^{183}Pb α decay (415 ms) 2002Je09,1989To01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 110, 265 (2009)	15-Nov-2008

Parent: ^{183}Pb: E=97 *9*; J^π=(13/2$^+$); $T_{1/2}$=415 ms *20*; Q(α)=6928 *7*; %α decay≈100.0

^{183}Pb-%α decay: α decay only has been observed (2002Je09).

Others: 1980Sc09, 1984ScZQ, 1986Ke03, 1987To09.

2002Je09: source from ^{144}Sm(^{42}Ca,3n), E=200 MeV; RITU gas-filled separator with Si strip detector surrounded by 3 NORDBALL- and 2 TESSA-type Ge detectors At focal plane; JUROSPHERE II array (7 TESSA-type, 5 NORDBALL, 15 EUROGAM-II Ge detectors) for γ detection At target position; measured Eα, Iα, α(t), Eγ, Iγ, prompt and delayed γ-α coin, parent-daughter α correlations, I(K x ray).

E(^{183}Pb)=97 *9* based on Eα=6704 *6* from this level to 171 level In ^{179}Hg (weighted average of 6718 *10* (1987To09), 6712 *10* (1989To01) and 6698 *5* (2002Je09)) and Eα=6777 *6* from ^{183}Pb g.s. to ^{179}Hg g.s. (weighted average of 6798 *25* (1980Sc09), 6781 *15* (1989To01), 6775 *7* (2002Je09)).

$T_{1/2}$(183PB)=415 ms *20* (2002Je09). Others: 1987To09 (300 ms *80*, 6718α); 1984ScZQ.

^{179}Hg Levels

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$	Comments
0.0	(7/2$^-$)		
60.6 *2*	(9/2$^-$)		
171.4 *4*	(13/2$^+$)	6.4 μs *9*	E(level): 168 *9* from difference In measured Eα. $T_{1/2}$: from α-γ coin (2002Je09).

† From measured Eγ.
‡ From Adopted Levels.

α radiations

Eα	E(level)	Iα[‡#]	HF[†]	Comments
6704 *6*	171.4	97.6 *5*	≈1.2	Eα: weighted average of 6718 *10* (1987To09), 6712 *10* (1989To01), 6698 *5* (2002Je09). Other values: 6715 *20* (1980Sc09), 6720 (1986Ke03). Iα: based on weighted average of Iα/Iα(total)=0.966 *13* (1989To01) and 0.978 *6* (2002Je09). other: 0.986 (1986Ke03).
6868 *7*	0.0	2.5 *5*	≈191	Eα: weighted average of 6873 *10* (1986Ke03), 6874 *15* (1989To01), 6860 *11* (2002Je09). Iα: based on weighted average of Iα/Iα(total)=0.034 *13* (1989To01) and 0.023 *6* (2002Je09). other: 0.014 (1986Ke03).

† If r_0=1.507 (the average of r_0(^{178}Hg)=1.51 *5* and r_0(^{180}Hg)=1.505 *13* In 1998Ak04), assuming Q(α)=6928 *6*.
‡ Relative Iα normalized so Iα(total)=100 for this decay.
# For absolute intensity per 100 decays, multiply by ≈1.0.

γ(^{179}Hg)

E$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	δ	α[#]	Comments
60.6 *2*	60.6	(9/2$^-$)	0.0	(7/2$^-$)	M1(+E2)	≤0.054	6.23 *13*	α(L)=4.78 *10*; α(M)=1.116 *24*; α(N+..)=0.337 *7* α(N)=0.280 *6*; α(O)=0.0528 *11*; α(P)=0.00399 *7* α(exp)=5.6 *7* (2002Je09) Mult.,δ: from α(exp).
110.8 *3*	171.4	(13/2$^+$)	60.6	(9/2$^-$)	M2		46.0 *8*	α(K)=30.7 *6*; α(L)=11.42 *21*; α(M)=2.91 *6*; α(N+..)=0.887 *16*

Continued on next page (footnotes at end of table)

^{183}Pb α decay (415 ms) 2002Je09,1989To01 (continued)

$\gamma(^{179}Hg)$ (continued)

E_γ [†]	E_i(level)	Comments
		α(N)=0.741 *14*; α(O)=0.1369 *25*; α(P)=0.00883 *16* α(K)exp=43 *10* (2002Je09); α(exp)=47 *9* (2002Je09)

[†] From 2002Je09.
[‡] From α(exp) (deduced from intensity balance) and/or α(K)exp (from observed I(K x ray)) In 2002Je09.
[#] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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Decay Scheme