^{183}Pt ε decay (43 s) 1979Vi02,2000Ro41

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 134, 149 (2016)	15-Apr-2015

Parent: ^{183}Pt: E=34.74 *7*; $J^{\pi}=7/2^{-}$; $T_{1/2}$=43 s *5*; Q(ε)=4430 *30*; %ε+%$β^+$ decay=96.9 *8*

1979Vi02: ^{183}Pt from decay of ^{183}Au or ^{183}Hg produced In 190-MeV ^{14}N bombardment of ^{180}W (enriched to 92%); He gas-jet recoil transport, mass separation;Ge(Li) detector; measured Eγ, Iγ, γγ coin.

Total energy release for this decay scheme is 3.18×10^3 *16* cf. QxBR=4326 *46*.

The level scheme is supported by coincidence measurements; however, the data are too sparse to reliably calculate β feeding to the g.s., 16-keV or 329-keV levels, all of which are allowed transitions.

^{183}Ir Levels

E(level)†	J^{π}‡	Comments
0.0	$5/2^{-}$	
15.8 *3*	$9/2^{-}$	
328.97 *24*	$7/2^{-}$	
645.35 *24*	$9/2^{-}$	J^{π}: low log *ft* (≤4.6) typical of unhindered allowed decay In this mass region (between ν 7/2[514] and π 9/2[514] states).

† From least-squares fit to Eγ, allowing 1 keV uncertainty in Eγ data for which authors did not state an uncertainty.

‡ From Adopted Levels.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(3.82×10^3 *3*)	645.35	≥14	≥36	≤4.6	≥50	av Eβ=1262 *14*; εK=0.593 *6*; εL=0.1005 *9*; εM+=0.0317 *3* Iε: estimated by 1979Vi02 from γ spectra of α=183 mass separated activities measured In the range Eγ=20-1750 keV.

† Absolute intensity per 100 decays.

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γ(^{183}Ir)

Iγ normalization: if Σ (I(γ+ce) from 645 level)≥50%.

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	δ	α[†]	$I_{(\gamma+ce)}$[‡]	Comments
16.0		15.8	9/2−	0.0	5/2−	E2		2.98×10^4	≥127	ce(L)/(γ+ce)=0.756 *8*; ce(M)/(γ+ce)=0.191 *4* ce(N)/(γ+ce)=0.0459 *9*; ce(O)/(γ+ce)=0.00691 *14*; ce(P)/(γ+ce)=5.56×10^{-6} *11* α(L)=2.25×10^4 *4*; α(M)=5.70×10^3 *8*; α(N)=1369 *20*; α(O)=206 *3*; α(P)=0.1659 *24* E_γ: 2000Ro41; uncertainty unstated by authors. $I_{(\gamma+ce)}$: based on Σ (I(γ+ce) to 16 level)=135 *8*. Mult.: from L2:L3:M1:M2:M3:(N1+N2+N3)=3900 *60*:5000 *60*:<77:990 *200*: 1200 *230*:510 *100* (2000Ro41).
[x]92.7						M1(+E2)	≤0.44	7.51 *15*		α(K)=5.8 *5*; α(L)=1.3 *3*; α(M)=0.31 *7* α(N)=0.075 *17*; α(O)=0.0127 *24*; α(P)=0.00073 *6* Mult.: from α(L1)exp=1.2 *4* (2000Ro41).
[x]118.5						E2(+M1)	≥2.6	2.43 *10*		α(K)=0.74 *17*; α(L)=1.27 *6*; α(M)=0.326 *15* α(N)=0.079 *4*; α(O)=0.0121 *6*; α(P)=8.1×10^{-5} *21* Mult.: from α(K)exp=0.7 *2* (2000Ro41). possibly the known 119 to g.s. transition.
313.2 *3*	28.0 *20*	328.97	7/2−	15.8	9/2−	[M1,E2]		0.17 *9*		α(K)=0.13 *8*; α(L)=0.028 *6*; α(M)=0.0066 *11* α(N)=0.0016 *3*; α(O)=0.00028 *6*; α(P)=1.6×10^{-5} *10* I_γ: after removal by authors of contribution from 312γ(^{183}Au) contaminant.
316.4 *3*	53 *4*	645.35	9/2−	328.97	7/2−	[M1,E2]		0.16 *9*		α(K)=0.13 *8*; α(L)=0.027 *6*; α(M)=0.0064 *11* α(N)=0.0016 *3*; α(O)=0.00027 *6*; α(P)=1.5×10^{-5} *10*
329.0 *3*	36.0 *25*	328.97	7/2−	0.0	5/2−	[M1+E2]		0.15 *8*		α(K)=0.11 *7*; α(L)=0.024 *6*; α(M)=0.0057 *11* α(N)=0.0014 *3*; α(O)=0.00024 *6*; α(P)=1.4×10^{-5} *9*
629.6 *3*	100 *7*	645.35	9/2−	15.8	9/2−	[M1,E2]		0.027 *13*		α(K)=0.022 *11*; α(L)=0.0038 *14*; α(M)=0.0009 *4* α(N)=0.00021 *8*; α(O)=3.8×10^{-5} *15*; α(P)=2.6×10^{-6} *14*
645.3 *3*	23.0 *16*	645.35	9/2−	0.0	5/2−	[E2]		0.01307		α(K)=0.01017 *15*; α(L)=0.00222 *4*; α(M)=0.000527 *8* α(N)=0.0001288 *19*; α(O)=2.18×10^{-5} *3*; α(P)=1.158×10^{-6} *17*

[†] Additional information 1.
[‡] For absolute intensity per 100 decays, multiply by ≥0.259.
[x] γ ray not placed in level scheme.

$^{183}_{77}Ir_{106}$-2

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Decay Scheme

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