^{76}Rb ε decay (36.5 s) 1984Mo22,1985Pi08

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh	NDS 74,63 (1995)	22-Dec-1994

Parent: ^{76}Rb: E=0.0; $J^\pi=1^{(-)}$; $T_{1/2}$=36.5 s *6*; Q(ε)=8500 *13*; %ε+%$β^+$ decay=100.0

1984Mo22 (also 1982Mo10): measured γ, γγ, β+γ, mass-separated source.

1985Pi08: measured γ, γγ.

Others:

γ,γγ: 1975Bo52, 1975We23.

γγ(θ): 1978LiZU.

Q(ε): 1993Al03 (by total γ absorption), 1983Li11 (β+γ), 1982Mo10 ($β^+$).

^{76}Rb production and $T_{1/2}$(^{76}Rb): 1993Al03, 1979No07, 1979Lu07, 1979De43, 1975Ra03, 1975Bo52, 1974DeXQ, 1972Ve02, 1969Ch18.

β+γ: 1983Li11, 1976DaYR, 1975We23.

^{76}Kr Levels

E(level)†	J^π	Comments
0.0	0^+	
423.96 *7*	2^+	
769.87 *10*	0^+	J^π: from (346γ)(424γ)(θ) (1978LiZU).
1034.62 *10*	4^+	
1221.66 *7*	2^+	
1597.98 *9*	(≤4)	
1687.28 *9*	2^+	
1733.27 *12*	(3^+)	
2091.44 *12*	$(1,2^+)$	
2104.29 *14*	$(1,2^+)$	
2227.18 *10*	(2^-)	
2257.41 *10*	3^-	
2570.95 *8*	$(1,2^+)$	
2774.88 *12*	$(0^+,1,2)$	
2816.7 *3*	$(1,2^+)$	
2926.54 *12*	(0,1,2)	
3024.18 *12*	$(1^-,2)$	

† From least-squares fit to Eγ′s.

ε,$β^+$ radiations

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(5476 *13*)	3024.18	6.9 *6*	0.11 *1*	5.88 *4*	7.0 *6*	av Eβ=2050 *7*; εK=0.01394 *12*; εL=0.001610 *14*; εM+=0.000330 *3*
(5573 *13*)	2926.54	9.4 *11*	0.14 *2*	5.79 *6*	9.5 *11*	av Eβ=2097 *7*; εK=0.01309 *11*; εL=0.001511 *13*; εM+=0.000310 *3*
(5683 *13*)	2816.7	5.6 *6*	0.079 *8*	6.06 *5*	5.7 *6*	av Eβ=2150 *7*; εK=0.01220 *10*; εL=0.001409 *12*; εM+=0.00029
(5725 *13*)	2774.88	2.7 *4*	0.037 *5*	6.40 *7*	2.7 *4*	av Eβ=2170 *7*; εK=0.01189 *10*; εL=0.001373 *12*; εM+=0.00028
5492 *44*	2570.95	43 *3*	0.53 *4*	5.28 *3*	44 *3*	av Eβ=2269 *7*; εK=0.01050 *9*; εL=0.001212 *10*; εM+=0.00025 E(decay): from (424γ)$β^+$ (1982Mo10). Others: $β^+$(end point)=4740 *400* (1976DaYR); 5200 *570* (1975We23); 4661 *436* from (2571γ)$β^+$ (1983Li11), 4475 *174* from (424γ)$β^+$ (1983Li11).

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^{76}Rb ε decay (36.5 s) 1984Mo22,1985Pi08 (continued)

ε,β+ radiations (continued)

E(decay)	E(level)	Iβ+ †	Iε†	Log *ft*	I(ε+β+)†	Comments
(6243‡ *13*)	2257.41	0.41 *18*	0.0041 *18*	7.43 *19*	0.41 *18*	av Eβ=2421 *7*; εK=0.00876 *7*; εL=0.001011 *8*; εM+=0.00021
(6273 *13*)	2227.18	6.6 *6*	0.066 *6*	6.23 *4*	6.7 *6*	av Eβ=2436 *7*; εK=0.00861 *7*; εL=0.000994 *8*; εM+=0.00020
(6396 *13*)	2104.29	5.8 *5*	0.054 *5*	6.33 *4*	5.9 *5*	av Eβ=2495 *7*; εK=0.00805 *6*; εL=0.000929 *7*; εM+=0.00019
(6409‡ *13*)	2091.44	0.41 *13*	0.0037 *12*	7.49 *14*	0.41 *13*	av Eβ=2502 *7*; εK=0.00799 *6*; εL=0.000922 *7*; εM+=0.00019
(6767‡ *13*)	1733.27	1.3 *1*	0.021 *2*	9.03^{1u} *4*	1.3 *1*	av Eβ=2673 *7*; εK=0.01415 *10*; εL=0.001639 *12*; εM+=0.00034
(6813 *13*)	1687.28	1.8 *6*	0.013 *4*	7.00 *15*	1.8 *6*	av Eβ=2698 *7*; εK=0.00647 *5*; εL=0.000746 *5*; εM+=0.00015
(6902‡ *13*)	1597.98	0.8 *2*	0.006 *1*	7.38 *11*	0.8 *2*	av Eβ=2742 *7*; εK=0.00618 *4*; εL=0.000713 *5*; εM+=0.000146
(7278 *13*)	1221.66	4.4 *4*	0.026 *2*	6.76 *4*	4.4 *4*	av Eβ=2926 *7*; εK=0.00515 *4*; εL=0.000594 *4*; εM+=0.0001219 *8*
(7465‡ *13*)	1034.62	1.5 *2*	0.0081 *11*	7.29 *6*	1.5 *2*	av Eβ=3017 *7*; εK=0.00473 *3*; εL=0.000545 *4*; εM+=0.0001118 *7*
(7730‡ *13*)	769.87	1.2 *6*	0.006 *3*	7.47 *22*	1.2 *6*	av Eβ=3147 *7*; εK=0.004199 *24*; εL=0.000484 *3*; εM+=9.93×10^{-5} *6*
(8076 *13*)	423.96	6.6 *21*	0.027 *9*	6.83 *14*	6.6 *21*	av Eβ=3316 *7*; εK=0.003622 *20*; εL=0.00042; εM+=8.57×10^{-5} *5*

† Absolute intensity per 100 decays.
‡ Existence of this branch is questionable.

γ(^{76}Kr)

Iγ normalization: Σ (I(γ+ce) of γ′s to g.s.)=100, assumed no feeding to g.s. The feeding to g.s. is expected to be small from log *ft*>6 for 0+ (^{76}Kr g.s.) to 1− (^{76}Br g.s.) and log *ft*>8.9 for 1− (^{76}Br g.s.) to 0+ (^{76}Se g.s.).
The following γ′s with energy (intensity) reported only by 1975We23 are discarded since these are not confirmed in any of the later studies: 64 (2.3), 244 (2.3), 254 (2.0), 869 (2.2), 937 (2.5).
Q(ε)=8250 *150* (1993Al03), 8094 *162* (1983Li11), 8063 *44* (1982Mo10). The adopted Q(ε)=8500 *13* (1993Au05). See 1993Au08 (page 261) for discussion of this discrepancy.

Eγ†	Iγ†@	Ei(level)	J_i^π	Ef	J_f^π
345.9 *1*	12.7 *4*	769.87	0+	423.96	2+
355.6 *1*	17.4 *20*	2926.54	(0,1,2)	2570.95	(1,2+)
376.4 *1*	0.5 *1*	1597.98	(≤4)	1221.66	2+
403.9 *3*	0.3 *1*	2091.44	(1,2+)	1687.28	2+
424.0 *1*	96 *4*	423.96	2+	0.0	0+
x431.3‡ *2*	0.6 *2*				
453.5 *2*	5.6 *3*	3024.18	(1−,2)	2570.95	(1,2+)
466.0 *3*	0.5 *2*	1687.28	2+	1221.66	2+
479.5 *1*	1.7 *1*	2570.95	(1,2+)	2091.44	(1,2+)
610.6 *1*	3.8 *2*	1034.62	4+	423.96	2+
652.6 *1*	0.5 *1*	1687.28	2+	1034.62	4+
766.7 *1*	3.0 *2*	3024.18	(1−,2)	2257.41	3−
797.6 *1*	9.5 *3*	1221.66	2+	423.96	2+

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^{76}Rb ε decay (36.5 s) 1984Mo22,1985Pi08 (continued)

γ(^{76}Kr) (continued)

E_γ [†]	I_γ [†@]	E_i(level)	J_i^π	E_f	J_f^π
822.2 *2*	3.2 *3*	2926.54	(0,1,2)	2104.29	(1,2$^+$)
882.4[#] *5*		2104.29	(1,2$^+$)	1221.66	2$^+$
883.6 *1*	9.9 *6*	2570.95	(1,2$^+$)	1687.28	2$^+$
917.4 *1*	7.9 *10*	1687.28	2$^+$	769.87	0$^+$
973.0 *1*	4.6 *3*	2570.95	(1,2$^+$)	1597.98	(≤4)
1005.5 *1*	2.3 *2*	2227.18	(2$^-$)	1221.66	2$^+$
1035.5 *1*	0.5 *1*	2257.41	3$^-$	1221.66	2$^+$
[x]1120.8[‡] *3*	0.7 *2*				
1174.0 *1*	5.9 *2*	1597.98	(≤4)	423.96	2$^+$
1221.6 *1*	7.3 *5*	1221.66	2$^+$	0.0	0$^+$
1263.2 *2*	2.0 *1*	1687.28	2$^+$	423.96	2$^+$
1309.3 *1*	2.8 *2*	1733.27	(3$^+$)	423.96	2$^+$
1321.6 *3*	1.5 *1*	2091.44	(1,2$^+$)	769.87	0$^+$
1334.4 *3*	0.8 *2*	2104.29	(1,2$^+$)	769.87	0$^+$
1349.3 *1*	1.9 *1*	2570.95	(1,2$^+$)	1221.66	2$^+$
1553.2 *1*	1.6 *1*	2774.88	(0$^+$,1,2)	1221.66	2$^+$
1667.6 *3*	0.8 *2*	2091.44	(1,2$^+$)	423.96	2$^+$
1680.3 *2*	12.3 *6*	2104.29	(1,2$^+$)	423.96	2$^+$
1687.1 *2*	3.1 *2*	1687.28	2$^+$	0.0	0$^+$
[x]1718.3[‡] *3*	3.0 *6*				
1803.2 *1*	12.2 *8*	2227.18	(2$^-$)	423.96	2$^+$
1833.6 *1*	3.4 *3*	2257.41	3$^-$	423.96	2$^+$
2104.3 *5*	2.8 *3*	2104.29	(1,2$^+$)	0.0	0$^+$
2147.2 *3*	1.0 *1*	2570.95	(1,2$^+$)	423.96	2$^+$
2350.9[‡] *4*	4.2 *6*	2774.88	(0$^+$,1,2)	423.96	2$^+$
2392.8[‡] *4*	4.6 *6*	2816.7	(1,2$^+$)	423.96	2$^+$
2571.1 *2*	100	2570.95	(1,2$^+$)	0.0	0$^+$
2600.2[‡] *4*	6.5 *8*	3024.18	(1$^-$,2)	423.96	2$^+$
2816.6[‡] *4*	7.8 *9*	2816.7	(1,2$^+$)	0.0	0$^+$

[†] Weighted average of values from 1984Mo22 and 1985Pi08. The two sets of data are in good agreement with each other.
[‡] Reported by 1984Mo22 only.
[#] From 1985Pi08 only.
[@] For absolute intensity per 100 decays, multiply by 0.461 *25*.
[x] γ ray not placed in level scheme.

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Decay Scheme

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