^{81}Sr ε decay 1980Ho28

History

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

Parent: ^{81}Sr: E=0; J$^{\pi}$=1/2^{-}; $T_{1/2}$=22.3 min *4*; Q(ε)=3927 *9*; %ε+%β^{+} decay=100.0

Others: 1982Th03, 1981FrZY, 1977LiZP, 1973Br32, 1971Do01.

1973Br32: Ge(Li) and Ge(Li)-NaI detectors, chemically separated source; measured Eγ, Iγ, $\gamma\gamma$ coin, γ-$\gamma^{\pm}$ coin, $\gamma\gamma$(t), Eβ, β^{+}-γ coin.

1980Ho28: chemically separated source; measured Eγ, Iγ, $T_{1/2}$; low-energy photon spectrometer (FWHM=550 eV at 122 keV) and Ge(Li) (FWHM=2.5 keV at 1.33 MeV).

1981FrZY: single and coincidence spectra, measured with Ge(Li) (FWHM=2.5-3.5 keV at 1.33 MeV) and Si(Li), timing FWHM=12 ns. Source not chemically separated.

^{81}Rb Levels

Decay schemes of 1973Br32 and 1981FrZY are based on Ritz combination principle, intensity balances, and coincidence measurements. The 1980Ho28 scheme is based only on the Ritz principle and intensity balances. Different authors propose significantly different decay schemes. The adopted scheme is essentially that of 1980Ho28 with the addition of levels at 1061 keV and 1218 keV (proposed in 1981FrZY) and the $\gamma\gamma$-coin data from 1973Br32 and 1981FrZY. Levels at 497, 819, 866, 1344 and 1600, proposed by 1973Br32, are not adopted because γ rays deexciting them are either placed differently or are unobserved by 1980Ho28 or 1981FrZY.

E(level)†	J$^{\pi}$‡	$T_{1/2}$	Comments
0.0	3/2^{-}	4.572 h *4*	$T_{1/2}$: from Adopted Levels.
86.31 *7*	9/2^{+}	30.5 min *3*	$T_{1/2}$: from Adopted Levels.
153.481 *20*	5/2^{-}		
188.228 *17*	1/2^{-},3/2^{-}		
245.271 *25*	5/2^{+}		
301.240 *16*	(3/2)$^{-}$		
443.387 *19*	1/2$^{(-)}$,3/2$^{(-)}$		
463.00 *5*	1/2^{+},3/2,5/2^{+}		
486.69 *5*	(5/2^{-})		
574.729 *23*	(1/2)$^{-}$		
630.59 *6*	(5/2^{+})		
702.16 *4*	1/2$^{(-)}$,3/2,5/2$^{(+)}$		
711.93 *3*	(1/2^{-},3/2,5/2^{+})		
909.089 *19*	(3/2)$^{-}$		
923.02 *8*	1/2$^{(-)}$,3/2		
1061.42?# *7*	1/2^{+}		
1218.9# *5*	1/2$^{(+)}$,3/2		
1243.63 *13*	1/2$^{(+)}$,3/2		
1381.89 *3*	(3/2)$^{-}$		
1513.10 *12*	1/2,3/2		
1553.67 *4*	1/2^{-},3/2^{-}		
1804.35 *13*	1/2,3/2		
1848.15 *18*	1/2$^{(+)}$,3/2		
2165.4 *4*	(1/2^{+})		

† From least-squares fit to Eγ, omitting 1554γ, 1382γ, 1252γ and 978γ.
‡ From Adopted Levels.
\# From 1981FrZY decay scheme only; based on $\gamma\gamma$-coin data.

^{81}Sr ε decay 1980Ho28 (continued)

ε,β^+ radiations

E(decay)†	E(level)	Iβ^+ ‡	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)‡	Comments
(1762 *9*)	2165.4	0.029 *5*	0.15 *3*	6.37 *8*	0.18 *3*	av Eβ=323.3 *39*; εK=0.735 *5*; εL=0.0862 *6*; εM+=0.01821 *13*
(2079 *9*)	1848.15	0.098 *16*	0.15 *2*	6.51 *7*	0.25 *4*	av Eβ=461.9 *40*; εK=0.534 *6*; εL=0.0624 *7*; εM+=0.01319 *15*
(2123 *9*)	1804.35	0.13 *2*	0.17 *3*	6.47 *8*	0.30 *5*	av Eβ=481.3 *40*; εK=0.506 *6*; εL=0.0591 *7*; εM+=0.01249 *15*
(2373 *9*)	1553.67	2.0 *2*	1.4 *2*	5.66 *6*	3.4 *4*	av Eβ=593.0 *41*; εK=0.361 *5*; εL=0.0421 *6*; εM+=0.00889 *12*
(2414 *9*)	1513.10	0.21 *3*	0.13 *2*	6.70 *7*	0.34 *5*	av Eβ=611.2 *41*; εK=0.341 *5*; εL=0.0398 *5*; εM+=0.00840 *11*
(2545 *9*)	1381.89	3.4 *4*	1.6 *2*	5.66 *6*	5.0 *6*	av Eβ=670.3 *41*; εK=0.283 *4*; εL=0.0330 *5*; εM+=0.00698 *9*
(2683 *9*)	1243.63	0.14 *4*	0.051 *16*	7.21 *14*	0.19 *6*	av Eβ=733.0 *41*; εK=0.233 *3*; εL=0.0272 *4*; εM+=0.00574 *8*
(2708 *9*)	1218.9	≥0.13	≥0.046	≤7.3	≥0.18	av Eβ=744.3 *41*; εK=0.225 *3*; εL=0.0263 *4*; εM+=0.00555 *7*
(2866# *9*)	1061.42?	≤0.25	≤0.066	≥7.2	≤0.32	av Eβ=816.2 *42*; εK=0.1818 *22*; εL=0.0212 *3*; εM+=0.00447 *6*
(3004 *9*)	923.02	0.31 *6*	0.066 *12*	7.20 *8*	0.38 *7*	av Eβ=879.8 *42*; εK=0.1515 *18*; εL=0.01765 *21*; εM+=0.00373 *5*
(3018 *9*)	909.089	7.9 *10*	1.6 *2*	5.81 *6*	9.5 *12*	av Eβ=886.2 *42*; εK=0.1488 *18*; εL=0.01733 *21*; εM+=0.00366 *5*
(3215 *9*)	711.93	≤2.3	≤0.34	≥6.5	≤2.6	av Eβ=977.3 *42*; εK=0.1163 *13*; εL=0.01353 *15*; εM+=0.00286 *4*
(3225 *9*)	702.16	0.34 *9*	0.051 *13*	7.37 *12*	0.39 *10*	av Eβ=981.8 *42*; εK=0.1149 *13*; εL=0.01337 *15*; εM+=0.00282 *4*
(3296 *9*)	630.59	0.67 *10*	0.25 *4*	8.31[1u] *7*	0.92 *14*	av Eβ=1036.5 *42*; εK=0.2410 *24*; εL=0.0283 *3*; εM+=0.00598 *6*
(3352 *9*)	574.729	7.5 *10*	0.96 *12*	6.13 *6*	8.5 *11*	av Eβ=1041.0 *42*; εK=0.0987 *11*; εL=0.01149 *13*; εM+=0.00243 *3*
(3440# *9*)	486.69	≤0.32	≤0.037	≥7.6	≤0.36	av Eβ=1082.0 *42*; εK=0.0892 *10*; εL=0.01038 *11*; εM+=0.002192 *23*
(3464 *9*)	463.00	0.43 *8*	0.048 *9*	7.46 *9*	0.48 *9*	av Eβ=1093.0 *42*; εK=0.0869 *9*; εL=0.01011 *11*; εM+=0.002134 *22*
3.46×10^3 *9*	443.387	16.0 *20*	1.72 *21*	5.91 *6*	17.7 *22*	av Eβ=1102.2 *42*; εK=0.0850 *9*; εL=0.00989 *10*; εM+=0.002088 *22*
3706 *30*	301.240	28 *5*	2.5 *4*	5.78 *8*	30 *5*	av Eβ=1168.7 *43*; εK=0.0728 *7*; εL=0.00846 *9*; εM+=0.001787 *18*
(3682# *9*)	245.271	<0.06	<0.01	>9.8[1u]	<0.07	av Eβ=1213.6 *42*; εK=0.1596 *15*; εL=0.01871 *18*; εM+=0.00395 *4* I($\varepsilon+\beta^+$): −0.01 *8* from intensity balance.
(3739 *9*)	188.228	6.5 *11*	0.52 *9*	6.49 *8*	7.0 *12*	av Eβ=1221.7 *43*; εK=0.0646 *6*; εL=0.00751 *7*; εM+=0.001586 *15*
(3927# *9*)	0.0	13 *10*	0.9 *7*	6.3 *4*	14 *11*	av Eβ=1310.3 *43*; εK=0.0535 *5*; εL=0.00622 *6*; εM+=0.001313 *12*

† Measured β^+ endpoint energy + 1022 (1973Br32).
‡ Absolute intensity per 100 decays.
\# Existence of this branch is questionable.

$\gamma(^{81}$Rb)

Iγ normalization: From intensity balances and measured I($\gamma^{\pm}$)=245 *20* if Iγ(443γ)=24.2 *18* (1973Br32), assuming theoretical Iβ^+/I(ε+β^+) ratios.

E_γ [†]	I_γ [†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	δ	α [a]	Comments
55.95 *3*	0.53 *4*	301.240	(3/2)$^-$	245.271	5/2$^+$	[E1]		0.527	α(K)=0.465 *7*; α(L)=0.0522 *8*; α(M)=0.00851 *12*; α(N+..)=0.000961 *14* α(N)=0.000926 *13*; α(O)=3.47×10^{-5} *5*
86.26 *19*		86.31	9/2$^+$	0.0	3/2$^-$	E3		17.7 *3*	α(K)=12.12 *21*; α(L)=4.68 *9*; α(M)=0.789 *15*; α(N+..)=0.0748 *14* α(N)=0.0739 *14*; α(O)=0.000825 *14* E_γ: weighted average of 86.2 keV *2* (1977LiZP) and 86.6 keV *5* (1981FrZY). Mult.: from α(K)exp/(α(L)exp+α(M)exp)=2.57 *30* (1956Do52). α(K)/(α(L)+α(M))=2.22 (E3 theory).
113.02 *3*	0.98 *8*	301.240	(3/2)$^-$	188.228	1/2$^-$,3/2$^-$	[M1,E2]		0.4 *3*	α(K)=0.31 *22*; α(L)=0.04 *4*; α(M)=0.007 *6*; α(N+..)=0.0008 *6* α(N)=0.0008 *6*; α(O)=2.4×10^{-5} *16*
131.56 *14*	0.13 *8*	574.729	(1/2)$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$				
142.15 *3*	17.3 *5*	443.387	1/2$^{(-)}$,3/2$^{(-)}$	301.240	(3/2)$^-$	[E1,M1]		0.045 *11*	α(K)=0.040 *10*; α(L)=0.0044 *12*; α(M)=0.00072 *19*; α(N+..)=8.5×10^{-5} *23* α(N)=8.1×10^{-5} *22*; α(O)=3.4×10^{-6} *10*
147.76 *3*	172 *5*	301.240	(3/2)$^-$	153.481	5/2$^-$	[M1,E2]		0.14 *9*	α(K)=0.12 *8*; α(L)=0.016 *11*; α(M)=0.0026 *18*; α(N+..)=0.00029 *20* α(N)=0.00028 *19*; α(O)=1.0×10^{-5} *6*
153.54 *3*	193 *6*	153.481	5/2$^-$	0.0	3/2$^-$	(M1+E2)	<0.5	0.061 *16*	α(K)=0.053 *14*; α(L)=0.0063 *19*; α(M)=0.0010 *3*; α(N+..)=0.00012 *4* α(N)=0.00012 *4*; α(O)=4.6×10^{-6} *10*
158.96 *6*	0.70 *11*	245.271	5/2$^+$	86.31	9/2$^+$	[E2]		0.1764	α(K)=0.1526 *22*; α(L)=0.0201 *3*; α(M)=0.00331 *5*; α(N+..)=0.000366 *6* α(N)=0.000354 *5*; α(O)=1.205×10^{-5} *17*
188.27 *3*	88 *3*	188.228	1/2$^-$,3/2$^-$	0.0	3/2$^-$	[M1,E2]		0.06 *4*	α(K)=0.05 *3*; α(L)=0.007 *4*; α(M)=0.0011 *7*; α(N+..)=0.00012 *7* α(N)=0.00012 *7*; α(O)=4.4×10^{-6} *23*
197.32 *8*	0.51 *14*	909.089	(3/2)$^-$	711.93	(1/2$^-$,3/2,5/2$^+$)	[M1,E2]		0.05 *3*	α(K)=0.045 *25*; α(L)=0.006 *4*; α(M)=0.0009 *6*; α(N+..)=0.00010 *6* α(N)=0.00010 *6*; α(O)=3.7×10^{-6} *19*
206.98 *7*	1.70 *17*	909.089	(3/2)$^-$	702.16	1/2$^{(-)}$,3/2,5/2$^{(+)}$	[M1,E2]		0.044 *24*	α(K)=0.039 *21*; α(L)=0.005 *3*; α(M)=0.0008 *5*; α(N+..)=9.E−5 *5* α(N)=8.E−5 *5*; α(O)=3.2×10^{-6} *16*
217.73 *4*	1.86 *20*	463.00	1/2$^+$,3/2,5/2$^+$	245.271	5/2$^+$				E_γ: γ placed elsewhere by 1973Br32. γ from ^{81}Rb β^+ decay at same E in 1981FrZY.

γ(^{81}Rb) (continued)

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Mult.	α[a]	Comments
245.24 4	4.0 3	245.271	$5/2^+$	0.0	$3/2^-$	[E1]	0.00697	α(K)=0.00618 9; α(L)=0.000666 10; α(M)=0.0001095 16; α(N+..)=1.283×10^{-5} 18 α(N)=1.231×10^{-5} 18; α(O)=5.17×10^{-7} 8 E_γ: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY. γ placed elsewhere by 1973Br32.
255.16 3	8.9 4	443.387	$1/2^{(-)},3/2^{(-)}$	188.228	$1/2^-,3/2^-$			
289.95 5	0.6 3	443.387	$1/2^{(-)},3/2^{(-)}$	153.481	$5/2^-$			
301.30 3	8.3 4	301.240	$(3/2)^-$	0.0	$3/2^-$			
347.8 3	0.29 26	923.02	$1/2^{(-)},3/2$	574.729	$(1/2)^-$			
386.55 4	9.4 5	574.729	$(1/2)^-$	188.228	$1/2^-,3/2^-$			
410.83 11	2.5 4	711.93	$(1/2^-,3/2,5/2^+)$	301.240	$(3/2)^-$			E_γ: 412.6 5 γ ray observed in 1973Br32 is placed elsewhere by 1973Br32.
421.29 6	5.4 4	574.729	$(1/2)^-$	153.481	$5/2^-$			E_γ: γ placed elsewhere by 1973Br32.
422.47 15	2.1 3	909.089	$(3/2)^-$	486.69	$(5/2^-)$			
443.34 4	100 3	443.387	$1/2^{(-)},3/2^{(-)}$	0.0	$3/2^-$			
463.08 17	1.7 3	463.00	$1/2^+,3/2,5/2^+$	0.0	$3/2^-$			
465.80 5	6.9 4	909.089	$(3/2)^-$	443.387	$1/2^{(-)},3/2^{(-)}$			
477.15 16	3.7 4	630.59	$(5/2^+)$	153.481	$5/2^-$			γ from ^{81}Rb β^+ decay at same energy in 1981FrZY.
486.69[b@] 6	6.7[b] 11	486.69	$(5/2^-)$	0.0	$3/2^-$			
486.69[b@c] 6	0.6[b] 12	1061.42?	$1/2^+$	574.729	$(1/2)^-$			
507.0[#] 5	≥1.02[#]	1218.9	$1/2^{(+)},3/2$	711.93	$(1/2^-,3/2,5/2^+)$			
523.71 4	7.6 3	711.93	$(1/2^-,3/2,5/2^+)$	188.228	$1/2^-,3/2^-$			E_γ: γ placed elsewhere by 1973Br32.
541.51 14	0.68 25	1243.63	$1/2^{(+)},3/2$	702.16	$1/2^{(-)},3/2,5/2^{(+)}$			
548.65 5	3.18 16	702.16	$1/2^{(-)},3/2,5/2^{(+)}$	153.481	$5/2^-$			E_γ: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY.
558.8 4	0.21 11	711.93	$(1/2^-,3/2,5/2^+)$	153.481	$5/2^-$			E_γ: γ placed elsewhere by 1973Br32.
574.67 3	38.5 12	574.729	$(1/2)^-$	0.0	$3/2^-$			
607.88 3	7.8 3	909.089	$(3/2)^-$	301.240	$(3/2)^-$			
630.57 6	1.66 13	630.59	$(5/2^+)$	0.0	$3/2^-$			E_γ: γ placed elsewhere by 1973Br32.
644.56 17	1.17 12	1553.67	$1/2^-,3/2^-$	909.089	$(3/2)^-$			
663.6 3	0.48 10	909.089	$(3/2)^-$	245.271	$5/2^+$			E_γ: 1981FrZY report a 664-keV sum peak from 153γ+$\gamma^\pm$.
670.4 3	0.60 10	1381.89	$(3/2)^-$	711.93	$(1/2^-,3/2,5/2^+)$			
702.14 9	5.79 23	702.16	$1/2^{(-)},3/2,5/2^{(+)}$	0.0	$3/2^-$			
711.90 6	7.9 3	711.93	$(1/2^-,3/2,5/2^+)$	0.0	$3/2^-$			E_γ: γ placed elsewhere by 1973Br32.
720.81 3	20.2 6	909.089	$(3/2)^-$	188.228	$1/2^-,3/2^-$			
769.5 4	0.12 8	923.02	$1/2^{(-)},3/2$	153.481	$5/2^-$			E_γ: γ placed elsewhere by 1973Br32.
807.04 18	0.48 8	1381.89	$(3/2)^-$	574.729	$(1/2)^-$			
811.01 12	0.92 10	1513.10	$1/2,3/2$	702.16	$1/2^{(-)},3/2,5/2^{(+)}$			
841.34 15	1.22 11	1553.67	$1/2^-,3/2^-$	711.93	$(1/2^-,3/2,5/2^+)$			
851.39 6	3.40 15	1553.67	$1/2^-,3/2^-$	702.16	$1/2^{(-)},3/2,5/2^{(+)}$			
895.10 25	0.83 10	1381.89	$(3/2)^-$	486.69	$(5/2^-)$			E_γ: γ placed elsewhere by 1973Br32.

γ(^{81}Rb) (continued)

E_γ[†]	I_γ[†&]	E_i(level)	J^π_i	E_f	J^π_f	Comments
909.03 3	15.5 5	909.089	(3/2)$^-$	0.0	3/2$^-$	
923.05 8	1.76 11	923.02	1/2$^{(-)}$,3/2	0.0	3/2$^-$	E_γ: γ placed elsewhere by 1973Br32.
938.45 3	16.9 5	1381.89	(3/2)$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$	
^{x}953.8 4	0.29 8					1981FrZY report an E=954.5 5 sum peak from 443γ+$\gamma^\pm$.
978.66[‡] 7	2.13 12	1553.67	1/2$^-$,3/2$^-$	574.729	(1/2)$^-$	E_γ: coincides with γ from ^{81}Rb β^+ decay in 1981FrZY.
998.6 4	0.19 7	1243.63	1/2$^{(+)}$,3/2	245.271	5/2$^+$	
1066.96 8	2.19 12	1553.67	1/2$^-$,3/2$^-$	486.69	(5/2$^-$)	
1080.72 11	2.80 14	1381.89	(3/2)$^-$	301.240	(3/2)$^-$	
1090.75 17	0.90 9	1553.67	1/2$^-$,3/2$^-$	463.00	1/2$^+$,3/2,5/2$^+$	
1110.26 10	1.63 11	1553.67	1/2$^-$,3/2$^-$	443.387	1/2$^{(-)}$,3/2$^{(-)}$	
1136.63 11	1.14 8	1381.89	(3/2)$^-$	245.271	5/2$^+$	
1193.76 5	3.48 15	1381.89	(3/2)$^-$	188.228	1/2$^-$,3/2$^-$	
1211.2 4	0.38 7	1513.10	1/2,3/2	301.240	(3/2)$^-$	
1243.0 4	0.20 7	1243.63	1/2$^{(+)}$,3/2	0.0	3/2$^-$	
1252.82[‡] 10	1.81 10	1553.67	1/2$^-$,3/2$^-$	301.240	(3/2)$^-$	
1273.45 19	0.93 10	1848.15	1/2$^{(+)}$,3/2	574.729	(1/2)$^-$	
1317.54 24	0.29 7	1804.35	1/2,3/2	486.69	(5/2$^-$)	
1324.7 4	0.64 9	1513.10	1/2,3/2	188.228	1/2$^-$,3/2$^-$	
1360.6 3	0.57 8	1804.35	1/2,3/2	443.387	1/2$^{(-)}$,3/2$^{(-)}$	
1365.68 22	0.75 8	1553.67	1/2$^-$,3/2$^-$	188.228	1/2$^-$,3/2$^-$	
1382.44[‡] 8	2.32 12	1381.89	(3/2)$^-$	0.0	3/2$^-$	
1400.33 6	2.39 12	1553.67	1/2$^-$,3/2$^-$	153.481	5/2$^-$	
^{x}1468.8 4	0.51 7					
1502.5 7	0.25 7	1804.35	1/2,3/2	301.240	(3/2)$^-$	
1533.6 7	0.12 7	2165.4	(1/2$^+$)	630.59	(5/2$^+$)	
^{x}1544.6 5	0.17 7					
1554.15[‡] 11	1.56 10	1553.67	1/2$^-$,3/2$^-$	0.0	3/2$^-$	
1603.0 7	0.38 8	1848.15	1/2$^{(+)}$,3/2	245.271	5/2$^+$	E_γ: γ placed elsewhere by 1973Br32.
1616.31 17	0.60 8	1804.35	1/2,3/2	188.228	1/2$^-$,3/2$^-$	
^{x}1627.5 7	0.11 6					
^{x}1631.9 7	0.21 7					
^{x}1654.4 3	0.49 8					
1659.6 5	0.13 5	1848.15	1/2$^{(+)}$,3/2	188.228	1/2$^-$,3/2$^-$	
1679.6 7	0.46 7	2165.4	(1/2$^+$)	486.69	(5/2$^-$)	
^{x}1698.35 18	0.22 6					
1722.2 7	0.47 7	2165.4	(1/2$^+$)	443.387	1/2$^{(-)}$,3/2$^{(-)}$	

[†] From 1980Ho28, if not noted otherwise. Iγ data from 1980Ho28 and 1973Br32 are in reasonable agreement, whereas data from 1981FrZY frequently disagree significantly with those from 1980Ho28. 14 relatively weak γ rays (Eγ=98 1, 172.0 5, 177.6 5, 237.5 10, 314 1, 319 1, 496.5 10, 517 1, 545.2 5, 586.2 10,

819.2 *10*, 1034.8 *8*, 1344 *1*, 1620 *2*) reported in 1973Br32 are absent in the higher resolution and statistically superior spectra of 1980Ho28 and are, consequently, omitted here; so is Eγ=97.6 *5* from 1982Th03. Eγ=507.0, 516.4, 543.3, 589.1, 975.1? from 1981FrZY are also absent in 1980Ho28; the 507γ is retained here because it is observable only in coin spectra (unmeasured by 1980Ho28), the others are omitted because they are only tentatively assigned to ^{81}Rb or are presumed by 1981FrZY to be identical to γ rays from 1973Br32 which are not adopted here.

‡ Eγ at least 3σ from least-squares adjusted value; datum omitted from least-squares level energy adjustment. γ could be complex or misplaced.

From 1981FrZY; not reported by 1980Ho28. Observable only in $\gamma\gamma$ coin spectra owing to proximity of strong $\gamma^{\pm}$ peak.

@ A 487γ placed from a 487 level in 1980Ho28 (as in (α,2nγ)) is placed from a 1061 level in 1981FrZY based on observed coincidence with 421γ and 574γ, both of which deexcite the 574 level. Since several γ rays can be placed feeding a 487 level, and the 1061 level deexcites to a level absent in (α,2nγ), the evaluator retains both 487 and 1061 levels, assuming the 487γ to be a doublet in ^{81}Sr ε decay. The quoted Eγ applies to that doublet. Intensity balance at the 486 level requires I(486γ)≥5.9 *4* from that level, whereas Iγ(doublet)=7.3 *5*. Thus, I(486γ) from 486 level could range from 5.5 to 7.8 so the evaluator assigns 6.7 *11*, leaving 0.6 *12* for I(486γ) from the 1061 level.

& For absolute intensity per 100 decays, multiply by 0.175 *21*.

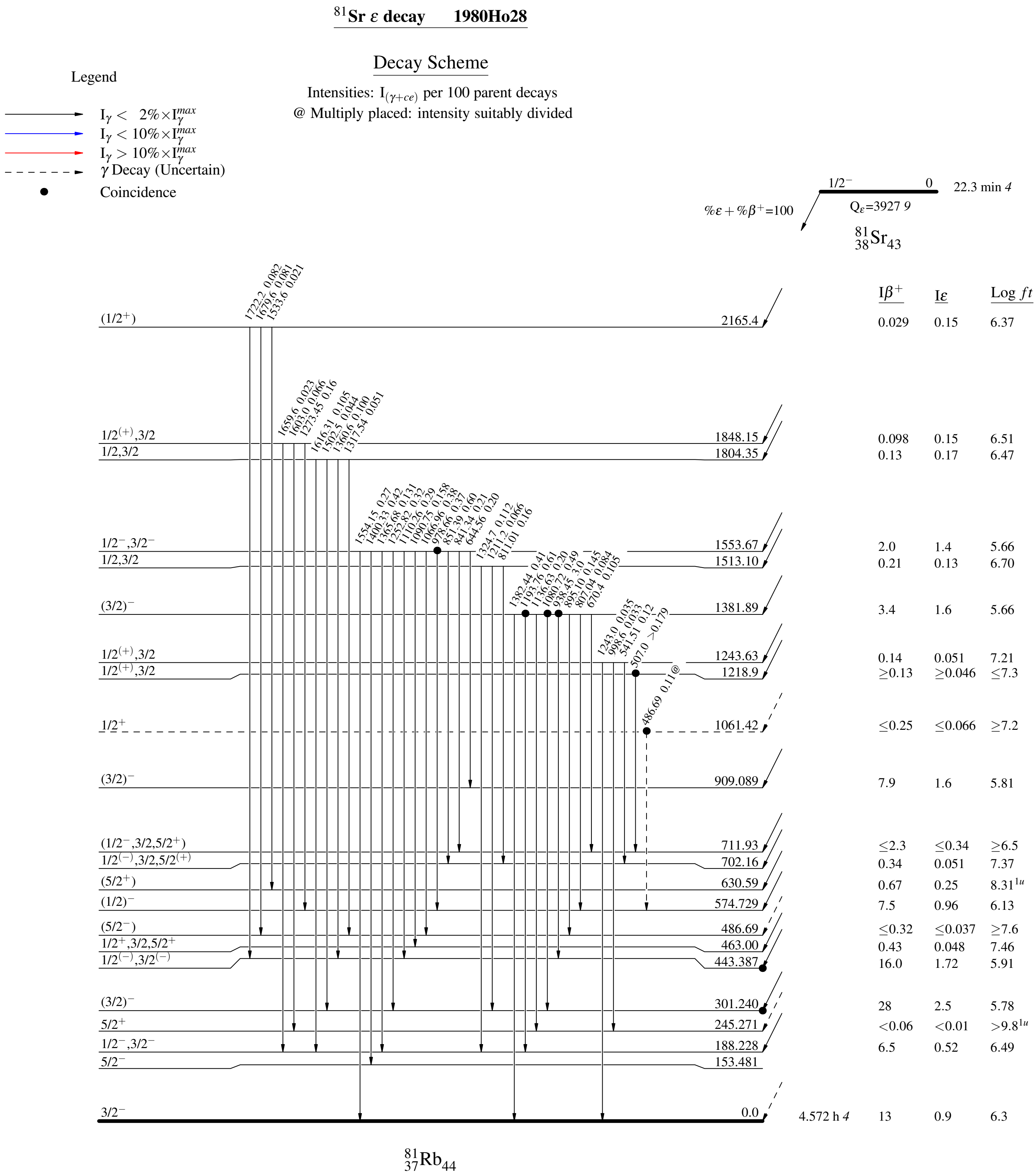
[a] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

[b] Multiply placed with intensity suitably divided.

[c] Placement of transition in the level scheme is uncertain.

[x] γ ray not placed in level scheme.

$^{81}_{37}$Rb$_{44}$-6


^{81}Sr ε decay 1980Ho28
Decay Scheme
Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided
Legend
I_γ < 2%×I_γ^{max}
I_γ < 10%×I_γ^{max}
I_γ > 10%×I_γ^{max}
γ Decay (Uncertain)
Coincidence
1/2− 0 22.3 min 4
Q_ε=3927 9
%ε+%β+=100
$^{81}_{38}Sr_{43}$
Iβ+ Iε Log ft
(1/2+) 2165.4 0.029 0.15 6.37
1/2(+),3/2 1848.15 0.098 0.15 6.51
1/2,3/2 1804.35 0.13 0.17 6.47
1/2−,3/2− 1553.67 2.0 1.4 5.66
1/2,3/2 1513.10 0.21 0.13 6.70
(3/2)− 1381.89 3.4 1.6 5.66
1/2(+),3/2 1243.63 0.14 0.051 7.21
1/2(+),3/2 1218.9 ≥0.13 ≥0.046 ≤7.3
1/2+ 1061.42 ≤0.25 ≤0.066 ≥7.2
(3/2)− 909.089 7.9 1.6 5.81
(1/2−,3/2,5/2+) 711.93 ≤2.3 ≤0.34 ≥6.5
1/2(−),3/2,5/2(+) 702.16 0.34 0.051 7.37
(5/2+) 630.59 0.67 0.25 8.31 1u
(1/2)− 574.729 7.5 0.96 6.13
(5/2−) 486.69 ≤0.32 ≤0.037 ≥7.6
1/2+,3/2,5/2+ 463.00 0.43 0.048 7.46
1/2(−),3/2(−) 443.387 16.0 1.72 5.91
(3/2)− 301.240 28 2.5 5.78
5/2+ 245.271 <0.06 <0.01 >9.8 1u
1/2−,3/2− 188.228 6.5 0.52 6.49
5/2− 153.481
3/2− 0.0 4.572 h 4 13 0.9 6.3
1722.2 0.082
1679.6 0.081
1533.6 0.021
1659.6 0.023
1603.0 0.066
1273.45 0.16
1616.31 0.105
1502.5 0.044
1360.6 0.100
1317.54 0.051
1554.15 0.27
1400.33 0.42
1365.68 0.131
1252.82 0.32
1110.26 0.29
1090.75 0.158
1066.96 0.38
978.66 0.37
851.39 0.60
841.34 0.21
644.56 0.20
1324.7 0.112
1211.2 0.066
811.01 0.16
1382.44 0.41
1193.76 0.61
1136.63 0.20
1080.72 0.49
938.45 3.0
895.10 0.145
807.04 0.084
670.4 0.105
1243.0 0.035
998.6 0.033
541.51 0.12
507.0 >0.179
486.69 0.11@
$^{81}_{37}Rb_{44}$

^{81}Sr ε decay 1980Ho28

Decay Scheme (continued)

Intensities: $I_{(\gamma+ce)}$ per 100 parent decays
@ Multiply placed: intensity suitably divided