Adopted Levels, Gammas

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Yu. Khazov, A. A. Rodionov and S. Sakharov, Balraj Singh	NDS 104,497 (2005)	10-Feb-2005

Q(β^-)=3575 *4*; S(n)=6332 *5*; S(p)=7781 *4*; Q(α)=−3498 *20* 2012Wa38
Note: Current evaluation has used the following Q record 3581 6 *6327* 6 *7779* 6 −3516 *26* 2003Au03.
Spin, moments and hyperfine-structure measurements: 1979Oo01, 1974Ja22, 1973De42, 1969Si06, 1962Wh11, 1960Wh06, 1960Ja12.
^{252}Cf(SF decay): prompt γ's: 1972Ho08, 1971Ho29, 1969WiZX: only one γ ray at 228.5 reported (most likely from 279 level).
^{238}U(α,F): 2003Na35.
Additional information 1.

^{132}I Levels

Cross Reference (XREF) Flags

A ^{132}Te β^- decay (3.204 d)
B ^{132}I IT decay (1.387 h)

E(level)	J^π	$T_{1/2}$	XREF	Comments
0.0	4^+	2.295 h *13*	AB	%β^-=100 μ=3.088 *7* (1960Wh06,1962Wh11,1989Ra17) Q=0.08 *1* (1960Wh06,1989Ra17) J^π: atomic beam (1960Ga12,1959Sh64); E2-M1 γ cascade from 1^+. $T_{1/2}$: unweighted average of 2.259 h *8* (1954Em27), 2.30 h *5* (1955Wa35), 2.292 h *7* (1958Ke26), 2.34 h *2* (1965An05), 2.2846 h *4* (1966Ma56). Others: 1965Si17, 1962Wi14, 1957Aa04, 1939Ab02, 1939Ha13. Additional information 2. μ,Q: atomic beam (1960Wh06,1962Wh11); signs of μ and Q are opposite. Q recalculated by 2001StZZ based on revised Q=0.689 *15* (2000Ha64) for ^{127}I g.s.
22? *11*	(5^+)		B	J^π: E3 γ from (8^-); systematics.
49.72 *1*	3^+	7.14 ns *14*	A	Q=0.20 *7* (1979Oo01,1989Ra17) J^π: M1 γ to 4^+; E2 γ from 1^+. $T_{1/2}$: $\gamma\gamma$(t) (1981Yo02). Others: 2.94 ns *11* (1999Da03), 0.93 ns *4* (1969Ho42), 0.96 ns *4* (1966Go23). μ: g=+0.74 *10* was obtained using IPAC (1969Si06) and $T_{1/2}$=0.951 ns *22*, which gives μ=+2.24 *30* (also adopted by 1989Ra17). However, $\gamma\gamma$(t) and $\gamma\gamma(\theta$,t) measurements of 1981Yo02 cast doubt on this value, since 1981Yo02 obtain $T_{1/2}$=7.14 ns *14* and perturbation coefficient of 0.41 *9* for the 228-49 cascade as opposed to unperturbed correlation assumed by 1969Si06. Q: from IPAC (1979Oo01). Q recalculated by 2001StZZ based on revised Q=0.689 *15* (2000Ha64) for ^{127}I g.s.
120 *20*	(8^-)	1.387 h *15*	B	%β^-=14 *2*; %IT=86 *2* (1974Di03) E(level): from difference in Q(β^-) values for ^{132}I isomers. J^π: from systematics of 8^- levels in neighboring nuclei. $T_{1/2}$: weighted average of 1.385 h *17* (1976La14) and 1.393 h *28* (1974Di03,1973Di14). %IT: obtained by 1974Di03 from relative intensities of pairs of γ-rays from decay of only isomer and from decay of both isomer and ground state.
161.52 *7*	2^+	3.57 ns *7*	A	J^π: M1+E2 γ from 1^+; M1+E2 γ to 3^+. $T_{1/2}$: from 1981Yo02. Other: 0.55 ns *4* (1999Da03), although, slope in authors' figure 1b seems to correspond to 1.14 ns. $T_{1/2}$: from ^{132}Te β^- decay.
277.86 *6*	1^+	1.42 ns *2*	A	μ=+1.88 *11* (1979Oo01,1989Ra17) Q=(−)0.148 *6* (1979Oo01,1989Ra17) J^π: log *ft*=4.7 from 0^+. $T_{1/2}$: from 1981Yo02. Others: 1.42 ns *5* (1966Go23), 1.41 ns *7* (1969Ho42).

Continued on next page (footnotes at end of table)

Adopted Levels, Gammas (continued)

^{132}I Levels (continued)

E(level)	J^π	$T_{1/2}$	XREF	Comments
				μ,Q: TDPAC (1979Oo01). Q recalculated by 2001StZZ based on revised Q=0.689 *15* (2000Ha64) for ^{127}I.

$\gamma(^{132}I)$

E_i(level)	J_i^π	E_γ	I_γ[†]	E_f	J_f^π	Mult.	δ	α[‡]	Comments
22?	(5^+)	(22 *11*)		0.0	4^+				
49.72	3^+	49.72 *1*	100	0.0	4^+	M1		5.71	B(M1)(W.u.)=0.00374 *12* α(K)=4.90 *15*; α(L)=0.645 *20*; α(M)=0.129 *4*
120	(8^-)	98.0 *10*	100	22?	(5^+)	E3		21.6	B(E3)(W.u.)=1.00×10^{-4} *8* α(K)=6.97 *21*; α(L)=11.5 *4*; α(M)=2.54 *8*; α(N+..)=0.598 *18* Additional information 3.
161.52	2^+	111.76 *8*	100	49.72	3^+	M1+E2	0.58 *10*	0.71 *5*	B(M1)(W.u.)=0.00193 *19*; B(E2)(W.u.)=34 *9* α(K)=0.57 *2*; α(L)=0.116 *14*; α(M)=0.024 *3*; α(N+..)=0.0056 *7*
277.86	1^+	116.30 *8*	2.23 *6*	161.52	2^+	M1+E2	0.60 *9*	0.64 *4*	B(M1)(W.u.)=0.000142 *14*; B(E2)(W.u.)=2.4 *6* α(K)=0.509 *19*; α(L)=0.102 *11*; α(M)=0.0210 *22*; α(N+..)=0.0050 *5*
		228.16 *6*	100 *2*	49.72	3^+	E2		0.100	B(E2)(W.u.)=14.2 *5* α(K)=0.0807 *25*; α(L)=0.0152 *5*; α(M)=0.00311 *10*; α(N+..)=0.00073 *2*

[†] Relative photon branching from each level.

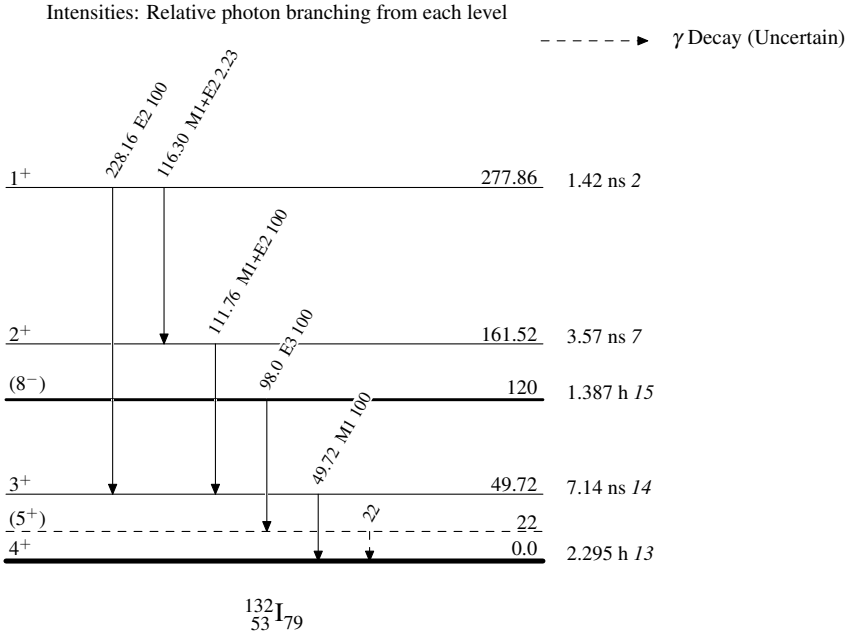
[‡] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

Adopted Levels, Gammas

Legend

Level Scheme

Intensities: Relative photon branching from each level



$^{132}_{53}I_{79}$