^{85}Kr β^- decay (4.480 h) 1980Me06,1970Wo08

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 116, 1 (2014)	31-Dec-2013

Parent: ^{85}Kr: E=304.86 *7*; $J^\pi=1/2^-$; $T_{1/2}$=4.480 h *8*; Q(β^-)=687.0 *20*; %β^- decay=78.8 *5*
^{85}Kr-Q(β^-): From 2012Wa38.
^{85}Kr-J^π,$T_{1/2}$: From ^{85}Kr Adopted Levels.
^{85}Kr-%β^- decay: From 100−(Ti(304.87γ)/[Ti(304.87γ+Ti(151γ+281γ+731γ)); 304.87γ is isomeric transition in ^{85}Kr IT decay.
Additional information 1.
1980Me06: Radiochemical separation from fission products, Ge(Li) detectors, measured γ spectra.
1970Wo08: Measured Eγ, Iγ, $T_{1/2}$, Iβ, I(ce), Eβ, Q. Deduced ICC, multipolarities. Ge(Li) detector.
All data from 1980Me06 unless otherwise noted.
Others: 1972McZC, 1960Sp02, 1959Bu99, 1955Th01, 1954Be36, 1952Be55, Bergstrom and Thulin: Phys Rev 79, 537 (1950).

^{85}Rb Levels

E(level)[†]	J^π[‡]	$T_{1/2}$	Comments
0.0	$5/2^-$	stable	
151.195 *6*	$3/2^-$	0.79 ns *8*	$T_{1/2}$: $\gamma\gamma$(t) (1959Bu99). Other: 0.55 ns *21* (1961Sp03,1960Sp02).
281.003 *19*	$1/2^-$		
731.88 *7*	$3/2^-$		

† From least-square fits to Eγ data.
‡ From Adopted Levels.

β^- radiations

E(decay)	E(level)	Iβ^-[†]	Log *ft*	Comments
(260.0 *20*)	731.88	0.019 *5*	7.1 *1*	av Eβ=74.61 *65*
(710.9 *20*)	281.003	0.311 *10*	7.39 *2*	av Eβ=238.22 *79*
840 *2*	151.195	78.5 *10*	5.250 *8*	av Eβ=290.34 *82*
				E(decay): from 1970Wo08: magnetic spectrometer, proportional counters, Fermi-Kurie analysis of β spectrum.

† Absolute intensity per 100 decays.

γ(^{85}Rb)

Iγ normalization: Ti(151γ+281γ+731γ)=100.

Eγ	Iγ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]	α[#]	Comments
129.81 *2*	0.40 *1*	281.003	$1/2^-$	151.195	$3/2^-$	(M1)		0.0710	α(K)=0.0627 *9*; α(L)=0.00704 *10*; α(M)=0.001165 *17*; α(N)=0.0001316 *19*
151.195 *6*	100.0 *11*	151.195	$3/2^-$	0.0	$5/2^-$	M1+E2	0.072 *4*	0.0481 *7*	%Iγ=75.2 *5* α(K)=0.0424 *6*; α(L)=0.00477 *7*; α(M)=0.000788 *12*; α(N)=8.89×10^{-5} *13*; α(O)=3.77×10^{-6} *6* α(exp)=0.0455 *9*; α(K)exp=0.0400 *8*;

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$\gamma(^{85}Rb)$ (continued)

E_γ	I_γ[‡]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	α[#]	Comments
								α(L)exp=0.0045 *2*; α(M)exp=0.0010 *1* (1970Wo08) E_γ: from 1979Bo26, curved-crystal spectrometer. α(exp),α(K)exp,α(L)exp,α(M)exp: determined by β-γ coincidence spectrum method (1970Wo08). I_γ: the uncertainty of 0.5 represents statistical and fitting uncertainty only (1980Me06); evaluators include 1% additional systematic uncertainty in quadrature.
281.01 *4*	≤0.001	281.003	1/2$^-$	0.0	5/2$^-$	(E2)	0.0227	α(K)=0.0199 *3*; α(L)=0.00236 *4*; α(M)=0.000389 *6*; α(N)=4.28×10^{-5} *6*
451.0 *1*	0.015 *5*	731.88	3/2$^-$	281.003	1/2$^-$			
580.6 *1*	≤0.001	731.88	3/2$^-$	151.195	3/2$^-$			
731.6 *3*	0.010 *4*	731.88	3/2$^-$	0.0	5/2$^-$			

[†] From Adopted Gammas.

[‡] For absolute intensity per 100 decays, multiply by 0.752 *5*.

[#] 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: $I_{(\gamma+ce)}$ per 100 parent decays