^{253}Cf β^- decay 1982Ah01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. Browne, J. K. Tuli	NDS 114, 1041 (2013)	1-Mar-2012

Parent: ^{253}Cf: E=0.0; $J^\pi=(7/2^+)$; $T_{1/2}$=17.81 d *8*; Q(β^-)=287 *6*; %β^- decay=99.69 *4*

^{253}Es Levels

E(level)	J^π †
0.0	$7/2^+$
46.4 *2*	$(9/2^+)$

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^- †	Log *ft*	Comments
(241 *6*)	46.4	≈50	≈7.0	av Eβ=65.2 *18* E(decay): 0.17 MeV, (mag spect, quoted in 1958St50).
(287 *6*)	0.0	≈50	≈7.2	av Eβ=78.8 *18* E(decay): 0.27 MeV, (mag spect, quoted in 1958St50). Iβ^-: from log *ft*≈7.2 (from configuration=(π 7/2[633]) to configuration=(ν 7/2[613]) transition in ^{249}Es ε decay).

† Absolute intensity per 100 decays.

$\gamma(^{253}Es)$

No γ observed, Iγ<1% for Eγ 100 to 700 keV (quoted in 1958St50).

E$_\gamma$	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	α †	Comments
46.4‡ *1*	46.4	$(9/2^+)$	0.0	$7/2^+$	[M1,E2]	$5.\times10^2$ *5*	α(L)=4.E2 3; α(M)=1.0×10^2 *9*; α(N+..)=4.E1 4 α(N)=29 *25*; α(O)=7 *7*; α(P)=1.2 *10*; α(Q)=0.009 *5* Tentatively assigned gamma (1982Ah01). E$_\gamma$: γ observed in ^{257}Fm α decay (1982Ah01). γ exhibits growth during decay which suggests that it belongs in the decay of ^{257}Fm daughter, ^{253}Cf. ^{253}Cf decays mainly by β^- (%β^-=99.69 *4*); ^{253}Cf α decay does not show a γ of this energy.

† Additional information 1.
‡ Placement of transition in the level scheme is uncertain.

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Decay Scheme