^{127}Cs IT decay (55 μs) 1971Co05

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

Parent: ^{127}Cs: E=451.1 *6*; J^π=(11/2)$^-$; $T_{1/2}$=55 μs *3*; %IT decay=100.0

The decay scheme is that proposed by 1971Co05 on the bases of Eγ sums and transition intensity balance.

^{127}I(α,4nγ) E=53 MeV; semi γ, γγ coin, γ(t).

See also ^{127}Ba β^+ decay (1968Da09,1976Be11) for 66-, 138-keV level properties.

^{127}Cs Levels

E(level)†	Jπ‡	$T_{1/2}$	Comments
0.0	1/2$^+$	6.25 h *10*	
66.0 *5*	(5/2)$^+$		
138.6 *6*	(3/2)$^+$		
272.2 *5*	(7/2)$^+$		
451.1 *6*	(11/2)$^-$	55 μs *3*	$T_{1/2}$: from γ(t).

† From a least-squares fit to E_γ's.

‡ From Adopted Levels.

γ(^{127}Cs)

Iγ normalization: For IT(451.1 level)=100 decays.

Iγ normalization: I(γ+ce)(451.1γ)=100.

Iγ normalization: From Σ(I(γ+ce) of 178.8γ and 385.5γ)=100.

E_γ†	I_γ@	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	α#	Comments
65.9 *5*	11.4 *17*	66.0	(5/2)$^+$	0.0	1/2$^+$	E2	8.4 *3*	α(K)=3.99 *10*; α(L)=3.47 *14*; α(M)=0.76 *3*; α(N+..)=0.170 *7* α(N)=0.152 *6*; α(O)=0.0174 *7*; α(P)=0.0001043 *25*
72.9 *8*	5.6 *11*	138.6	(3/2)$^+$	66.0	(5/2)$^+$	(M1)	2.23 *8*	α(K)=1.91 *7*; α(L)=0.256 *9*; α(M)=0.0523 *19*; α(N+..)=0.0127 *5* α(N)=0.0111 *4*; α(O)=0.00154 *6*; α(P)=7.5×10^{-5} *3*
133.7 *3*	9.4 *6*	272.2	(7/2)$^+$	138.6	(3/2)$^+$	(E2)	0.670 *11*	α(K)=0.483 *8*; α(L)=0.148 *3*; α(M)=0.0317 *6*; α(N+..)=0.00725 *13* α(N)=0.00646 *11*; α(O)=0.000779 *14*; α(P)=1.421×10^{-5} *23*
139.0 *10*	2.4 *7*	138.6	(3/2)$^+$	0.0	1/2$^+$	(M1)	0.356 *9*	α(K)=0.305 *8*; α(L)=0.0404 *10*; α(M)=0.00827 *21*; α(N+..)=0.00200 *5* α(N)=0.00175 *5*; α(O)=0.000243 *6*; α(P)=1.20×10^{-5} *3*
178.8 *3*	42.1 *17*	451.1	(11/2)$^-$	272.2	(7/2)$^+$	(M2)	1.108	B(M2)(W.u.)=0.051 *5* α(K)=0.909 *14*; α(L)=0.1580 *25*; α(M)=0.0333 *6*; α(N+..)=0.00805 *13* α(N)=0.00705 *11*; α(O)=0.000963 *15*; α(P)=4.37×10^{-5} *7*
206.0 *3*	58.5 *24*	272.2	(7/2)$^+$	66.0	(5/2)$^+$	(M1)	0.1207	α(K)=0.1037 *15*; α(L)=0.01360 *20*; α(M)=0.00278 *4*; α(N+..)=0.000674 *10* α(N)=0.000588 *9*; α(O)=8.20×10^{-5} *12*; α(P)=4.06×10^{-6} *6*

Continued on next page (footnotes at end of table)

^{127}Cs IT decay (55 μs) 1971Co05 (continued)

γ(^{127}Cs) (continued)

E_γ †	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	Mult. ‡	α #	Comments
385.5 *5*	10.0 *10*	451.1	(11/2)$^-$	66.0	(5/2)$^+$	(E3)	0.0652	B(E3)(W.u.)=1.82 *22* α(K)=0.0496 *8*; α(L)=0.01233 *19*; α(M)=0.00264 *4*; α(N+..)=0.000614 *10* α(N)=0.000544 *9*; α(O)=6.82×10^{-5} *11*; α(P)=1.77×10^{-6} *3* Additional information 1.

† From 1971Co05.
‡ Proposed by 1971Co05 on the basis of transition intensity.
# Theoretical conversion coefficients are calculated using BrIcc code for the multipolarity indicated.
@ Absolute intensity per 100 decays.

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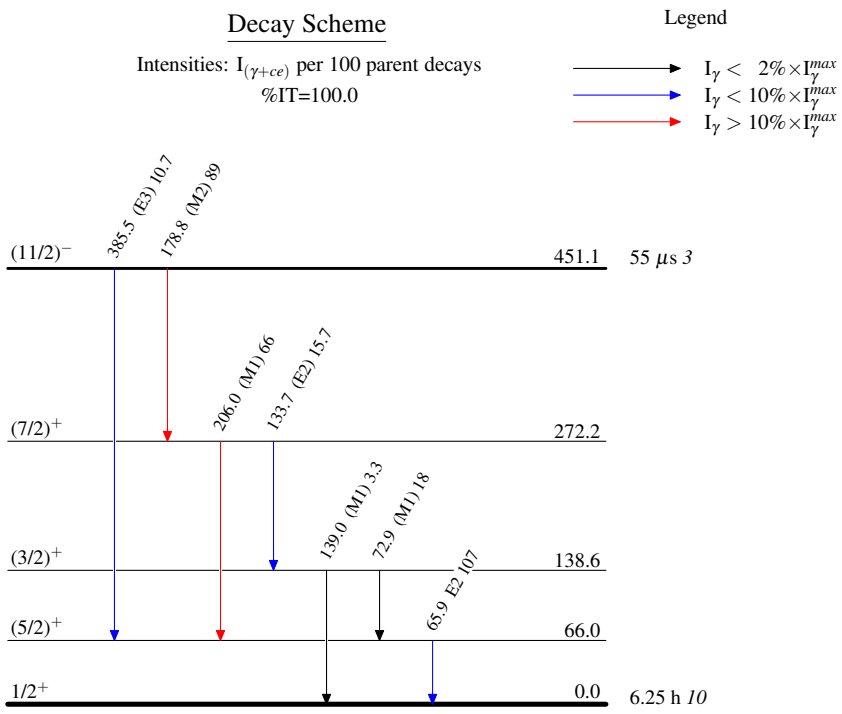
Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
%IT=100.0



$^{127}_{55}Cs_{72}$