^{124}I ε decay 1998Wa18,1969Ra31,1992Wo03

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. Katakura, Z. D. Wu	NDS 109, 1655 (2008)	1-Apr-2008

Parent: ^{124}I: E=0.0; J$^{\pi}$=2^{-}; T$_{1/2}$=4.1760 d *3*; Q(ε)=3159.6 *19*; %ε+%β^{+} decay=100.0

1998Wa18: ^{123}Sb(α,2n), E(α)=32 MeV; four Compton-shielded Ge detectors; measured Eγ, Iγ, $\gamma\gamma$-coin; deduced log *ft* values.

1969Ra31: ^{123}Sb(^{4}He,3n) chemical separation; γ, $\gamma\gamma$ coin; decay scheme.

1992Wo03: ^{124}Te(d,2n)^{124}I, isotope separator sources; activity standardization by 4π $\beta\gamma$ coincidence; measured absolute branchings; measured positron spectra and analyzed main components, measured γ in 400-1726 keV range.

1969Be70: La,C(p,X); Eγ, Iγ, Ice, Eβ+; deduced level scheme.

1969La32: Te(p,xn); Eγ, Iγ, $\gamma\gamma$ coin; deduced E/β^{+} branching, level scheme.

2001ElZZ: ^{124}Te(p,n), E(p)=14 MeV; enriched target 99.8 %; chemical separation; measured γ, X-ray; deduced %Iβ^{+}.

2007Qa02: ^{124}Te(p,), E(p)=14 MeV; chemical separation; measured β, γ, X-ray, $\gamma\gamma$ coin; deduced %Iβ^{+}.

The decay scheme is based on that proposed by 1998Wa18. The 2039 keV level has doublet structure according to 2000Do11.

^{124}Te Levels

E(level)†	J$^{\pi}$‡	E(level)†	J$^{\pi}$‡	E(level)†	J$^{\pi}$‡
0.0	0^{+}	2224.96 *7*	4^{+}	2681.45 *9*	2^{+}
602.74 *5*	2^{+}	2293.68 *6*	3^{-}	2693.73 *7*	3^{-}
1248.60 *6*	4^{+}	2308.39 *18*	0^{+}	2701.53 *7*	2^{-}
1325.51 *6*	2^{+}	2322.97 *10*	2^{+}	2746.96 *7*	1$^{(-)}$
1657.28 *10*	0^{+}	2335.05 *12*	5^{-}	2834.88 *6*	3^{-}
1882.65 *22*	0^{+}	2454.06 *6*	2^{+}	2886.00 *6*	3^{-}
1957.93 *7*	4^{+}	2483.32 *7*	4^{+}	2987.86 *7*	1,2^{+}
2039.34 *6*	2^{+} & 3^{+}#	2521.33 *10*	2^{+}	3001.12 *7*	2^{+},3
2091.67 *8*	2^{+}	2641.20 *8*	2^{+}		

† From a least-squares fit to Eγ's.
‡ From Adopted Levels.
# Doublet.

ε,β^{+} radiations

%Iβ^{+}_{exp}=23.0 *5* (2001ElZZ), 22.0 *5* (2007Qa02).

E(decay)	E(level)	Iε‡	Log *ft*	I($\varepsilon+\beta^{+}$)†‡	Comments
(158.5 *19*)	3001.12	0.340 *8*	6.79 *4*	0.340 *8*	εK=0.8051 *9*; εL=0.1527 *7*; εM+=0.04224 *21*
(171.7 *19*)	2987.86	0.021 *4*	8.08 *9*	0.021 *4*	εK=0.8104 *7*; εL=0.1486 *6*; εM+=0.04096 *17*
(273.6 *19*)	2886.00	1.05 *3*	6.85 *4*	1.05 *3*	εK=0.8316 *3*; εL=0.13250 *18*; εM+=0.03588 *6*
(324.7 *19*)	2834.88	4.27 *6*	6.40 *4*	4.27 *6*	εK=0.8366 *2*; εL=0.1287 *2*; εM+=0.03469 *4*
(412.6 *19*)	2746.96	0.584 *20*	7.49 *4*	0.584 *20*	εK=0.84206 *9*; εL=0.12454 *7*; εM+=0.03340 *3*
(458.1 *19*)	2701.53	2.02 *3*	7.05 *4*	2.02 *3*	εK=0.8440; εL=0.12308 *6*; εM+=0.03294 *2*
(465.9 *19*)	2693.73	0.941 *14*	7.40 *4*	0.941 *14*	εK=0.8443; εL=0.12286 *6*; εM+=0.03287 *2*
(478.2 *19*)	2681.45	0.391 *14*	7.80 *4*	0.391 *14*	εK=0.8447; εL=0.12253 *5*; εM+=0.03277 *2*
(518.4 *19*)	2641.20	0.402 *8*	7.86 *4*	0.402 *8*	εK=0.8460; εL=0.12156 *5*; εM+=0.03247 *2*
(638.3 *19*)	2521.33	0.181 *4*	8.40 *4*	0.181 *4*	εK=0.8487; εL=0.11945 *3*; εM+=0.031814 *9*
(676.3 *19*)	2483.32	0.010 *7*	9.9^{1u} *3*	0.010 *7*	εK=0.8334 *1*; εL=0.13112 *8*; εM+=0.03550 *3*
(705.5 *19*)	2454.06	0.354 *20*	8.20 *5*	0.354 *20*	εK=0.8499; εL=0.11859 *3*; εM+=0.031549 *7*
(836.6 *19*)	2322.97	0.183 *6*	8.64 *4*	0.183 *6*	εK=0.8515; εL=0.11734 *2*; εM+=0.031162 *5*
(851.2 *19*)	2308.39	0.0084 *10*	10.41^{1u} *7*	0.0084 *10*	εK=0.8400; εL=0.12608 *5*; εM+=0.03391 *2*
(865.9 *19*)	2293.68	11.64 *18*	6.87 *4*	11.64 *18*	εK=0.8518; εL=0.11711 *2*; εM+=0.031092 *5*

Continued on next page (footnotes at end of table)

^{124}I ε decay 1998Wa18,1969Ra31,1992Wo03 (continued)

ε,$β^+$ radiations (continued)

E(decay)	E(level)	I$β^+$ ‡	Iε‡	Log *ft*	I(ε+$β^+$)†‡	Comments
(934.6 *19*)	2224.96		0.011 *6*	10.46^{1u} *24*	0.011 *6*	εK=0.8421; εL=0.12446 *4*; εM+=0.03340 *1*
(1067.9 *19*)	2091.67		0.203 *5*	8.81 *4*	0.203 *5*	εK=0.8534; εL=0.1159; εM+=0.03072
(1120.3 *19*)	2039.34		0.027 *6*	9.73 *11*	0.027 *6*	εK=0.8537; εL=0.1157; εM+=0.03064
(1277.0 *19*)	1882.65		0.008 *3*	11.15^{1u} *17*	0.008 *3*	εK=0.8476; εL=0.12030 *2*; εM+=0.032091 *6*
(1502.3 *19*)	1657.28	0.000129 *5*	0.110 *4*	10.30^{1u} *4*	0.110 *4*	av Eβ=239.42 *87*; εK=0.8487; εL=0.11858 *2*; εM+=0.031561 *5*
(1834.1 *19*)	1325.51	0.293 *6*	5.42 *9*	7.87 *4*	5.71 *10*	av Eβ=366.83 *83*; εK=0.8122 *4*; εL=0.10795 *5*; εM+=0.02852 *2* Eβ+, I$β^+$: 800 *50* (1959Ha27); 786 *50*, 7.5% (1959Mi22); 800, 5.5% (1967Ru04); 790 *30*, <2.3% (1969Be70); 808, 4.8% (1971Bo01); 753 *50*, 1.5% *4* (1992Wo03).
(1911.0 *19*)	1248.60	0.00065 *16*	0.039 *10*	11.17^{1u} *12*	0.040 *10*	av Eβ=422.27 *84*; εK=0.8383 *1*; εL=0.11500 *3*; εM+=0.030526 *7*
(2556.9 *19*)	602.74	11.7 *2*	25.2 *4*	7.49 *4*	36.9 *6*	av Eβ=687.04 *86*; εK=0.5856 *8*; εL=0.07719 *10*; εM+=0.02037 *3* Eβ+, I$β^+$: 1530 *20* (1959Ha27); 1531 *30*, 46.4% (1959Mi22); 1542 *20*, 49.4% (1967Ru04); 1520 *15*, 47.9% (1969Be70); 1533, 46.2% (1971Bo01); 1544 *7*, 49.6% *6* (1992Wo03); K/$β^+$=2.6 (1969Be70).
(3159.6 *19*)	0.0	10.7 *3*	23.9 *6*	9.27^{1u} *4*	34.6 *8*	av Eβ=974.74 *85*; εK=0.5906 *6*; εL=0.07900 *8*; εM+=0.02089 *2* Eβ+, I$β^+$: 2136 *10* (1959Ha27) 2130 *20*, 46.0%, 2-yes shape (1959Mi22); 2146 *15*, 45.1% (1967Ru04); 2136 *10*, 49.8% (1969Be70); 2133, 49.0%, 2-yes shape (1971Bo01); 2138.3 *21*, 49.0% *4* (1992Wo03).

† From Iγ imbalance.
‡ For absolute intensity per 100 decays, multiply by 1.00 *8*.

γ(^{124}Te)

Iγ normalization, I(γ+ce) normalization: Iγ/100 decays=0.0629 *6*; Iγ per 100 decays are determined from an intensity calibrated source of ^{124}I by 4π βγ coincidence method (1992Wo03).

α(K)exp values were calculated by using Iγ of 1998Wa18 (below 2400 keV) and 1969Ra31 (above 2400 keV) and each Ice of 1967Ru04, 1969Be70, or 1971Zh01, respectively, normalizing so that α(K)exp(602.72γ)=0.00420 (E2 theory).

E_γ[†]	I_γ[†@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[&]	Comments
166.04 *24*	0.13 *5*	3001.12	2⁺,3	2834.88	3⁻				
307.34 *10*	0.33 *4*	3001.12	2⁺,3	2693.73	3⁻				
335.67 *13*	0.28 *5*	2293.68	3⁻	1957.93	4⁺	E1		0.00707	α(K)=0.00613 *9*; α(L)=0.000754 *11*; α(M)=0.0001496 *21*; α(N+..)=3.26×10⁻⁵ *5* α(N)=2.94×10⁻⁵ *5*; α(O)=3.15×10⁻⁶ *5*
351.47 *13*	0.36 *5*	2834.88	3⁻	2483.32	4⁺				
ˣ381.7[‡] *5*	0.28[‡] *2*								
402.80 *20*	0.23 *5*	2886.00	3⁻	2483.32	4⁺				
443.88 *8*	0.60 *5*	2483.32	4⁺	2039.34	2⁺ & 3⁺	M1+E2		0.0121 *6*	α(K)=0.0103 *7*; α(L)=0.00138 *3*; α(M)=0.000276 *7*; α(N+..)=6.01×10⁻⁵ *11* α(N)=5.43×10⁻⁵ *11*; α(O)=5.75×10⁻⁶ *14*
ˣ478.7[‡] *5*	0.43[‡] *4*								
517.80 *9*	0.38 *5*	3001.12	2⁺,3	2483.32	4⁺				
525.45 *7*	0.52 *4*	2483.32	4⁺	1957.93	4⁺	M1+E2		0.0077 *7*	α(K)=0.0066 *6*; α(L)=0.00087 *3*; α(M)=0.000173 *6*; α(N+..)=3.77×10⁻⁵ *15* α(N)=3.41×10⁻⁵ *13*; α(O)=3.64×10⁻⁶ *22*
541.19 *4*	3.41 *5*	2834.88	3⁻	2293.68	3⁻				
550.75 *24*	0.1 *4*	2886.00	3⁻	2335.05	5⁻				
557.14 *21*	0.13 *4*	1882.65	0⁺	1325.51	2⁺				
592.34 *4*	1.82 *4*	2886.00	3⁻	2293.68	3⁻				Not observed in ^{124}Sb decay (60.20 d).
602.73 *8*	1000. *6*	602.74	2⁺	0.0	0⁺	E2		0.00490	α(K)=0.00420 *6*; α(L)=0.000566 *8*; α(M)=0.0001132 *16*; α(N+..)=2.45×10⁻⁵ *4* α(N)=2.22×10⁻⁵ *4*; α(O)=2.33×10⁻⁶ *4* α(L)exp=0.00058, α(M)exp + α(N)exp=0.00015, K/L=7.3 *4* (1967Ru04). Mult.: from L/K ratio (1967Ru04).
609.92 *8*	2.45 *8*	2834.88	3⁻	2224.96	4⁺				
645.85 *8*	15.84 *10*	1248.60	4⁺	602.74	2⁺	E2		0.00409	α(K)=0.00351 *5*; α(L)=0.000467 *7*; α(M)=9.35×10⁻⁵ *13*; α(N+..)=2.03×10⁻⁵ *3* α(N)=1.84×10⁻⁵ *3*; α(O)=1.94×10⁻⁶ *3* α(K)exp=0.00244 *6* (1969Be70), 0.0024 *5* (1971Zh01).
662.10 *8*	0.89 *3*	2701.53	2⁻	2039.34	2⁺ & 3⁺				
707.46 *8*	1.46 *4*	3001.12	2⁺,3	2293.68	3⁻				
709.36 *9*	0.73 *4*	1957.93	4⁺	1248.60	4⁺	M1+E2(+E0)	−0.18 *5*	0.00402	α(K)=0.00349 *5*; α(L)=0.000429 *7*; α(M)=8.53×10⁻⁵ *13*; α(N+..)=1.87×10⁻⁵ *3*

$^{124}_{52}Te_{72}$-3

γ(^{124}Te) (continued)

E_γ[†]	I_γ[†@]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ[#]	α[&]	Comments
									α(N)=1.689×10^{-5} *25*; α(O)=1.85×10^{-6} *3* α(K)exp=0.043 *14* (1971Zh01).
713.75 *8*	1.24 *3*	2039.34	2^+ & 3^+	1325.51	2^+				Doublet. α(K)exp=0.014 *3* (1971Zh01).
722.78 *8*	164.7 *10*	1325.51	2^+	602.74	2^+	M1+E2(+E0)	−3.4 *3*	0.00314	α(K)=0.00271 *4*; α(L)=0.000352 *5*; α(M)=7.02×10^{-5} *10*; α(N+..)=1.529×10^{-5} *22* α(N)=1.382×10^{-5} *20*; α(O)=1.471×10^{-6} *22* α(K)exp=0.00201 *8* (1969Be70).
743.19 *11*	0.198 *16*	2834.88	3^-	2091.67	2^+				
743.2[‡] *3*	0.27[‡] *7*	2701.53	2^-	1957.93	4^+				Not observed in ^{124}Sb β^- decay (60.20 d).
766.09 *25*	0.077 *20*	2091.67	2^+	1325.51	2^+				
776.10 *11*	0.193 *16*	3001.12	2^+,3	2224.96	4^+				
790.76 *8*	0.412 *17*	2039.34	2^+ & 3^+	1248.60	4^+				Doublet.
795.63 *8*	0.591 *17*	2834.88	3^-	2039.34	2^+ & 3^+				
846.8 *3*	0.092 *22*	2886.00	3^-	2039.34	2^+ & 3^+				Not observed in ^{124}Sb decay (60.20 d).
876.97 *9*	0.372 *17*	2834.88	3^-	1957.93	4^+				
899.43 *9*	0.353 *18*	2224.96	4^+	1325.51	2^+				
928.0[‡] *4*	0.035[‡] *15*	2886.00	3^-	1957.93	4^+				Not observed in ^{124}Sb decay (60.20 d).
961.84 *10*	0.269 *19*	3001.12	2^+,3	2039.34	2^+ & 3^+				
968.19 *8*	7.06 *6*	2293.68	3^-	1325.51	2^+	E1(+M2)	+0.02 *2*	6.53×10^{-4} *11*	α(K)=0.000569 *9*; α(L)=6.78×10^{-5} *11*; α(M)=1.343×10^{-5} *22*; α(N+..)=2.94×10^{-6} *5* α(N)=2.65×10^{-6} *5*; α(O)=2.89×10^{-7} *5*
976.35 *8*	1.66 *3*	2224.96	4^+	1248.60	4^+	M1+E2	+0.68 *6*	0.00180	α(K)=0.00156 *3*; α(L)=0.000192 *3*; α(M)=3.81×10^{-5} *6*; α(N+..)=8.37×10^{-6} *14* α(N)=7.54×10^{-6} *12*; α(O)=8.23×10^{-7} *14*
984.4[‡] *5*	0.23[‡] *5*	2641.20	2^+	1657.28	0^+				
1045.11 *8*	6.97 *7*	2293.68	3^-	1248.60	4^+	E1(+M2)	+0.03 *2*	5.67×10^{-4} *10*	α(K)=0.000494 *9*; α(L)=5.88×10^{-5} *11*; α(M)=1.163×10^{-5} *21*; α(N+..)=2.55×10^{-6} *5* α(N)=2.30×10^{-6} *4*; α(O)=2.51×10^{-7} *5* α(K)exp=0.00060 *18*(1969Be70), 0.00060 *18*(1971Zh01).
1054.54 *8*	1.98 *3*	1657.28	0^+	602.74	2^+	E2		1.29×10^{-3}	α(K)=0.001115 *16*; α(L)=0.0001392

γ(^{124}Te) (continued)

E_γ†	I_γ†@	E_i(level)	J^π_i	E_f	J^π_f	Mult.#	δ#	α&	Comments
									20; α(M)=2.77×10^{-5} *4*; α(N+..)=6.05×10^{-6} *9* α(N)=5.46×10^{-6} *8*; α(O)=5.90×10^{-7} *9*
1086.40 *12*	0.242 *23*	2335.05	5$^-$	1248.60	4$^+$				
1128.58 *8*	0.74 *3*	2454.06	2$^+$	1325.51	2$^+$				
1196.0 *4*	0.08 *4*	2521.33	2$^+$	1325.51	2$^+$				Not observed in ^{124}Sb β$^-$ decay (60.20 d).
1205.44 *3*	0.35 *5*	2454.06	2$^+$	1248.60	4$^+$				
1315.67 *10*	0.45 *3*	2641.20	2$^+$	1325.51	2$^+$				
1325.52 *8*	25.08 *24*	1325.51	2$^+$	0.0	0$^+$	E2		8.27×10^{-4}	α(K)=0.000693 *10*; α(L)=8.48×10^{-5} *12*; α(M)=1.685×10^{-5} *24*; α(N+..)=3.16×10^{-5} *5* α(N)=3.33×10^{-6} *5*; α(O)=3.62×10^{-7} *5*; α(IPF)=2.79×10^{-5} *4* α(K)exp=0.00067 *17* (1969Be70).
1355.20 *9*	0.583 *23*	1957.93	4$^+$	602.74	2$^+$	E2(+M3)	−0.32 *+25−18*	0.0011 *4*	α(K)=0.0009 *3*; α(L)=0.00011 *4*; α(M)=2.3×10^{-5} *8*; α(N+..)=3.72×10^{-5} *19* α(N)=4.5×10^{-6} *16*; α(O)=4.9×10^{-7} *17*; α(IPF)=3.2×10^{-5} *4* Additional information 1.
1368.18 *8*	4.75 *5*	2693.73	3$^-$	1325.51	2$^+$	E1(+M2)	−0.02 *1*	4.78×10^{-4}	α(K)=0.000303 *5*; α(L)=3.58×10^{-5} *6*; α(M)=7.09×10^{-6} *10*; α(N+..)=0.0001314 *19* α(N)=1.403×10^{-6} *20*; α(O)=1.534×10^{-7} *22*; α(IPF)=0.0001298 *19* α(K)exp=0.00062 *18* (1969Be70).
1376.09 *8*	28.5 *3*	2701.53	2$^-$	1325.51	2$^+$	E1(+M2)	−0.01 *3*	4.79×10^{-4}	α(K)=0.000300 *5*; α(L)=3.54×10^{-5} *6*; α(M)=7.01×10^{-6} *12*; α(N+..)=0.0001370 *20* α(N)=1.387×10^{-6} *23*; α(O)=1.517×10^{-7} *25*; α(IPF)=0.0001355 *19* α(K)exp=0.00029 *6* (1969Be70).
1436.64 *8*	1.22 *4*	2039.34	2$^+$ & 3$^+$	602.74	2$^+$				Doublet.
1445.17 *9*	0.62 *3*	2693.73	3$^-$	1248.60	4$^+$	E1(+M2)	+0.10 *9*	0.00052 *4*	α(K)=0.00029 *4*; α(L)=3.4×10^{-5} *4*; α(M)=6.7×10^{-6} *8*; α(N+..)=0.000186 *5* α(N)=1.34×10^{-6} *16*; α(O)=1.46×10^{-7} *18*; α(IPF)=0.000184 *5*
^{x}1479‡ *1*									
1488.92 *8*	3.35 *6*	2091.67	2$^+$	602.74	2$^+$	M1(+E2)	+0.10 *23*	8.29×10^{-4} *16*	α(K)=0.000659 *14*; α(L)=7.92×10^{-5} *16*; α(M)=1.57×10^{-5} *3*; α(N+..)=7.52×10^{-5} *12* α(N)=3.11×10^{-6} *7*; α(O)=3.42×10^{-7} *7*; α(IPF)=7.17×10^{-5} *11* α(K)exp=0.00038 *13* (1969Be70).
1509.36 *8*	51.7 *6*	2834.88	3$^-$	1325.51	2$^+$	E1		5.28×10^{-4}	α(K)=0.000256 *4*; α(L)=3.02×10^{-5} *5*; α(M)=5.97×10^{-6} *9*; α(N+..)=0.000235 *4* α(N)=1.182×10^{-6} *17*; α(O)=1.294×10^{-7} *19*;

γ(^{124}Te) (continued)

$E_γ$ [†]	$I_γ$ [†@]	E_i(level)	$J^π_i$	E_f	$J^π_f$	Mult. [#]	δ [#]	α [&]	$I_{(γ+ce)}$ [@]	Comments
										α(IPF)=0.000234 *4* α(K)exp=0.00024 *5* (1969Be70).
1560.53 *8*	2.66 *4*	2886.00	3⁻	1325.51	2⁺	E1(+M2)	−0.2 *2*	0.00059 *10*		α(K)=0.00028 *11*; α(L)=3.4×10⁻⁵ *13*; α(M)=7.E−6 *3*; α(N+..)=0.000265 *23* α(N)=1.3×10⁻⁶ *6*; α(O)=1.4×10⁻⁷ *6*; α(IPF)=0.000263 *24*
1586.1 *3*	0.093 *20*	2834.88	3⁻	1248.60	4⁺					
1622.22 *8*	0.803 *19*	2224.96	4⁺	602.74	2⁺					
1637.43 *8*	3.33 *5*	2886.00	3⁻	1248.60	4⁺					
1658.0 *15*		1657.28	0⁺	0.0	0⁺	E0			0.0006 *3*	$E_γ$: from 1971Zh01. ce(K)(1658.0γ)/ce(K)(602.72γ)=0.00015 *7* (1971Zh01). Mult.: from ce(K). $I_{(γ+ce)}$: deduced from ce(K) ratio (1971Zh01).
1675.60 *8*	1.79 *4*	3001.12	2⁺,3	1325.51	2⁺					
ˣ1685 [‡] *1*										
1690.96 *8*	177.2 *21*	2293.68	3⁻	602.74	2⁺	E1+M2	+0.010 *+3−4*	6.15×10⁻⁴		α(K)=0.000213 *3*; α(L)=2.50×10⁻⁵ *4*; α(M)=4.94×10⁻⁶ *7*; α(N+..)=0.000372 *6* α(N)=9.78×10⁻⁷ *14*; α(O)=1.071×10⁻⁷ *15*; α(IPF)=0.000371 *6* α(K)exp=0.000166 *24* (1969Be70); α(L)exp +α(M)exp=0.000040 (1967Ru04).
1705.63 *17*	0.133 *16*	2308.39	0⁺	602.74	2⁺					
1720.21 *8*	2.91 *9*	2322.97	2⁺	602.74	2⁺	M1(+E2)	+0.18 *20*	7.18×10⁻⁴ *13*		α(K)=0.000484 *10*; α(L)=5.79×10⁻⁵ *11*; α(M)=1.148×10⁻⁵ *22*; α(N+..)=0.0001647 *24* α(N)=2.28×10⁻⁶ *5*; α(O)=2.50×10⁻⁷ *5*; α(IPF)=0.0001622 *24*
1752.51 *8*	0.854 *18*	3001.12	2⁺,3	1248.60	4⁺					
1851.37 *8*	3.43 *5*	2454.06	2⁺	602.74	2⁺	M1+E2	+0.039 *1*	0.00067 *3*		α(K)=0.00039 *3*; α(L)=4.7×10⁻⁵ *4*; α(M)=9.3×10⁻⁶ *7*; α(N+..)=0.000227 *5* α(N)=1.83×10⁻⁶ *13*; α(O)=2.01×10⁻⁷ *15*; α(IPF)=0.000225 *5* α(K)exp=0.00061 *18* (1969Be70).
1918.56 *8*	2.80 *4*	2521.33	2⁺	602.74	2⁺	M1(+E2)	−0.02 *3*	6.98×10⁻⁴		α(K)=0.000387 *6*; α(L)=4.62×10⁻⁵ *7*; α(M)=9.16×10⁻⁶ *13*; α(N+..)=0.000255 *4* α(N)=1.82×10⁻⁶ *3*; α(O)=2.00×10⁻⁷ *3*; α(IPF)=0.000253 *4* α(K)exp=0.00045 *15* (1969Be70).

^{124}I ε decay 1998Wa18,1969Ra31,1992Wo03 (continued)

γ(^{124}Te) (continued)

E_γ†	I_γ†@	E_i(level)	J^π_i	E_f	J^π_f	Mult.#	δ#	α&	Comments
x2021‡ 2	<0.1‡								
2038.43 8	5.71 8	2641.20	2^+	602.74	2^+	E2		6.67×10^{-4}	α(K)=0.000305 5; α(L)=3.64×10^{-5} 5; α(M)=7.21×10^{-6} 10; α(N+..)=0.000318 5 α(N)=1.428×10^{-6} 20; α(O)=1.563×10^{-7} 22; α(IPF)=0.000317 5 α(K)exp=0.00029 7 (1969Be70).
2078.67 8	5.72 8	2681.45	2^+	602.74	2^+	M1+E2	−0.14 3	7.07×10^{-4}	α(K)=0.000327 5; α(L)=3.90×10^{-5} 6; α(M)=7.73×10^{-6} 11; α(N+..)=0.000333 5 α(N)=1.533×10^{-6} 22; α(O)=1.686×10^{-7} 24; α(IPF)=0.000331 5 α(K)exp=0.00029 7 (1969Be70).
2090.94 8	9.91 14	2693.73	3^-	602.74	2^+	E1(+M2)	+0.03 2	8.38×10^{-4}	α(K)=0.0001522 23; α(L)=1.78×10^{-5} 3; α(M)=3.52×10^{-6} 6; α(N+..)=0.000664 10 α(N)=6.97×10^{-7} 11; α(O)=7.65×10^{-8} 12; α(IPF)=0.000664 10 α(K)exp=0.00013 4 (1969Be70).
2098.81 8	2.45 4	2701.53	2^-	602.74	2^+				
2144.21 8	1.68 3	2746.96	$1^{(-)}$	602.74	2^+				α(K)exp=0.00025 8 (1969Be70).
x2214.7‡ 5	0.17‡ 8								
2232.03 8	8.82 13	2834.88	3^-	602.74	2^+	E1(+M2)	+0.03 8	9.17×10^{-4}	α(K)=0.000138 5; α(L)=1.61×10^{-5} 7; α(M)=3.18×10^{-6} 13; α(N+..)=0.000760 13 α(N)=6.30×10^{-7} 25; α(O)=6.9×10^{-8} 3; α(IPF)=0.000759 13
x2275.8‡ 5	0.10‡ 5								
2283.06 8	8.42 13	2886.00	3^-	602.74	2^+	E1+M2	+0.06 2	9.45×10^{-4}	α(K)=0.0001342 22; α(L)=1.57×10^{-5} 3; α(M)=3.10×10^{-6} 6; α(N+..)=0.000792 12 α(N)=6.14×10^{-7} 11; α(O)=6.74×10^{-8} 12; α(IPF)=0.000791 12 α(K)exp=0.000075 25 (1969Be70).
2294.4‡ 5	0.17‡ 3	2293.68	3^-	0.0	0^+				
2385.10 5	0.204 7	2987.86	$1,2^+$	602.74	2^+				
2453.9‡ 3	1.1‡ 3	2454.06	2^+	0.0	0^+	E2		7.68×10^{-4}	α(K)=0.000219 3; α(L)=2.59×10^{-5} 4; α(M)=5.13×10^{-6} 8; α(N+..)=0.000518 8 α(N)=1.017×10^{-6} 15; α(O)=1.115×10^{-7} 16; α(IPF)=0.000517 8 α(K)exp=0.00027 15 (1969Be70).
2681.5‡ 2	0.5‡ 2	2681.45	2^+	0.0	0^+				
2746.9‡ 1	7.6‡ 3	2746.96	$1^{(-)}$	0.0	0^+				α(K)exp=0.00017 6 (1969Be70).
2987.6‡ 3	0.13‡ 6	2987.86	$1,2^+$	0.0	0^+				

† From 1998Wa18, unless otherwise indicated.
‡ From 1969Ra31.
# From adopted gammas, unless otherwise indicated; α′s in table are α theory from 1968Ha53.
@ For absolute intensity per 100 decays, multiply by 0.0629 6.

γ(^{124}Te) (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.

[x] γ ray not placed in level scheme.

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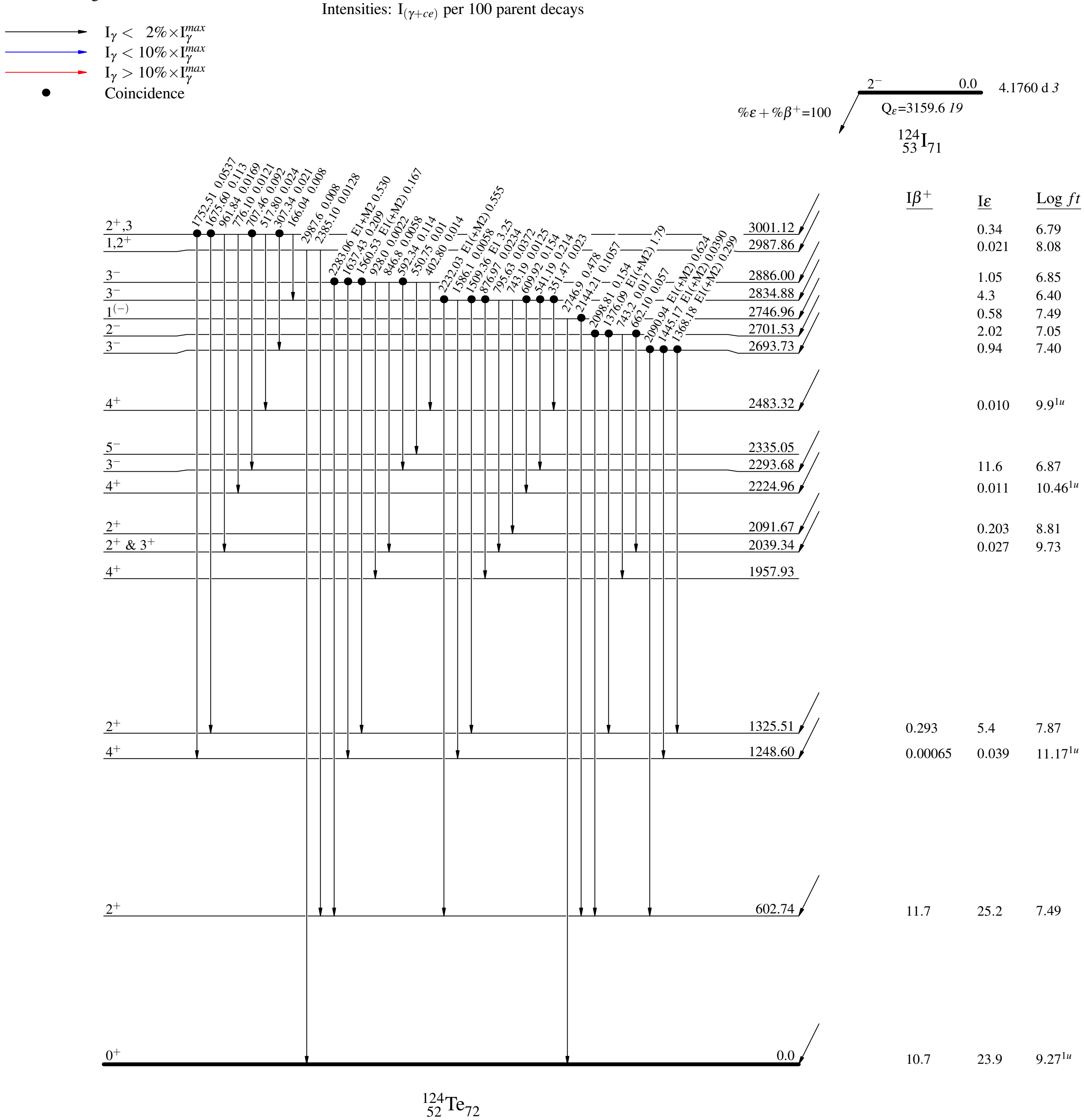
^{124}I ε decay 1998Wa18,1969Ra31,1992Wo03

Decay Scheme

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



^{124}I ε decay 1998Wa18,1969Ra31,1992Wo03

Decay Scheme (continued)

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