^{125}Cd β^- decay (0.68 s) 1989Hu03,1986Ho24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	J. Katakura	NDS 112, 495 (2011)	1-Jan-2010

Parent: ^{125}Cd: E=0.0; $J^\pi=(3/2^+)$; $T_{1/2}=0.68$ s *4*; $Q(\beta^-)=7.12\times10^3$ *6*; $\%\beta^-$ decay=100.0
Sources: U(n,F), E=fast, on-line mass (1989Hu03) ^{235}U(n,F), E=th; on-line mass (1986Ho24).
Measured: γ singles, $\gamma\gamma$ coin (1989Hu03,1986Ho24); $T_{1/2}$ (1989Hu03).
The decay scheme is that proposed by 1989Hu03. 1986Ho24 report decay only of the $(3/2^+)$, 0.65-s g.s.

^{125}In Levels

E(level)†	J^π‡	$T_{1/2}$‡	Comments
0.0	$9/2^+$	2.36 s *4*	$\%\beta^-=100$
360.12# *9*	$1/2^{(-)}$	12.2 s *2*	$\%\beta^-=100$ Additional information 1.
796.46 *10*	$(3/2^-)$		
1099.49 *3*	$(5/2^+)$		
1219.72 *10*	$(1/2,3/2,5/2^-)$		
1588.54 *14*			
1810.40 *13*			
2147.18 *10*	$(5/2^+)$		
2349.45 *14*	(1/2,3/2,5/2)		
2381.30 *11*	(1/2,3/2,5/2)		
2497.46 *11*	$(1/2^+,3/2^+)$		
2585.06 *14*	$(1/2^+,3/2^+,5/2^+)$		
2641.22 *16*	(1/2,3/2,5/2)		

† From a least-squares fit to Eγ's by evaluators.
‡ From Adopted Levels.
# From energy difference of g.s. transitions (1099γ, 2147γ and 2947γ) and those competing γ cascades to 796 level, with Eγ=436.25 for the transition from 796 to 360. However, this is a different value, 287 keV *31*, from $\beta\gamma$-coin experiments (1987Sp09).

β^- radiations

E(decay)	E(level)	Iβ^-†	Log *ft*	Comments
$(4.48\times10^3$ *6*)	2641.22	3.4 *6*	5.38 *9*	av Eβ=1945 *29*
$(4.53\times10^3$ *6*)	2585.06	9.4 *9*	4.96 *6*	av Eβ=1971 *29*
$(4.62\times10^3$ *6*)	2497.46	14.9 *12*	4.80 *5*	av Eβ=2013 *29* E(decay): 4357 *38* (1987Sp09).
$(4.74\times10^3$ *6*)	2381.30	9.3 *9*	5.05 *6*	av Eβ=2068 *29*
$(4.77\times10^3$ *6*)	2349.45	7.1 *7*	5.18 *6*	av Eβ=2083 *29*
$(4.97\times10^3$ *6*)	2147.18	23.0 *17*	4.75 *5*	av Eβ=2179 *29*
$(5.90\times10^3$ *6*)	1219.72	4.7 *7*	5.77 *8*	av Eβ=2620 *29*
$(6.02\times10^3$ *6*)	1099.49	24.5 *24*	5.09 *6*	av Eβ=2677 *29*
$(6.32\times10^3$ *6*)	796.46	<4	>6.0	av Eβ=2821 *29*
$(6.76\times10^3$ *6*)	360.12	<6.0	>5.9	av Eβ=3028 *29* Iβ^-: From assumption that log *ft*>5.9 from $(3/2^+)$ parent.

† Absolute intensity per 100 decays.

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$\gamma(^{125}In)$

Iγ normalization: Σ(I(γ+ce) to g.s. and 360 level)=97 *3*, assuming Iβ^-<6.0 to 360 level for expected log *ft*>5.9. No β^- transition, involving ΔJ=2 is expected to the g.s.

E_γ [†]	I_γ [†#]	E_i(level)	J_i^π	E_f	J_f^π	Comments
[x]267.88[‡] *25*	1.5 *5*					
[x]294.38[‡] *15*	1.4 *3*					
302.96 *15*	1.90 *16*	1099.49	(5/2$^+$)	796.46	(3/2$^-$)	
[x]361.10[‡] *25*	0.69 *19*					
369.23[‡] *15*	0.85 *18*	1588.54		1219.72	(1/2,3/2,5/2$^-$)	
[x]389.45[‡] *15*	2.3 *5*					
422.91 *10*	3.2 *4*	1219.72	(1/2,3/2,5/2$^-$)	796.46	(3/2$^-$)	
436.29 *3*	43 *3*	796.46	(3/2$^-$)	360.12	1/2$^{(-)}$	I$_\gamma$: 1986Ho24 and 1986Go10 report absolute intensity of this transition as 12% *2*. But their results seem to include both components of 0.65 s and 0.47 s decays.
[x]445.32[‡] *20*	1.4 *4*					
538.9[‡] *4*	0.33 *8*	2349.45	(1/2,3/2,5/2)	1810.40		
[x]551.46 *25*	0.51 *21*					
687.28[‡] *15*	3.0 *4*	2497.46	(1/2$^+$,3/2$^+$)	1810.40		
774.46 *20*	1.2 *3*	2585.06	(1/2$^+$,3/2$^+$,5/2$^+$)	1810.40		
792.43 *20*	3.3 *13*	1588.54		796.46	(3/2$^-$)	
[x]799.0 *4*	1.8 *4*					
859.71 *5*	6.79 *6*	1219.72	(1/2,3/2,5/2$^-$)	360.12	1/2$^{(-)}$	
996.78 *10*	4.8 *7*	2585.06	(1/2$^+$,3/2$^+$,5/2$^+$)	1588.54		E$_\gamma$: 996.0 (1986Ho24).
1013.97 *10*	3.9 *10*	1810.40		796.46	(3/2$^-$)	
1099.48 *3*	25.6 *21*	1099.49	(5/2$^+$)	0.0	9/2$^+$	
1249.75[‡] *25*	2.2 *4*	2349.45	(1/2,3/2,5/2)	1099.49	(5/2$^+$)	
[x]1256.7[‡] *5*	0.48 *22*					
[x]1275.15[‡] *5*	0.9 *4*					
1349.9 *5*	1.8 *5*	2147.18	(5/2$^+$)	796.46	(3/2$^-$)	
1364.64 *20*	2.76 *20*	2585.06	(1/2$^+$,3/2$^+$,5/2$^+$)	1219.72	(1/2,3/2,5/2$^-$)	
1421.67[‡] *15*	1.5 *4*	2641.22	(1/2,3/2,5/2)	1219.72	(1/2,3/2,5/2$^-$)	
1552.88 *15*	2.9 *4*	2349.45	(1/2,3/2,5/2)	796.46	(3/2$^-$)	
1584.83 *5*	8.3 *7*	2381.30	(1/2,3/2,5/2)	796.46	(3/2$^-$)	
1700.96 *5*	12.4 *9*	2497.46	(1/2$^+$,3/2$^+$)	796.46	(3/2$^-$)	
1788.38 *20*	0.95 *25*	2585.06	(1/2$^+$,3/2$^+$,5/2$^+$)	796.46	(3/2$^-$)	
1844.43 *20*	2.0 *4*	2641.22	(1/2,3/2,5/2)	796.46	(3/2$^-$)	E$_\gamma$: deexciting γ from 2641.7 level in 0.57-s decay in 1986Ho24.
1989.50 *15*	1.9 *3*	2349.45	(1/2,3/2,5/2)	360.12	1/2$^{(-)}$	
2021.16 *15*	1.3 *3*	2381.30	(1/2,3/2,5/2)	360.12	1/2$^{(-)}$	E$_\gamma$: 2020.4 (1986Ho24).
[x]2115.58[‡] *15*	2.5 *7*					
[x]2133.25[‡] *15*	3.9 *6*					
2147.19 *10*	21.9 *13*	2147.18	(5/2$^+$)	0.0	9/2$^+$	According to 1986Ho24 and 1989Hu03, 2147-keV γ-ray decays directly to the ground state, but 1987Sp09 suggest the γ-ray as that decaying from 2507-keV level from Q$_\beta$ measurement. The 2507-keV level, however, is not reported in 1989Hu03.
[x]2290.26 *15*	3.3 *4*					1986Ho24 placed the γ from 2290-keV level to ground state.

Continued on next page (footnotes at end of table)

^{125}Cd β^- decay (0.68 s) 1989Hu03,1986Ho24 (continued)

$\gamma(^{125}In)$ (continued)

E_γ [†]	I_γ [†#]	E_i(level)
[x]2380.24 *25*	1.6 *3*	
[x]2938.7[‡] *4*	0.76 *21*	

† From 1989Hu03, unless otherwise noted.
‡ Not given in 1986Ho24.
# For absolute intensity per 100 decays, multiply by 0.97 *4*.
x γ ray not placed in level scheme.

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Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays