^{127}Cs β^+ decay 1990Ma46

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	A. Hashizume	NDS 112, 1647 (2011)	1-Oct-2009

Parent: ^{127}Cs: E=0.0; J$^\pi$=1/2$^+$; $T_{1/2}$=6.25 h *10*; Q(β^+)=2081 *6*; %β^+ decay=100.0

The decay scheme is that proposed by 1990Ma46; see also ^{127}Xe IT decay (69.2 s). The 1236, 1410, and 1481 levels proposed by 1976Ge18 have been not adopted in this scheme.

2004He22: ^{11}B(E=52 MeV) on natural Sn, measured σ, no decay data.

1990Ma46: ^{32}S(E=145 MeV) on ^{98}Mo, on-line mass separation; γ, ce, $\gamma\gamma$ coin, (γ)(ce) coin.

1990Ga02: ^{127}I(α,4n) E=60 MeV, chem; γ, $\gamma\gamma$ coin, $\gamma\gamma(\theta)$.

1976Ge18: ^{127}I(^{3}He,3n), ^{116}Cd(^{14}N,3n), ^{118}Sn(^{12}C,3n)^{127}Ba β^+ decay, chem; γ, $\gamma\gamma$ coin.

1967Sp08: Ce(p,spallation) E=660 MeV, chem; semi γ, magnetic spectrometer β^+, ce.

Others: γ, $\gamma\gamma$ coin (1972Jh01), β^+ (1975We23).

^{127}Xe Levels

E(level)†	J$^\pi$‡	$T_{1/2}$
0.0	1/2$^+$	36.346 d *3*
124.748 *20*	3/2$^+$	
297.15 *11*	9/2$^-$	69.2 s *9*
321.546 *20*	3/2$^+$	
342.22 *4*	7/2$^+$	
375.445 *25*	5/2$^+$	
411.957 *22*	1/2$^+$	
419.58 *6*	5/2$^-$,7/2$^-$,9/2$^-$	
509.97 *3*	(3/2)$^+$	
530.33 *4*	7/2$^+$	
587.053 *22*	3/2$^+$	
711.60 *3*	7/2$^+$	
720.09 *3*		
878.12 *6*		
931.065 *24*	3/2$^+$	
976.07 *3*	1/2,3/2,5/2$^+$	
1196.85 *4*	1/2$^+$,3/2$^+$	
1306.333 *24*	3/2$^+$	
1402.60 *3*	(3/2)$^+$	
1534.623 *22*	(3/2$^+$)	
1558.25 *6*	1/2,3/2,5/2$^+$	
1582.664 *23*	1/2$^+$,3/2$^+$	
1611.96 *8*		
1716.55 *5*	1/2,3/2	
1741.33 *8*	1/2,3/2	
1774.91? *20*	1/2,3/2	
1806.46 *4*	(1/2$^+$,3/2)	
1831.00 *4*	(1/2$^+$)	
1894.80 *9*	(1/2$^+$,3/2)	
1972.36 *11*	1/2,3/2	
2033.16 *7*	1/2,3/2	

† From a least-squares fit to E_γ's.
‡ From Adopted Levels.

ε,β^+ radiations

Total ε/β^+=27.7 *17* (1962Fr08).

E(decay)	E(level)	Iε‡	Log *ft*	I($\varepsilon+\beta^+$)‡	Comments
(48 *6*)	2033.16	0.0063 *10*	5.78 *25*	0.0063 *10*	εK=0.36 *18*; εL=0.48 *13*; εM+=0.16 *5*
(109 *6*)	1972.36	0.0019 *7*	7.47 *18*	0.0019 *7*	εK=0.752 *10*; εL=0.191 *8*; εM+=0.0562 *24*
(186 *6*)	1894.80	0.0094 *7*	7.37 *5*	0.0094 *7*	εK=0.8071 *22*; εL=0.1502 *16*; εM+=0.0427 *6*
(250 *6*)	1831.00	0.0811 *25*	6.73 *3*	0.0811 *25*	εK=0.8223 *11*; εL=0.1388 *8*; εM+=0.0389 *3*
(275 *6*)	1806.46	0.0815 *22*	6.82 *3*	0.0815 *22*	εK=0.8259 *9*; εL=0.1360 *7*; εM+=0.03804 *20*
(306 *6*)	1774.91?	0.017 *7*	7.61 *18*	0.017 *7*	εK=0.8296 *7*; εL=0.1332 *5*; εM+=0.03713 *16*
(340 *6*)	1741.33	0.0063 *7*	8.14 *6*	0.0063 *7*	εK=0.8327 *5*; εL=0.1309 *4*; εM+=0.03638 *13*
(364 *6*)	1716.55	0.0585 *25*	7.24 *3*	0.0585 *25*	εK=0.8346 *5*; εL=0.1295 *4*; εM+=0.03592 *11*
(469 *6*)	1611.96	0.0176 *10*	7.99 *3*	0.0176 *10*	εK=0.8401 *3*; εL=0.12531 *19*; εM+=0.03457 *6*
(498 *6*)	1582.664	0.28 *8*	6.85 *13*	0.28 *8*	εK=0.8412 *3*; εL=0.12448 *17*; εM+=0.03431 *6*

Continued on next page (footnotes at end of table)

^{127}Cs β^+ decay 1990Ma46 (continued)

ϵ,β^+ radiations (continued)

E(decay)	E(level)	Iβ^+ †‡	Iε ‡	Log *ft*	I($\varepsilon+\beta^+$) ‡	Comments
(523 *6*)	1558.25		0.0208 *13*	8.02 *3*	0.0208 *13*	εK=0.8420 *2*; εL=0.12386 *15*; εM+=0.03411 *5*
(546 *6*)	1534.623		0.51 *10*	6.67 *9*	0.51 *10*	εK=0.8427 *2*; εL=0.12332 *14*; εM+=0.03394 *5*
(678 *6*)	1402.60		0.1145 *25*	7.519 *15*	0.1145 *25*	εK=0.8457 *1*; εL=0.12104 *9*; εM+=0.03321 *3*
(775 *6*)	1306.333		0.475 *13*	7.021 *16*	0.475 *13*	εK=0.8473; εL=0.11990 *7*; εM+=0.03284 *2*
(884 *6*)	1196.85		0.325 *11*	7.305 *18*	0.325 *11*	εK=0.8486; εL=0.11891 *5*; εM+=0.03253 *2*
(1150 *6*)	931.065		1.16 *4*	6.988 *18*	1.16 *4*	εK=0.8506; εL=0.11733 *3*; εM+=0.032021 *9*
(1203 *6*)	878.12		0.026 *5*	8.68 *9*	0.026 *5*	εK=0.8509; εL=0.11709 *3*; εM+=0.031946 *9*
(1361 *6*)	720.09	4.0×10^{-5} *16*	0.026 *10*	8.79 *17*	0.026 *10*	av Eβ=161.5 *27*; εK=0.8504; εL=0.11635 *4*; εM+=0.03172 *1*
(1494 *6*)	587.053	0.056 *3*	9.53 *18*	6.306 *12*	9.59 *18*	av Eβ=219.9 *27*; εK=0.8472 *3*; εL=0.11546 *5*; εM+=0.03146 *2*
(1551 *6*)	530.33	$7.\times10^{-5}$ *3*	0.008 *3*	9.42 *17*	0.008 *3*	av Eβ=244.7 *27*; εK=0.8447 *4*; εL=0.11495 *6*; εM+=0.03131 *2*
(1571 *6*)	509.97	0.00034 *7*	0.032 *7*	8.83 *10*	0.032 *7*	av Eβ=253.5 *27*; εK=0.8435 *4*; εL=0.11473 *7*; εM+=0.03125 *2*
(1661 *6*)	419.58	0.00050 *6*	0.027 *3*	8.96 *5*	0.027 *3*	av Eβ=292.9 *27*; εK=0.8370 *6*; εL=0.11361 *9*; εM+=0.03093 *3*
(1669 *6*)	411.957	1.31 *5*	66.8 *11*	5.558 *11*	68.1 *11*	av Eβ=296.3 *27*; εK=0.8363 *6*; εL=0.11350 *9*; εM+=0.03090 *3*
(1706 *6*)	375.445	0.0035 *7*	0.15 *3*	8.24 *9*	0.15 *3*	av Eβ=312.2 *27*; εK=0.8328 *7*; εL=0.1129 *1*; εM+=0.03075 *3*
(1759 *6*)	321.546	0.023 *1*	0.72 *3*	7.574 *20*	0.74 *3*	av Eβ=335.7 *27*; εK=0.8268 *8*; εL=0.11200 *12*; εM+=0.03049 *4*
(1956 *6*)	124.748	0.40 *2*	5.4 *3*	6.791 *24*	5.8 *3*	av Eβ=421.8 *27*; εK=0.7951 *12*; εL=0.10734 *18*; εM+=0.02920 *5* E(decay): E(β^+)≈910 (1967Sp08). Iβ^+: others: 0.47% (1975We23), ≈0.4% (1967Sp08).
(2081 *6*)	0.0	1.25 *15*	11.1 *13*	6.53 *6*	12.3 *15*	av Eβ=476.7 *27*; εK=0.7670 *15*; εL=0.10336 *21*; εM+=0.02812 *6* I($\varepsilon+\beta^+$): from Iβ(1063β) and ε/β^+ theory. E(decay): E(β^+)=1040 *20* (1975We23), 1068 *20* (1967Sp08), 1063 *10* (1954Ma54).

† From (Iβ^+ to the ground state) /(Iβ^+ to the 411.965 state)=1 (1967Sp08,1975We23).
‡ Absolute intensity per 100 decays.

$\gamma(^{127}Xe)$

Iγ normalization: I($\varepsilon+\beta^+$ to g.s.)=12.4% *5* is deduced from I(β^+ to g.s.)/I(β^+ to 411.957 level)=1 (1967Sp08) and Iε/Iβ^+. I($\varepsilon+\beta^+$ to 297 level)=0 is also assumed (evaluators).

α(K)exp from 1990Ma46, unless otherwise noted. Values are normalized to α(K)exp(124.7γ, M1+1%E2)=0.380.

E_γ[†‡]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ	α[&]	Comments
77.36 *5*	0.030 *3*	419.58	5/2$^-$,7/2$^-$,9/2$^-$	342.22	7/2$^+$	E1		0.432	α(K)=0.369 *6*; α(L)=0.0503 *8*; α(M)=0.01015 *15*; α(N+..)=0.00230 *4* α(N)=0.00206 *3*; α(O)=0.000240 *4*
90.7 *1*	0.32 *1*	411.957	1/2$^+$	321.546	3/2$^+$	M1+E2	0.00 *2*	1.084	α(K)exp=0.78 *11* α(K)=0.930 *14*; α(L)=0.1230 *18*; α(M)=0.0250 *4*; α(N+..)=0.00582 *9* α(N)=0.00517 *8*; α(O)=0.000645 *10* δ: from (90.7γ)(321.5γ)(θ) (1990Ga02).
[x]115.13 *5*	0.026 *1*								
124.70 *5*	18.1 *2*	124.748	3/2$^+$	0.0	1/2$^+$	M1+E2	+0.12 *2*	0.445	α(K)exp=0.38 *5*; K/L=6.7 *13* α(K)=0.381 *6*; α(L)=0.0516 *10*; α(M)=0.01051 *21*; α(N+..)=0.00244 *5* α(N)=0.00217 *5*; α(O)=0.000269 *5* K:L:M=0.38 *5*:0.057 *8*:0.0078 *12*. Mult.: from α(K)exp. δ: from ^{127}Xe IT decay (1967Ge15).
172.4[b] *1*	0.03[d] *2*	297.15	9/2$^-$	124.748	3/2$^+$	E3		1.627	α(K)=0.912 *13*; α(L)=0.564 *8*; α(M)=0.1238 *18*; α(N+..)=0.0269 *4* α(N)=0.0245 *4*; α(O)=0.00243 *4* Additional information 1.
175.11[a] *5*	0.186 *3*	587.053	3/2$^+$	411.957	1/2$^+$	M1,E2		0.21 *5*	α(K)=0.172 *25*; α(L)=0.032 *13*; α(M)=0.007 *3*; α(N+..)=0.0015 *6* α(N)=0.0014 *6*; α(O)=0.00015 *6* α(K)exp=0.36 *6* for an unresolved transition
188.4[b] *1*	[d]	509.97	(3/2)$^+$	321.546	3/2$^+$				
196.73 *5*	0.604 *8*	321.546	3/2$^+$	124.748	3/2$^+$	M1+E2	−0.005 *15*	0.1250	α(K)exp=0.100 *10*; K/L=9.1 *19* α(K)=0.1075 *15*; α(L)=0.01399 *20*; α(M)=0.00284 *4*; α(N+..)=0.000661 *10* α(N)=0.000588 *9*; α(O)=7.35$\times10^{-5}$ *11* δ: from (196.7γ)(124.7γ)(θ) (1990Ga02).
201.6 *1*	0.014[c] *4*	711.60	7/2$^+$	509.97	(3/2)$^+$				
211.57 *5*	0.130 *5*	587.053	3/2$^+$	375.445	5/2$^+$	M1		0.1027	α(K)exp=0.073 *13* α(K)=0.0884 *13*; α(L)=0.01148 *16*; α(M)=0.00233 *4*; α(N+..)=0.000543 *8* α(N)=0.000482 *7*; α(O)=6.03$\times10^{-5}$ *9*
217.48 *5*	0.066 *5*	342.22	7/2$^+$	124.748	3/2$^+$	E2		0.1210	α(K)exp=0.076 *19* α(K)=0.0967 *14*; α(L)=0.0194 *3*; α(M)=0.00404 *6*;

$^{127}_{54}Xe_{73}$-3

γ(^{127}Xe) (continued)

E_γ [†‡]	I_γ [@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult. [#]	δ	α [&]	Comments
									α(N+..)=0.000904 *13* α(N)=0.000813 *12*; α(O)=9.03×10^{-5} *13*
250.71 *5*	0.06 *2*	375.445	5/2$^+$	124.748	3/2$^+$				
265.51 *5*	0.207 *3*	587.053	3/2$^+$	321.546	3/2$^+$	M1+E2	+1.1 *3*	0.0594 *13*	α(K)exp=0.045 *10* α(K)=0.0496 *8*; α(L)=0.0078 *5*; α(M)=0.00161 *11*; α(N+..)=0.000367 *22* α(N)=0.000329 *20*; α(O)=3.87×10^{-5} *18* δ: from (265.5γ)(321.5γ)(θ) (1990Ga02).
287.16 *5*	6.09 *7*	411.957	1/2$^+$	124.748	3/2$^+$	M1+E2	+0.55 *30*	0.0462 *8*	α(K)exp=0.045 *6*; K/L=6.8 *13* α(K)=0.0394 *6*; α(L)=0.0055 *4*; α(M)=0.00112 *8*; α(N+..)=0.000258 *16* α(N)=0.000230 *15*; α(O)=2.81×10^{-5} *13* Other: α(K)exp=0.036 *13*, K/L=6.1 (1967Sp08). δ: from (287.1γ)(124.7γ)(θ) (1990Ga02).
308.07 *5*	0.019 *3*	720.09		411.957	1/2$^+$				
321.54 *5*	2.08 *2*	321.546	3/2$^+$	0.0	1/2$^+$	M1+E2	−0.90 *4*	0.0338	α(K)exp=0.036 *5*; K/L=13 *3* α(K)=0.0286 *4*; α(L)=0.00414 *7*; α(M)=0.000848 *13*; α(N+..)=0.000195 *3* α(N)=0.000174 *3*; α(O)=2.10×10^{-5} *3* δ: from 1983Ir02 in (α,nγ).
330.27 *5*	0.011 *1*	1306.333	3/2$^+$	976.07	1/2,3/2,5/2$^+$				
336.1 *1*	0.017 *2*	711.60	7/2$^+$	375.445	5/2$^+$				
343.98 *5*	0.091 *3*	931.065	3/2$^+$	587.053	3/2$^+$				
369.41 *5*	0.014 *2*	711.60	7/2$^+$	342.22	7/2$^+$				
375.35 *5*	0.721 *9*	375.445	5/2$^+$	0.0	1/2$^+$	(E2)		0.0207	α(K)exp=0.019 *3* α(K)=0.01732 *25*; α(L)=0.00273 *4*; α(M)=0.000561 *8*; α(N+..)=0.0001278 *18* α(N)=0.0001144 *16*; α(O)=1.341×10^{-5} *19*
385.20 *5*	0.148 *3*	509.97	(3/2)$^+$	124.748	3/2$^+$	M1,E2		0.0203 *12*	α(K)=0.0173 *13*; α(L)=0.00243 *9*; α(M)=0.000496 *21*; α(N+..)=0.000114 *4* α(N)=0.000102 *4*; α(O)=1.236×10^{-5} *18*
^{x}388.71 *5*	0.018 *2*								
390.05 *5*	0.084 *2*	711.60	7/2$^+$	321.546	3/2$^+$				
^{x}400.20 *5*	0.021 *6*								
^{x}401.90 *5*	0.050 *6*								
405.68 *5*	0.025 *4*	530.33	7/2$^+$	124.748	3/2$^+$				
411.95 *5*	100	411.957	1/2$^+$	0.0	1/2$^+$	(M1)		0.0181	α(K)exp=0.016 *2*; K/L=7.0 *13* α(K)=0.01559 *22*; α(L)=0.00198 *3*; α(M)=0.000401 *6*; α(N+..)=9.36×10^{-5} *14* α(N)=8.31×10^{-5} *12*; α(O)=1.043×10^{-5} *15* K:L:M=16 *2*:2.3 *3*:0.9 *1*. Other: α(K)exp=0.014 *6* (1967Sp08).
421.00 *5*	0.021 *3*	931.065	3/2$^+$	509.97	(3/2)$^+$				

$^{127}_{54}$Xe$_{73}$-4

γ(^{127}Xe) (continued)

E_γ[†‡]	I_γ[@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	δ	α[&]	Comments
[x]427.00 *5*	0.013 *3*								
[x]439.53 *5*	0.016 *1*								
[x]458.5 *1*	0.006 *1*								
462.31 *5*	8.08 *8*	587.053	3/2$^+$	124.748	3/2$^+$	M1+E2	+0.6 *4*	0.0129 *6*	α(K)exp=0.0091 *13*; K/L=6.5 *13* α(K)=0.0111 *6*; α(L)=0.00146 *3*; α(M)=0.000296 *6*; α(N+..)=6.87×10^{-5} *14* α(N)=6.11×10^{-5} *12*; α(O)=7.58×10^{-6} *22* K:L:M=9.1 *13*:1.4 *2*:0.55 *8*. Others: α(K)exp 0.0124 *50*, K/L=6.3 (1967Sp08). δ: from (462.3γ)(124.5γ)(θ) (1990Ga02).
[x]480.3 *1*	0.006 *1*								
519.13 *5*	0.075 *2*	931.065	3/2$^+$	411.957	1/2$^+$				
[x]526.2 *1*	0.005 *3*								
[x]534.6 *1*	0.007 *2*								
[x]545.5 *1*	0.007 *1*								
[x]548.0 *1*	0.005 *1*								
555.7 *1*	0.25 *4*	931.065	3/2$^+$	375.445	5/2$^+$	[e]			
556.57 *5*	0.042 *7*	878.12		321.546	3/2$^+$	[e]			
586.7 *1*	0.037[c] *4*	711.60	7/2$^+$	124.748	3/2$^+$	[g]			
587.01 *5*	6.7 *1*	587.053	3/2$^+$	0.0	1/2$^+$	M1(+E2)[g]	<0.9	0.0071 *4*	α=0.0071 *4*; α(K)=0.0062 *4*; α(L)=0.00079 *3*; α(M)=0.000160 *6*; α(N+..)=3.71×10^{-5} *15* α(N)=3.30×10^{-5} *13*; α(O)=4.12×10^{-6} *19*
588.8 *1*		931.065	3/2$^+$	342.22	7/2$^+$				
594.8 *1*	0.01 *1*	1306.333	3/2$^+$	711.60	7/2$^+$				
595.3 *1*	0.08 *1*	720.09		124.748	3/2$^+$				
603.57 *5*	0.026 *1*	1534.623	(3/2$^+$)	931.065	3/2$^+$				
606.66 *5*	0.017 *1*	1582.664	1/2$^+$,3/2$^+$	976.07	1/2,3/2,5/2$^+$				
609.6[b] *1*	0.06[d] *1*	931.065	3/2$^+$	321.546	3/2$^+$				
609.9[b] *1*	0.04[d] *1*	1196.85	1/2$^+$,3/2$^+$	587.053	3/2$^+$				
[x]634.4 *1*	0.009 *5*								
[x]646.60 *5*	0.017 *2*								
654.51 *5*	0.022 *1*	976.07	1/2,3/2,5/2$^+$	321.546	3/2$^+$				
[x]658.6 *1*	0.005 *1*								
[x]659.32 *5*	0.010 *1*								
[x]678.84 *5*	0.020 *1*								
691.1 *1*	0.004 *1*	1402.60	(3/2)$^+$	711.60	7/2$^+$				
719.2 *1*	0.05 *1*	1306.333	3/2$^+$	587.053	3/2$^+$	[f]			
720.2 *1*	0.03 *1*	720.09		0.0	1/2$^+$	[f]			
[x]727.07 *5*	0.019 *1*								
[x]731.07 *5*	0.023 *1*								
[x]736.9 *1*	0.005 *1*								
[x]766.0 *1*	0.004 *1*								

γ(^{127}Xe) (continued)

E_γ[†‡]	I_γ[@i]	E_i(level)	J^π_i	E_f	J^π_f	Mult.[#]	δ	α[&]	Comments
[x]768.1 *1*	0.006 *1*								
776.07 *5*	0.012 *1*	1306.333	3/2$^+$	530.33	7/2$^+$				
785.4 *1*	0.007 *1*	1716.55	1/2,3/2	931.065	3/2$^+$				
[x]794.7 *1*	0.008 *1*								
796.5 *1*	0.006 *1*	1306.333	3/2$^+$	509.97	(3/2)$^+$				
806.34 *5*	0.723 *8*	931.065	3/2$^+$	124.748	3/2$^+$	M1+E2	+0.14 *3*	0.00351 *5*	α(K)exp=0.0031 *5* α=0.00351 *5*; α(K)=0.00303 *5*; α(L)=0.000378 *6*; α(M)=7.63×10^{-5} *11*; α(N+..)=1.78×10^{-5} *3* α(N)=1.581×10^{-5} *23*; α(O)=1.99×10^{-6} *3* δ: −8.7 +*19*−*34* from $\gamma\gamma(\theta)$ (1990Ga02).
814.58 *5*	0.042 *3*	1534.623	(3/2$^+$)	720.09					
[x]816.2 *1*	0.005 *3*								
[x]821.0 *1*	0.015 *2*								
822.98 *5*	0.228 *4*	1534.623	(3/2$^+$)	711.60	7/2$^+$	(E2)		0.00251 *4*	α(K)exp=0.0031 *7* α=0.00251 *4*; α(K)=0.00216 *3*; α(L)=0.000284 *4*; α(M)=5.76×10^{-5} *8*; α(N+..)=1.334×10^{-5} *19* α(N)=1.188×10^{-5} *17*; α(O)=1.463×10^{-6} *21*
830.3 *1*	0.008 *1*	1806.46	(1/2$^+$,3/2)	976.07	1/2,3/2,5/2$^+$				
[x]835.4 *1*	0.004 *1*								
[x]860.4 *1*	0.007 *1*								
862.56 *5*	0.012 *1*	1582.664	1/2$^+$,3/2$^+$	720.09					
875.26 *5*	0.068 *2*	1196.85	1/2$^+$,3/2$^+$	321.546	3/2$^+$				
894.31 *5*	0.030 *1*	1306.333	3/2$^+$	411.957	1/2$^+$				
[x]920.4 *1*	0.003 *1*								
[x]923.9 *1*	0.012 *1*								
930.8 *1*	0.030[c] *7*	1306.333	3/2$^+$	375.445	5/2$^+$	[h]			
931.10[a] *5*	0.66 *1*	931.065	3/2$^+$	0.0	1/2$^+$	M1+E2	<0.5	0.00246 *8*	α=0.00246 *8*; α(K)=0.00213 *7*; α(L)=0.000264 *7*; α(M)=5.34×10^{-5} *14*; α(N+..)=1.25×10^{-5} *4* α(N)=1.11×10^{-5} *3*; α(O)=1.39×10^{-6} *4*
947.6 *1*	0.008 *1*	1534.623	(3/2$^+$)	587.053	3/2$^+$				
[x]964.69 *5*	0.028 *1*								1990Ma46 tentatively assign this as transition from 1306.339 to 342.29.
976.3 *1*	0.003 *1*	976.07	1/2,3/2,5/2$^+$	0.0	1/2$^+$				
984.78 *5*	0.119 *2*	1306.333	3/2$^+$	321.546	3/2$^+$				
990.64 *5*	0.060 *1*	1402.60	(3/2)$^+$	411.957	1/2$^+$				
995.54 *5*	0.059 *1*	1582.664	1/2$^+$,3/2$^+$	587.053	3/2$^+$				
1004.4 *1*	0.0003 *1*	1534.623	(3/2$^+$)	530.33	7/2$^+$				
1024.64 *5*	0.027 *1*	1534.623	(3/2$^+$)	509.97	(3/2)$^+$				
[x]1070.0 *1*	0.003 *1*								
1072.0 *1*	0.04[c] *1*	1196.85	1/2$^+$,3/2$^+$	124.748	3/2$^+$				
1073.0 *1*	0.025[c] *9*	1582.664	1/2$^+$,3/2$^+$	509.97	(3/2)$^+$				
1081.05 *5*	0.032 *1*	1402.60	(3/2)$^+$	321.546	3/2$^+$				
1086.3 *1*	0.009 *1*	1806.46	(1/2$^+$,3/2)	720.09					

$^{127}_{54}$Xe$_{73}$-6

γ(^{127}Xe) (continued)

E_γ [†‡]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α [&]	Comments
1110.86 *5*	0.024 *1*	1831.00	(1/2$^+$)	720.09				
^{x}1120.14 *5*	0.037 *1*							
1129.7 *1*	0.007 *1*	1716.55	1/2,3/2	587.053	3/2$^+$			
1146.2 *1*	0.004 *1*	1558.25	1/2,3/2,5/2$^+$	411.957	1/2$^+$			
^{x}1154.6 *1*	0.008 *1*							
1159.18 *5*	0.071 *1*	1534.623	(3/2$^+$)	375.445	5/2$^+$			
1170.73 *5*	0.092 *2*	1582.664	1/2$^+$,3/2$^+$	411.957	1/2$^+$			
^{x}1178.5 *1*	0.002 *1*							
1181.57 *5*	0.170 *2*	1306.333	3/2$^+$	124.748	3/2$^+$	M1,E2	0.00131 *17*	α(K)exp=0.00098 *26* α=0.00131 *17*; α(K)=0.00113 *15*; α(L)=0.000140 *17*; α(M)=2.8×10^{-5} *4*; α(N+..)=1.09×10^{-5} *7* α(N)=5.9×10^{-6} *7*; α(O)=7.3×10^{-7} *9*; α(IPF)=4.37×10^{-6} *18*
1188.3[j] *1*	0.015 *1*	1774.91?	1/2,3/2	587.053	3/2$^+$			
1192.38 *5*	0.019 *1*	1534.623	(3/2$^+$)	342.22	7/2$^+$			
1196.87 *5*	0.368 *4*	1196.85	1/2$^+$,3/2$^+$	0.0	1/2$^+$	M1,E2	0.00127 *16*	α(K)exp=0.0013 *2*; K/L=6.5 *28* α=0.00127 *16*; α(K)=0.00110 *14*; α(L)=0.000136 *16*; α(M)=2.7×10^{-5} *4*; α(N+..)=1.23×10^{-5} *6* α(N)=5.7×10^{-6} *7*; α(O)=7.1×10^{-7} *9*; α(IPF)=5.93×10^{-6} *24*
1207.1 *1*	0.006 *1*	1582.664	1/2$^+$,3/2$^+$	375.445	5/2$^+$			
1213.08 *5*	0.074 *2*	1534.623	(3/2$^+$)	321.546	3/2$^+$			α(K)exp=0.0015 *5*
1219.3 *1*	0.018 *1*	1806.46	(1/2$^+$,3/2)	587.053	3/2$^+$			
1236.5 *1*	0.017 *1*	1558.25	1/2,3/2,5/2$^+$	321.546	3/2$^+$			
1261.09 *5*	0.147 *2*	1582.664	1/2$^+$,3/2$^+$	321.546	3/2$^+$	M1,E2	0.00115 *14*	α(K)exp=0.0014 *3* α=0.00115 *14*; α(K)=0.00098 *12*; α(L)=0.000121 *14*; α(M)=2.4×10^{-5} *3*; α(N+..)=2.04×10^{-5} *4* α(N)=5.1×10^{-6} *6*; α(O)=6.4×10^{-7} *8*; α(IPF)=1.47×10^{-5} *6*
1290.3 *1*	0.021 *1*	1611.96		321.546	3/2$^+$			
1296.4 *1*	0.007 *1*	1806.46	(1/2$^+$,3/2)	509.97	(3/2)$^+$			
1306.31 *5*	0.316 *5*	1306.333	3/2$^+$	0.0	1/2$^+$	M1,E2	0.00107 *13*	α(K)exp=0.00080 *14* α=0.00107 *13*; α(K)=0.00091 *11*; α(L)=0.000112 *13*; α(M)=2.27×10^{-5} *25*; α(N+..)=2.79×10^{-5} *4* α(N)=4.7×10^{-6} *6*; α(O)=5.9×10^{-7} *7*; α(IPF)=2.26×10^{-5} *8*
1321.4 *1*	0.004 *1*	2033.16	1/2,3/2	711.60	7/2$^+$			
1341.2 *1*	0.014 *1*	1716.55	1/2,3/2	375.445	5/2$^+$			
^{x}1362.1 *1*	0.004 *3*							
^{x}1363.5 *1*	0.025 *3*							1990Ma46 tentatively assign this as the transition from 1774.87 to 411.945.
1365.8 *1*	0.008 *1*	1741.33	1/2,3/2	375.445	5/2$^+$			
1385.3 *1*	0.003 *1*	1972.36	1/2,3/2	587.053	3/2$^+$			
1394.7 *1*	0.025 *3*	1716.55	1/2,3/2	321.546	3/2$^+$			
^{x}1396.1 *1*	0.005 *3*							
1402.56 *5*	0.086 *2*	1402.60	(3/2)$^+$	0.0	1/2$^+$			

$^{127}_{54}$Xe$_{73}$-7

$\gamma(^{127}Xe)$ (continued)

E_γ [†‡]	I_γ [@i]	E_i(level)	J_i^π	E_f	J_f^π	Mult. [#]	α [&]	Comments
1409.81 *5*	0.180 *3*	1534.623	(3/2$^+$)	124.748	3/2$^+$			
1419.12 *5*	0.085 *3*	1831.00	(1/2$^+$)	411.957	1/2$^+$			
1431.1 *1*	0.006 *1*	1806.46	(1/2$^+$,3/2)	375.445	5/2$^+$			
1433.7 *1*	0.003 *1*	1558.25	1/2,3/2,5/2$^+$	124.748	3/2$^+$			
[x]1438.4 *1*	0.0006 *5*							
1446.1 *1*	0.004 *1*	2033.16	1/2,3/2	587.053	3/2$^+$			
[x]1452.7 *1*	0.038 *5*							1990Ma46 tentatively assign this as the transition from 1774.87 to 321.564.
1455.2[j] *1*	0.008 *4*	1831.00	(1/2$^+$)	375.445	5/2$^+$			
1457.86 *5*	0.018 *1*	1582.664	1/2$^+$,3/2$^+$	124.748	3/2$^+$			
1484.98 *5*	0.042 *1*	1806.46	(1/2$^+$,3/2)	321.546	3/2$^+$			
1487.3 *1*	0.007 *1*	1611.96		124.748	3/2$^+$			
1509.3 *1*	0.015 *1*	1831.00	(1/2$^+$)	321.546	3/2$^+$			
1519.2 *1*	0.012 *1*	1894.80	(1/2$^+$,3/2)	375.445	5/2$^+$			
1534.62 *5*	0.134 *2*	1534.623	(3/2$^+$)	0.0	1/2$^+$	(M1,E2)	0.00084 *8*	α(K)exp=0.00053 *10* α=0.00084 *8*; α(K)=0.00065 *7*; α(L)=8.0×10^{-5} *8*; α(M)=1.61×10^{-5} *16*; α(N+..)=9.41×10^{-5} *17* α(N)=3.3×10^{-6} *4*; α(O)=4.2×10^{-7} *5*; α(IPF)=9.03×10^{-5} *19*
1558.3 *1*	0.009 *1*	1558.25	1/2,3/2,5/2$^+$	0.0	1/2$^+$			
1582.66 *5*	0.069 *1*	1582.664	1/2$^+$,3/2$^+$	0.0	1/2$^+$	M1,E2	0.00081 *7*	α(K)exp=0.00059 *14* α=0.00081 *7*; α(K)=0.00061 *6*; α(L)=7.5×10^{-5} *7*; α(M)=1.50×10^{-5} *15*; α(N+..)=0.0001121 *19* α(N)=3.1×10^{-6} *3*; α(O)=3.9×10^{-7} *4*; α(IPF)=0.0001086 *20*
1592.3[j] *1*	0.020 *1*	1716.55	1/2,3/2	124.748	3/2$^+$			
1649.6[j] *1*	0.017 *1*	1774.91?	1/2,3/2	124.748	3/2$^+$			
1681.68 *5*	0.035 *1*	1806.46	(1/2$^+$,3/2)	124.748	3/2$^+$			
1716.6 *1*	0.040 *1*	1716.55	1/2,3/2	0.0	1/2$^+$			
1741.4 *1*	0.0020 *3*	1741.33	1/2,3/2	0.0	1/2$^+$			
1770.4 *2*	0.0020 *3*	1894.80	(1/2$^+$,3/2)	124.748	3/2$^+$			
1774.9 *2*	0.027 *1*	1774.91?	1/2,3/2	0.0	1/2$^+$			
1806.5 *2*	0.0045 *4*	1806.46	(1/2$^+$,3/2)	0.0	1/2$^+$			
1831.0 *2*	0.0050 *4*	1831.00	(1/2$^+$)	0.0	1/2$^+$			
1895.0 *2*	0.0009 *3*	1894.80	(1/2$^+$,3/2)	0.0	1/2$^+$			
1909.0 *2*	0.0020 *3*	2033.16	1/2,3/2	124.748	3/2$^+$			
1973.4[j] *2*	0.022 *1*	1972.36	1/2,3/2	0.0	1/2$^+$			

† From 1990Ma46.

‡ Except assigned γ's in ^{127}Cs β decay by 1990Ma46, the authors report following unassigned E_γ's from $\gamma\gamma$ coincidence: (100), 104, 141, (147), (161), (167), (168), 181, 207, (214), 220, 228, 230, 235, (241), 244, 248, (275), (284), (299), 338, 378, 395, (398), 449, 474, (513), 547, 553, (563), 577, 587, (636), (683), (685), 712, 717, 770, 802, 815, (822), 827, 845, 882, 956, 980, 1056, (1071), 1126, 1229, 1242, 1285 keV. Possible escape peaks are shown in parentheses

$\gamma(^{127}Xe)$ (continued)

(evaluator).

[#] From $\gamma\gamma(\theta)$ (1990Ga02) and α(K)exp (1990Ma46).

[@] Value relative to I(411.9γ)=100.

[&] Theoretical conversion coefficients are calculated using BrIcc code for the multipolarity and mixing ratio indicated.

[a] Unresolved peak in singles spectrum (1990Ma46).

[b] Energy difference between relevant levels (1990Ma46), uncertainty is given by the evaluators.

[c] From coincidence data.

[d] No intensity is given by 1990Ma46.

[e] α(K)exp=0.0078 *15* is for Eγ=555.7+556.57.

[f] α(K)exp=0.0029 *14* is for Eγ=719.2+720.2.

[g] α(K)exp=0.0067 *9*, K/L=7.4 *15* is for Eγ=586.7+587.01. Authors′ Eγ=558 in their table 2 is a misprint. Other: 0.0057 *25* (1967Sp08). With mult(586.7γ)$\neq$E0, the data lead to mult(587.01γ)=M1(+E2) with δ<0.9.

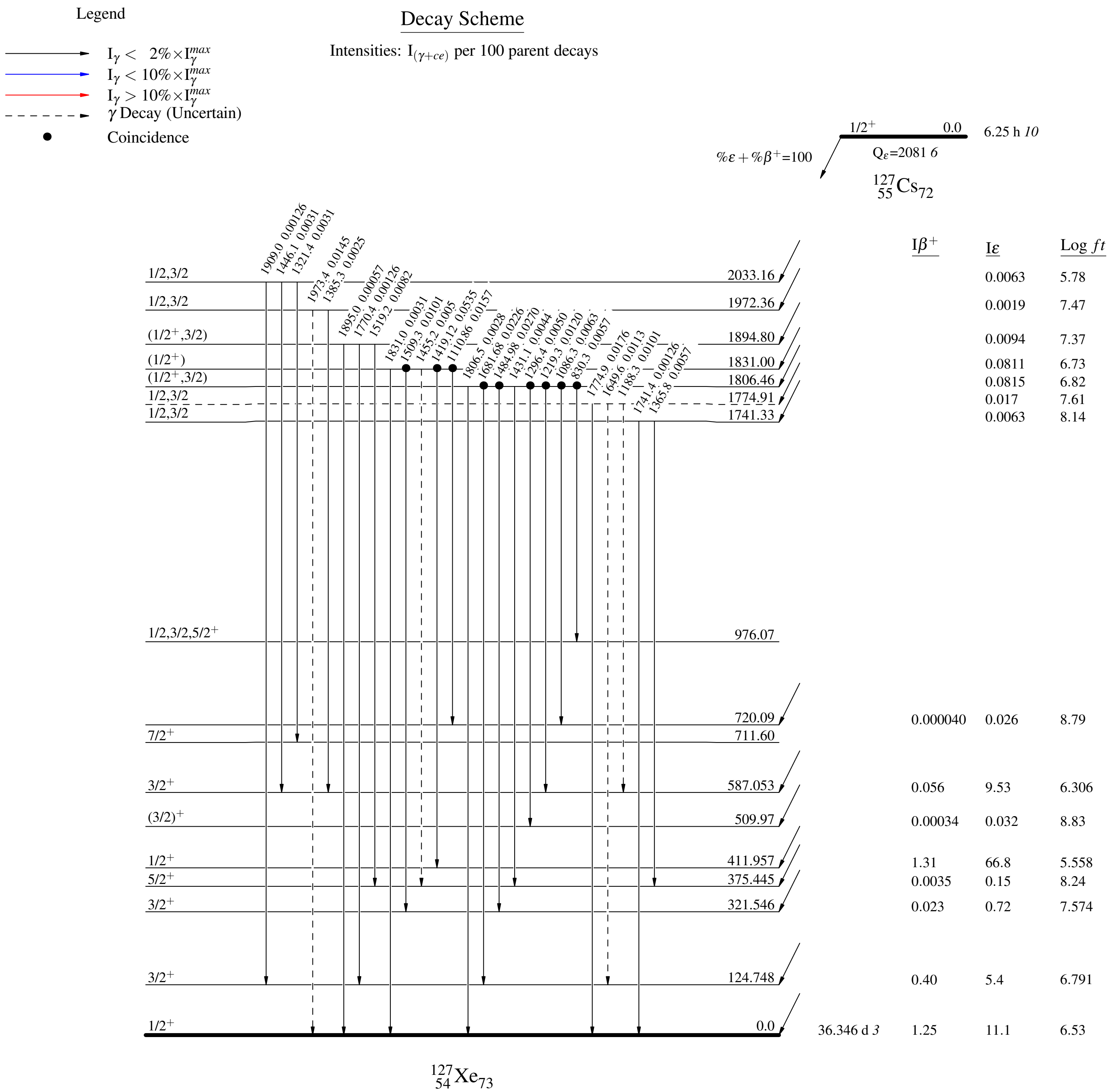
[h] α(K)exp=0.0025 *4* is for Eγ=930.8+931.10. With mult(930.8γ) $\neq$E0, the data lead to mult(931.10γ)=M1(+E2) with δ<0.5.

[i] For absolute intensity per 100 decays, multiply by 0.629 *10*.

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

[x] γ ray not placed in level scheme.

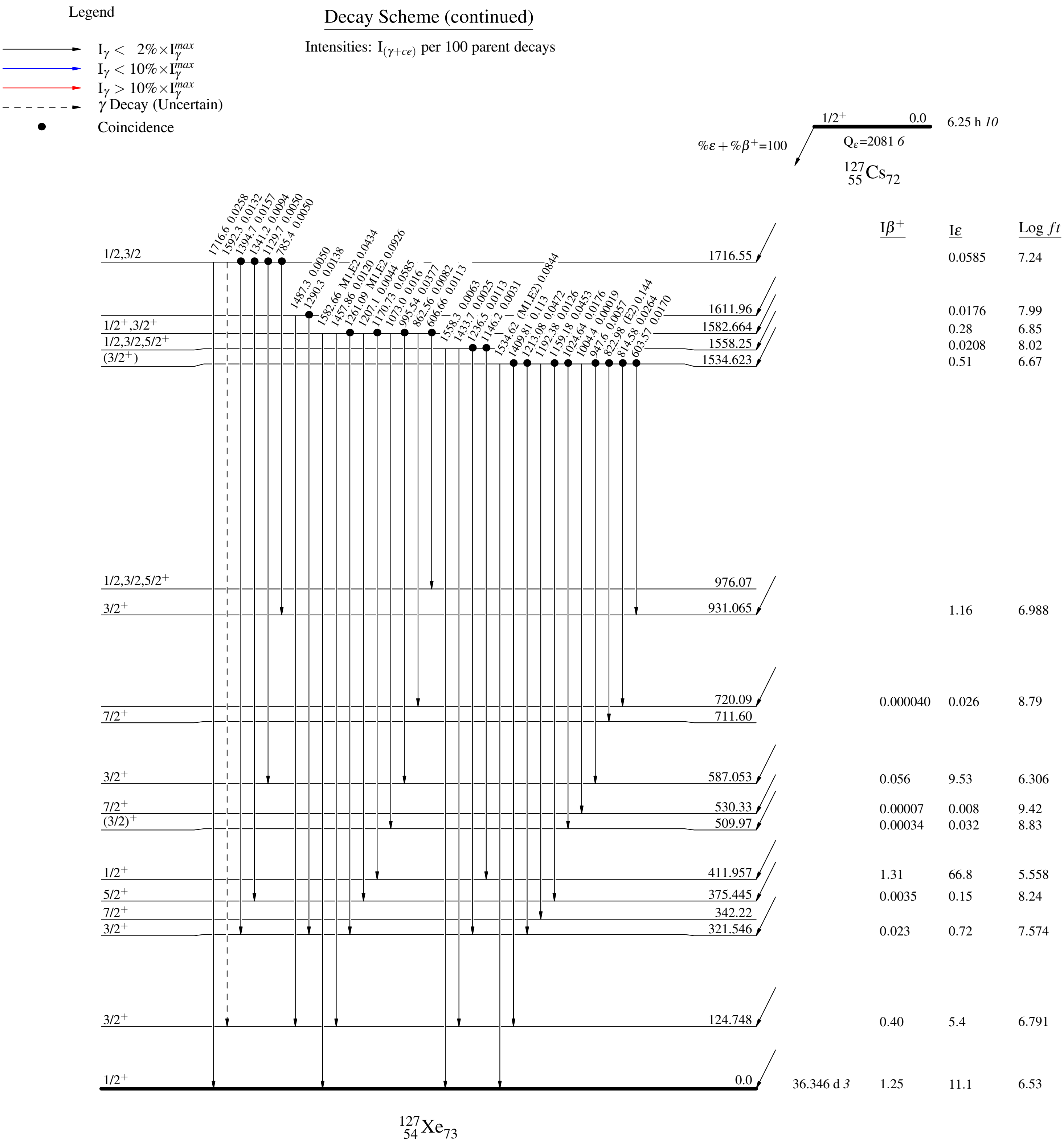
^{127}Cs β^+ decay 1990Ma46



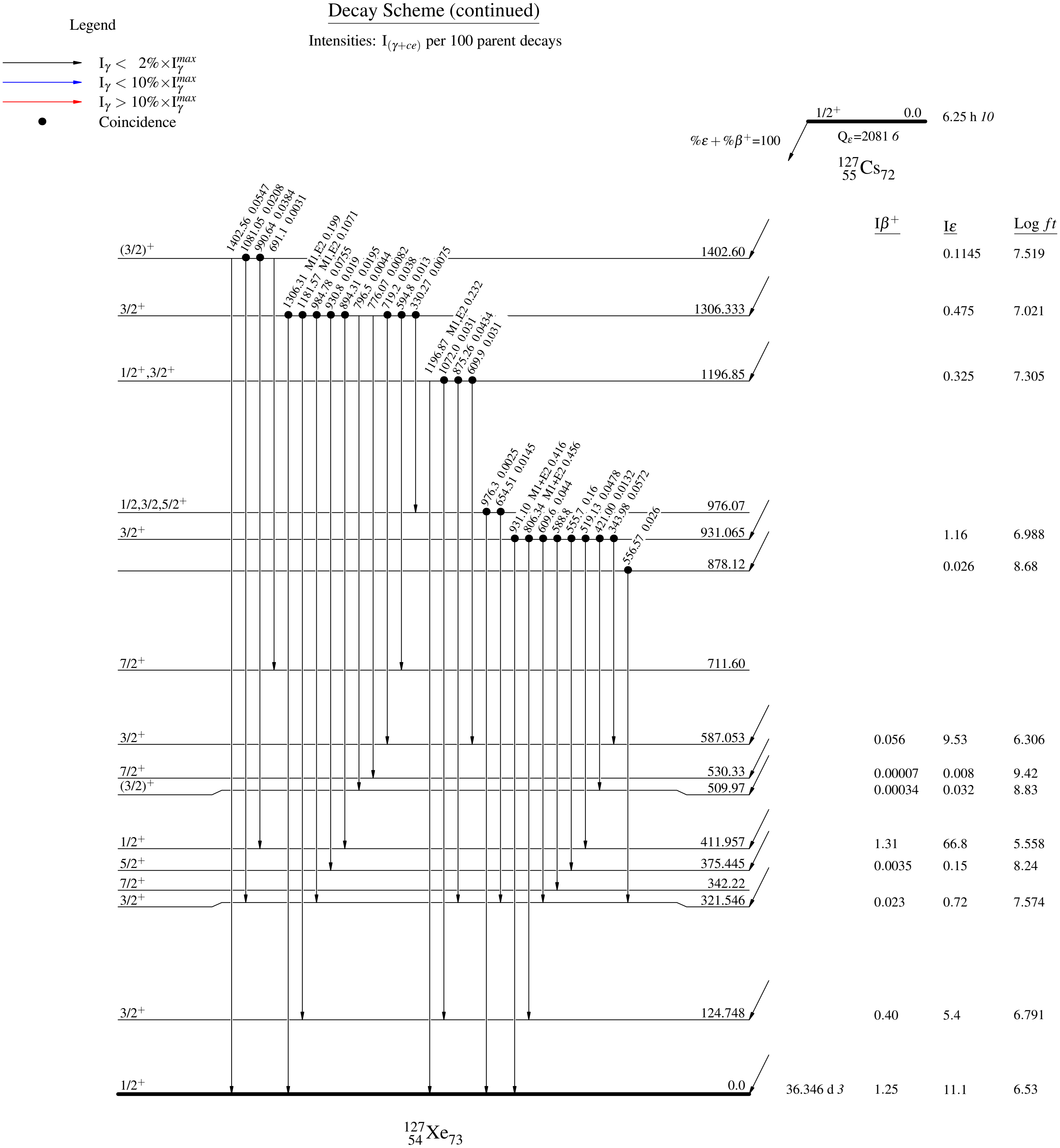
^{127}Cs β^+ decay 1990Ma46

Decay Scheme (continued)

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



^{127}Cs β^+ decay 1990Ma46



^{127}Cs β^+ decay **1990Ma46**

Decay Scheme (continued)

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