^{132}Cs β^- decay (6.479 d)   1970Qa03,1990Da09

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

Parent: ^{132}Cs: E=0.0; J^π=2$^+$; $T_{1/2}$=6.479 d 7; Q(β^-)=1278.9 22; %β^- decay=1.87 9

1962Ro07: measured $\gamma\gamma(\theta)$.
1968Ca12: measured Eγ, Iγ.
1970Qa03: measured Eγ, Iγ, $\gamma\gamma$ coincidences.
1971Ta21: measured $\gamma\gamma(\theta)$.
1975WiZJ: measured Eγ, Iγ.
1990Da09: measured Eγ, Iγ, $\gamma\gamma$ coincidences, $\gamma\gamma(\theta)$.
1990Me15: measured Eγ, Iγ.
$T_{1/2}$(^{132}Cs isotope): 1973Du08, 1973Gi06, 1971Ru11, 1964De18.
Others: 1961Jh03, 1963Ta05, 1965Jo06, 1967Fr08, 1973GoXT.
The decay scheme is based on energy sums and the coincidence data, taking into account data for ^{132}La decay.

^{132}Ba Levels

E(level)	$J^{\pi\dagger}$
0.0	0$^+$
464.497 13	2$^+$
1031.661 10	2$^+$
1127.629 24	4$^+$

† From Adopted Levels.

β^- radiations

E(decay)	E(level)	I$\beta^{-\dagger}$	Log ft	Comments
(247.2 22)	1031.661	0.36 2	7.69 3	av Eβ=69.05 68
(814.4 22)	464.497	1.51 11	8.81 4	av Eβ=269.92 86

† Absolute intensity per 100 decays.

γ(^{132}Ba)

Iγ normalization: From Σ(I(γ+ce) of γ's to g.s.)=100, and %β^-=1.87 9.

E$_\gamma^\dagger$	I$_\gamma^{\ddagger\#}$	E$_i$(level)	J_i^π	E$_f$	J_f^π	Mult.	δ	$\alpha^@$	Comments
464.466 25	1.62 4	464.497	2$^+$	0.0	0$^+$	E2		0.0121	α(K)=0.0101 3; α(L)=0.00156 5; α(M)=0.00032 1
567.16 1	0.229 8	1031.661	2$^+$	464.497	2$^+$	M1+E2	+20 8	0.00712 2	α=0.00712 2; α(K)=0.00597 2; α(L)=0.00087 A_2=−0.113 16; A_4=+0.33 3 (1990Da09) δ: from $\gamma\gamma(\theta)$ (1990Da09). Others: +9 +7−3 (1971Ta21), >14 (1962Ro07). Additional information 1.
663.130 20	0.003	1127.629	4$^+$	464.497	2$^+$				E$_\gamma$: Eγ, RI from 1975WiZJ.
1031.66 1	0.132 5	1031.661	2$^+$	0.0	0$^+$				

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<u>^{132}Cs β^- decay (6.479 d)   **1970Qa03,1990Da09 (continued)**</u>

<u>$\gamma(^{132}$Ba) (continued)</u>

† From 1990Me15, except as noted. Precise values are also available from 1990Da09, but seem lower by≈0.3 keV above 500 keV.
‡ Weighted average of values from 1968Ca12, 1970Qa03, 1990Da09 and 1990Me15; relative to Iγ(667.7)=100 in ^{132}Xe.
# For absolute intensity per 100 decays, multiply by 0.9752 *9*.
@ 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

Intensities: I_γ per 100 parent decays

Legend

→ $I_\gamma < 2\% \times I_\gamma^{max}$
→ $I_\gamma < 10\% \times I_\gamma^{max}$
→ $I_\gamma > 10\% \times I_\gamma^{max}$
● Coincidence

2^+ 0.0   6.479 d 7

$Q_{\beta^-}=1278.9$ 22 $\%\beta^-=1.87$

$_{55}^{132}$Cs$_{77}$

$I\beta^-$ Log ft

663.130 0.002926
1031.66 0.129
567.16 M1+E2 0.223

4^+ 1127.629
0.36   7.69 2^+ 1031.661

464.466 E2 1.58

1.51   8.81 2^+ 464.497

0^+ 0.0

$_{56}^{132}$Ba$_{76}$