^{-5} *12* Mult.: α(K)exp=0.00046 *4*. δ: From adopted gammas. Others: −1.05 *16* (1988Kr03), −1.24 *7* (1988Kr03), −1.24 *20* (1980Ru03), −1.09 *9* (1978Wa07), −1.26 *6* (1973Jo08), −0.55 *10* (1970Kr03), −0.48 *3* (1973Jo08), and −0.40 *+9−17* (1979Ve03).
1562.2940 *18*	1.28 *3*	2220.0680	4^+	657.7621	2^+	E2		5.56×10^{-4}	α(K)=0.000394 *6*; α(L)=4.61×10^{-5} *7*; α(M)=8.80×10^{-6} *13*; α(N+..)=0.0001067 *15* α(N)=1.570×10^{-6} *22*; α(O)=9.21×10^{-8} *13*; α(IPF)=0.0001050 *15* Mult.: From adopted gammas. Other: E2(+M3) (1979Ve03) with −0.10 *+2−3* (1979Ve03) and (E2) from α(K)exp=0.00046 *7* (1967Mo12) in ^{110}Ag β^- Decay (249.83 d). δ=Infinite (1970Kr03) in ^{110}Ag β^- Decay (249.83 d).
[x]1572.35 *14*	0.0012 *3*								I_γ: From 1990Me15.
1592.77 *6*	0.0219 *8*	2250.549	4^+	657.7621	2^+	E2		5.51×10^{-4}	α(K)=0.000379 *6*; α(L)=4.43×10^{-5} *7*; α(M)=8.47×10^{-6} *12*; α(N+..)=0.0001188 *17* α(N)=1.511×10^{-6} *22*; α(O)=8.87×10^{-8} *13*;

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^{110}Ag β^- decay (249.83 d) (continued)

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

E_γ[‡]	I_γ[#a]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[@]	δ[&]	α[†]	Comments
									α(IPF)=0.0001172 *17* Mult.: From adopted gammas.
1629.79 *5*	0.0042 *5*	2287.57?	2^+	657.7621	2^+	M1+E2	+0.06 *3*	5.87×10^{-4}	α(K)=0.000407 *6*; α(L)=4.73×10^{-5} *7*; α(M)=9.03×10^{-6} *13*; α(N+..)=0.0001227 *18* α(N)=1.615×10^{-6} *23*; α(O)=9.66×10^{-8} *14*; α(IPF)=0.0001210 *17* Placement proposed by 1981Ma09. Mult.,δ: From adopted gammas.
1698.8[c] *1*	0.0018 *3*	2356.2?	2^+	657.7621	2^+	M1+E2	+1.75 *15*	5.53×10^{-4}	α(K)=0.000345 *5*; α(L)=4.01×10^{-5} *6*; α(M)=7.67×10^{-6} *12*; α(N+..)=0.0001600 *23* α(N)=1.369×10^{-6} *20*; α(O)=8.09×10^{-8} *12*; α(IPF)=0.0001586 *23* Placement proposed by 1981Ma09. Mult.,δ: From adopted gammas.
1775.42 *4*	0.0069 *3*	2433.23	3^+	657.7621	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* Mult.: From adopted gammas.
1783.49 *3*	0.0107 *5*	1783.491	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.: From adopted gammas.
1903.53 *3*	0.0169 *7*	2561.284	4^+	657.7621	2^+	E2		5.65×10^{-4}	α(K)=0.000271 *4*; α(L)=3.14×10^{-5} *5*; α(M)=6.00×10^{-6} *9*; α(N+..)=0.000256 *4* α(N)=1.071×10^{-6} *15*; α(O)=6.33×10^{-8} *9*; α(IPF)=0.000255 *4* Mult.: From adopted gammas.
2004.66[c] *7*	0.0013 *4*	2662.50?	0^+	657.7621	2^+	E2		5.85×10^{-4}	α(K)=0.000246 *4*; α(L)=2.85×10^{-5} *4*; α(M)=5.44×10^{-6} *8*; α(N+..)=0.000305 *5* α(N)=9.72×10^{-7} *14*; α(O)=5.76×10^{-8} *8*; α(IPF)=0.000304 *5* E_γ: Placement proposed by 1981Ma09. Mult.: From Adopted Levels.

† Additional information 1.
‡ From 2000He14, if available. Otherwise weighted average of values from 1993Ki18, 1990Me15, 1981Ma09 and 1979Ve03, unless otherwise stated.
# Weighted averages of 1976De23, 1977Ge12, 1979Ve03, 1980Ro22, 1980Yo05, 1981Ma09, 1990Me15 and 1993Ki18 computed by the Limitation of Statistical Weight method suggested in DDEP database, unless otherwise stated.
@ From α(K)exp (1967Mo12, normalized to α(K)exp=0.00275 for the 657.7γ), unless otherwise stated.
& If No value given it was assumed δ=1.00 for E2/M1, δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities δ=1.00 for E3/M2 and δ=0.10 for the other multipolarities.
a For absolute intensity per 100 decays, multiply by 0.9561 *9*.
b Multiply placed with undivided intensity.

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

^{110}Ag β^- decay (249.83 d) (continued)

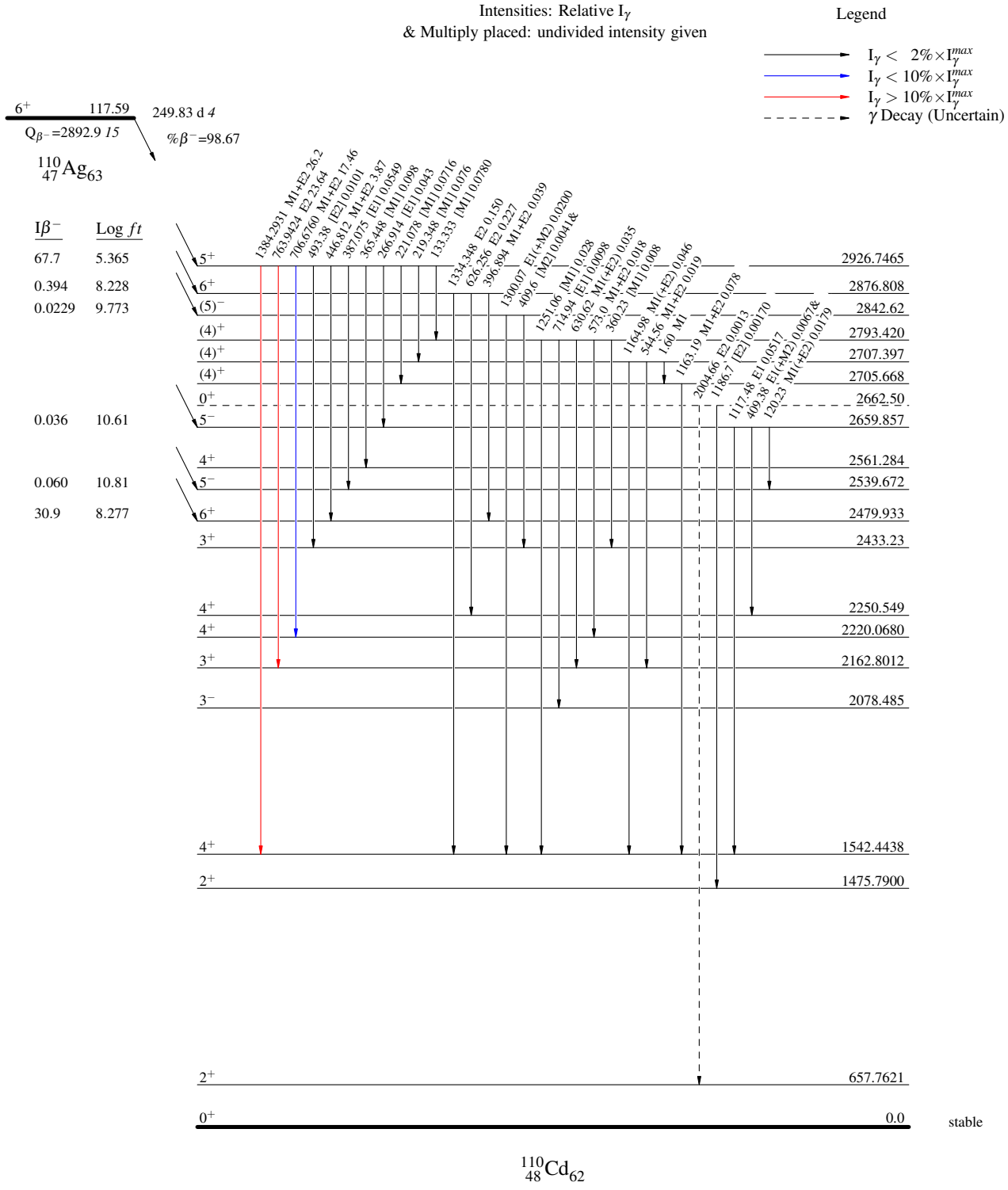
$\gamma(^{110}Cd)$ (continued)

[c] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

^{110}Ag β^- decay (249.83 d)

Decay Scheme

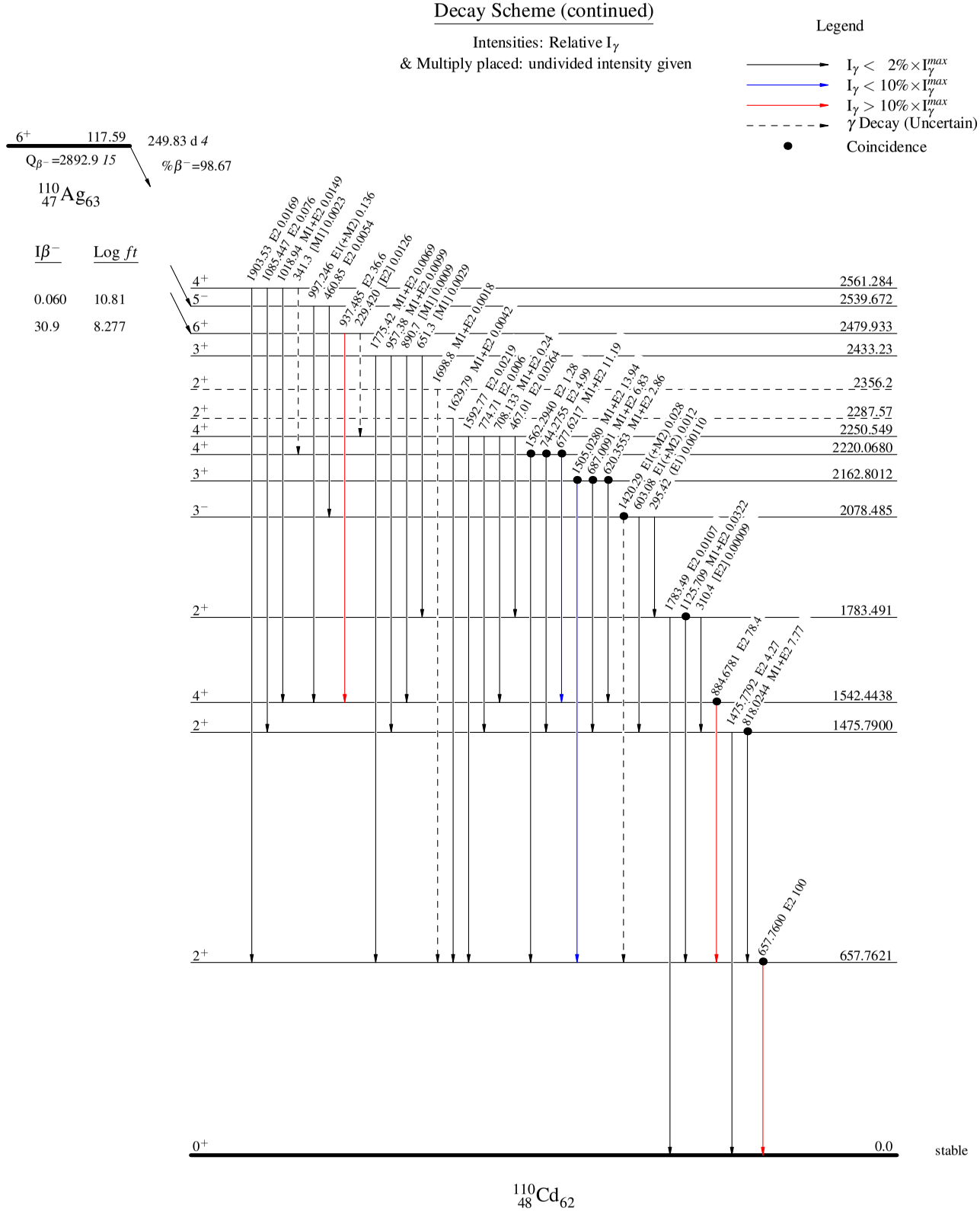
Intensities: Relative I_γ
& Multiply placed: undivided intensity given



^{110}Ag β^- decay (249.83 d)

Decay Scheme (continued)

Intensities: Relative I_γ
& Multiply placed: undivided intensity given



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