^{81}Kr ε decay (2.29×10^5 y) 1988Ax01

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Coral M. Baglin	NDS 109, 2257 (2008)	15-Aug-2008

Parent: ^{81}Kr: E=0; $J^\pi=7/2^+$; $T_{1/2}=2.29\times10^5$ y *11*; Q(ε)=280.8 *5*; %ε decay=100.0

Others: 1974Ch40, 1972ScYQ.

1988Ax01: ^{81}Kr from ^{81}Rb (4.576 h) decay; Ge, NaI and proportional counters; measured I(276γ), I(Br x rays), γ-x ray coin, M/L capture ratio.

1972ScYQ, 1974Ch11: ^{81}Kr from ^{80}Kr(n,γ), enriched target. Measured withGe(Li) and Si(Li) (1972ScYQ), or proportional counter (1974Ch40).

^{81}Br Levels

E(level)†	Jπ‡
0	3/2−
275.991 *11*	5/2−

† From Eγ.
‡ From Adopted Levels.

ε radiations

E(decay)	E(level)	Iε†	Log *ft*	Comments
(4.8 *5*)	275.991	0.30 *2*	9.35 *15*	εL=0.69 *3*; εM+=0.31 *3* Iε: from measured I(276γ)/I(Br K x ray)=0.30 *2* (1988Ax01). E(decay): from measured $\varepsilon_M/\varepsilon_L$=0.42 *5*, 1988Ax01 deduce E=4.7 *5* assuming capture ratios from allowed decay theory are applicable to this highly hindered first forbidden nonunique transition.
(280.8 *5*)	0	99.70 *2*	11.014[1u] *22*	εK=0.84731 *9*; εL=0.12712 *8*; εM+=0.02557 *2* Iε: 100% minus branch to 276 level (0.30% 2). E(decay): measured εL(exp)/εK(exp)=0.146 *5* (1974Ch40); this corresponds to the theoretical ratio for Q(ε)=305 *+35−29*.

† Absolute intensity per 100 decays.

γ(^{81}Br)

Iγ normalization: 0.00298 *20* from measured ε branching to 276 level=0.30% 2 (1988Ax01) and adopted α(276γ). This conflicts with Iγ normalization=0.036 *4* implied by measured I(276γ)/I(K x-ray, Br)=0.068 *8* (1972ScYQ), assuming fluorescence yield (Br)=0.618 *19*, K-capture to total-capture ratio=0.847, α=0.0112.

Eγ†	Iγ‡	Ei(level)	J_i^π	E_f	J_f^π	Mult.	δ	α#	Comments
275.990 *11*	100	275.991	5/2−	0	3/2−	M1+E2	−0.10 *3*	0.00816 *15*	α(K)=0.00724 *13*; α(L)=0.000781 *15*; α(M)=0.0001242 *23*; α(N+..)=1.158×10^{-5} *21* α(N)=1.158×10^{-5} *21*

† From 1972ScYQ.
‡ For absolute intensity per 100 decays, multiply by 0.00298 *20*.

Continued on next page (footnotes at end of table)

^{81}Kr ε decay (2.29×10^5 y) 1988Ax01 (continued)

$\gamma(^{81}Br)$ (continued)

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.

^{81}Kr ε decay (2.29×10^5 y) 1988Ax01

Decay Scheme

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays