

1 Decay Scheme

Ac-225 disintegrates 100% by alpha emission to the ground state level and to excited levels in Fr-221.
L'actinium se désintègre par émissions alpha vers le niveau fondamental et des niveaux excités du francium 225.

2 Nuclear Data

$T_{1/2}(^{225}\text{Ac})$:	10,0	(1)	d
$T_{1/2}(^{221}\text{Fr})$:	4,79	(2)	min
$Q^\alpha(^{225}\text{Ac})$:	5935,1	(14)	keV

2.1 α Transitions

	Energy keV	Probability $\times 100$	F
$\alpha_{0,48}$	4992,4 (14)	0,0011 (4)	2,5
$\alpha_{0,47}$	5083,1 (14)	0,0013 (3)	7,7
$\alpha_{0,46}$	5110,1 (14)	0,00015 (5)	98
$\alpha_{0,45}$	5116,5 (14)	0,00083 (21)	19
$\alpha_{0,44}$	5126,6 (14)	0,0021 (3)	8,8
$\alpha_{0,43}$	5155,8 (14)	0,00114 (18)	24
$\alpha_{0,42}$	5168,7 (14)	0,0038 (19)	9
$\alpha_{0,41}$	5186,3 (14)	0,015 (7)	2,8
$\alpha_{0,40}$	5222,0 (14)	0,0058 (8)	11,9
$\alpha_{0,39}$	5255,5 (14)	0,00066 (12)	165
$\alpha_{0,38}$	5289,1 (14)	0,00015 (5)	1140
$\alpha_{0,37}$	5297,5 (14)	0,0101 (10)	18,9
$\alpha_{0,36}$	5304,5 (14)	0,022 (1)	9,5
$\alpha_{0,35}$	5334,1 (14)	0,0026 (5)	119
$\alpha_{0,34}$	5364,5 (14)	0,048 (19)	10
$\alpha_{0,33}$	5383,3 (14)	0,214 (10)	2,76
$\alpha_{0,32}$	5417,5 (14)	0,007 (7)	130

	Energy keV	Probability × 100	F
$\alpha_{0,31}$	5438,6 (14)	0,0027 (8)	450
$\alpha_{0,30}$	5453,1 (14)	0,000097 (2)	14960
$\alpha_{0,29}$	5476,0 (14)	0,0020 (5)	980
$\alpha_{0,28}$	5488,8 (14)	0,0006 (4)	3800
$\alpha_{0,27}$	5512,5 (14)	0,0030 (4)	1020
$\alpha_{0,26}$	5526,5 (14)	0,0023 (3)	1590
$\alpha_{0,25}$	5528,4 (14)	0,0028 (8)	1340
$\alpha_{0,24}$	5534,2 (14)	0,0083 (6)	485
$\alpha_{0,23}$	5541,8 (14)	0,098 (19)	45
$\alpha_{0,22}$	5567,4 (14)	0,00052 (18)	11700
$\alpha_{0,21}$	5586,7 (14)	0,0020 (3)	3860
$\alpha_{0,20}$	5596,9 (14)	0,0022 (7)	4000
$\alpha_{0,19}$	5615,0 (14)	0,0052 (19)	2100
$\alpha_{0,18}$	5623,7 (14)	0,013 (6)	930
$\alpha_{0,17}$	5640,4 (14)	0,0072 (8)	2060
$\alpha_{0,16}$	5646,9 (14)	0,055 (12)	292
$\alpha_{0,15}$	5655,8 (14)	0,084 (10)	213
$\alpha_{0,14}$	5664,0 (14)	0,017 (7)	1160
$\alpha_{0,13}$	5681,5 (14)	0,95 (4)	25,6
$\alpha_{0,12}$	5700,6 (14)	0,114 (7)	268
$\alpha_{0,11}$	5711,0 (14)	1,09 (5)	31,5
$\alpha_{0,10}$	5739,3 (14)	4,16 (23)	11,6
$\alpha_{0,9}$	5785,0 (14)	1,31 (4)	62,9
$\alpha_{0,8}$	5789,3 (14)	0,021 (14)	4100
$\alpha_{0,7}$	5826,7 (14)	2,03 (23)	66
$\alpha_{0,6}$	5834,2 (14)	1,6 (3)	91
$\alpha_{0,5}$	5835,3 (14)	1,24 (10)	119
$\alpha_{0,4}$	5835,6 (17)	9,0 (5)	16,4
$\alpha_{0,3}$	5896,5 (14)	6,2 (9)	48
$\alpha_{0,2}$	5898,0 (21)	18,9 (20)	16
$\alpha_{0,1}$	5909,3 (14)	0,3	1135
$\alpha_{0,0}$	5935,1 (14)	52,4 (24)	8,7

2.2 Gamma Transitions and Internal Conversion Coefficients

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{2,1}$ (Fr)	10,6	7,7 (10)	M1			383 (5)	510 (7)
$\gamma_{1,0}$ (Fr)	26,02 (10)	9,4 (13)	E2		4390 (110)	1180 (30)	5940 (150)
$\gamma_{2,0}$ (Fr)	36,69 (3)	19,8 (17)	E2		806 (12)	217 (4)	1092 (16)
$\gamma_{3,0}$ (Fr)	38,58 (4)	9,1 (9)	E2		630 (10)	169 (3)	854 (13)
$\gamma_{8,4}$ (Fr)	46,25 (5)	0,0090 (13)	[E1]		0,636 (9)	0,155 (2)	0,841 (12)
$\gamma_{9,6}$ (Fr)	49,12 (4)	0,0137 (14)	[E1]		0,541 (8)	0,1320 (19)	0,715 (11)
$\gamma_{9,5}$ (Fr)	50,2	0,15	[E2]		174,2 (25)	47,0 (7)	236,0 (34)
$\gamma_{34,32}$ (Fr)	53,4 (4)	0,074	[M1]		13,3 (4)	3,18 (8)	17,6 (5)
$\gamma_{13,10}$ (Fr)	57,71 (4)	0,0075 (12)	(E1)		0,352 (5)	0,0854 (12)	0,465 (7)
$\gamma_{6,3}$ (Fr)	62,6 (3)	0,44 (10)	[E2]		59,8 (16)	16,2 (5)	81,2 (23)
$\gamma_{4,2}$ (Fr)	62,95 (3)	5,81 (36)	M1		8,24 (12)	1,964 (28)	10,85 (15)
$\gamma_{5,2}$ (Fr)	63,5 (3)	0,0286 (41)	[E1]		0,273 (5)	0,0660 (12)	0,360 (7)
$\gamma_{6,2}$ (Fr)	64,27 (3)	1,13 (21)	M1+E2		17 (3)	4,4 (8)	23 (4)
$\gamma_{7,3}$ (Fr)	69,86 (5)	0,23 (6)	E2		35,3 (5)	9,55 (14)	47,9 (7)
$\gamma_{7,2}$ (Fr)	71,71 (4)	0,57 (6)	E2		31,1 (5)	8,43 (12)	42,3 (6)
$\gamma_{4,1}$ (Fr)	73,55 (9)	0,73 (19)	E2		27,6 (4)	7,48 (11)	37,5 (6)
$\gamma_{5,1}$ (Fr)	73,86 (3)	0,383 (29)	E1		0,182 (3)	0,0440 (6)	0,240 (3)
$\gamma_{6,1}$ (Fr)	74,83 (5)	0,197 (39)	(M1+E2)		9,06 (13)	2,32 (4)	12,15 (18)
$\gamma_{11,8}$ (Fr)	78,8	0,082 (13)	M1		4,27 (6)	1,019 (14)	5,63 (8)
$\gamma_{10,7}$ (Fr)	87,41 (3)	1,4 (1)	M1		3,16 (5)	0,754 (10)	4,16 (6)
$\gamma_{10,6}$ (Fr)	94,90 (2)	0,449 (43)	M1		2,49 (3)	0,594 (8)	3,28 (5)
$\gamma_{10,5}$ (Fr)	96,16 (5)	0,23 (7)	M1+E2		4,5 (10)	1,2 (3)	6,0 (14)
$\gamma_{4,0}$ (Fr)	99,67 (5)	3,09 (22)	M1+E2		2,32 (8)	0,56 (2)	3,06 (11)
$\gamma_{5,0}$ (Fr)	99,91 (6)	1,20 (9)	E1		0,0814 (11)	0,0196 (3)	0,1073 (15)
$\gamma_{6,0}$ (Fr)	100,90 (4)	0,54 (19)	M1+E2		3,4 (14)	0,9 (4)	4,6 (19)
$\gamma_{13,9}$ (Fr)	103,48 (10)	0,033 (12)	[M1,E2]	5 (2)	3,7 (18)	1,0 (5)	10 (3)
$\gamma_{7,0}$ (Fr)	108,40 (3)	2,87 (19)	M1+E2	7,2 (4)	2,30 (12)	0,58 (4)	10,27 (25)
$\gamma_{9,3}$ (Fr)	111,53 (3)	0,427 (29)	(E1)	0,282 (4)	0,0609 (9)	0,01461 (21)	0,363 (5)
$\gamma_{24,16}$ (Fr)	112,80 (2)	0,00284 (41)	[E1]	0,275 (4)	0,0591 (9)	0,01417 (21)	0,353 (5)
$\gamma_{23,15}$ (Fr)	114	0,0094 (14)	M1	7,93 (12)	1,466 (21)	0,350 (5)	9,86 (14)
$\gamma_{8,1}$ (Fr)	119,85 (3)	0,104 (7)	[E1]	0,239 (4)	0,0503 (7)	0,01207 (17)	0,305 (4)
$\gamma_{14,9}$ (Fr)	121,08 (7)	0,022 (6)	(E1)	0,233 (4)	0,0490 (7)	0,01176 (17)	0,298 (4)
$\gamma_{11,6}$ (Fr)	123,75 (4)	0,112 (8)	[E1]	0,221 (4)	0,0463 (7)	0,0111 (2)	0,282 (4)
$\gamma_{11,5}$ (Fr)	124,81 (3)	0,205 (13)	M1+E2	3,87	1,593	0,409	6,01
$\gamma_{12,7}$ (Fr)	126,12 (5)	0,0100 (9)	(E1)	0,212 (3)	0,0440 (7)	0,0106 (2)	0,270 (4)
$\gamma_{15,9}$ (Fr)	129,22 (7)	0,016 (9)	[M1,E2]	3 (3)	1,5 (5)	0,39 (15)	5 (2)
$\gamma_{12,6}$ (Fr)	133,62 (3)	0,0242 (20)	(E1)	0,184 (3)	0,0379 (6)	0,00907 (13)	0,234 (3)
$\gamma_{12,4}$ (Fr)	134,854 (30)	0,0393 (37)	(E1)	0,180 (3)	0,0370 (6)	0,00885 (13)	0,229 (3)
$\gamma_{26,14}$ (Fr)	137,4 (1)	0,0023 (3)					
$\gamma_{23,13}$ (Fr)	139,6	0,0068 (26)	M1+E2	2,4 (21)	1,1 (3)	0,29 (9)	3,9 (17)
$\gamma_{17,9}$ (Fr)	144,73 (22)	0,0022 (6)	(M1+E2)	2,57	0,914	0,232	3,79
$\gamma_{13,7}$ (Fr)	145,17 (3)	0,174 (11)	(E1)	0,1513 (22)	0,0305 (5)	0,00730 (11)	0,191 (3)
$\gamma_{9,0}$ (Fr)	150,06 (3)	0,815 (14)	E1	0,1397 (20)	0,0280 (4)	0,0067 (1)	0,1766 (25)
$\gamma_{13,6}$ (Fr)	152,65 (3)	0,0230 (15)	[E1]	0,1341 (19)	0,0268 (4)	0,00640 (9)	0,1694 (24)
$\gamma_{13,4}$ (Fr)	153,925 (30)	0,239 (15)	E1	0,1315 (19)	0,0262 (4)	0,00627 (9)	0,1660 (23)
$\gamma_{10,3}$ (Fr)	157,253 (30)	1,73 (18)	M1+E2	3,1 (4)	0,59 (3)	0,143 (9)	3,8 (3)
$\gamma_{18,9}$ (Fr)	161,35 (7)	0,013 (6)	[M1,E2]	1,6 (14)	0,64 (10)	0,16 (4)	2,5 (13)
$\gamma_{23,11}$ (Fr)	169,18 (4)	0,037 (20)	[M1,E2]	1,4 (12)	0,53 (6)	0,136 (24)	2,1 (11)
$\gamma_{10,1}$ (Fr)	169,9	0,0139 (14)					
$\gamma_{15,7}$ (Fr)	170,77 (5)	0,015 (8)	(E1)	0,1026 (15)	0,0201 (3)	0,00479 (7)	0,1290 (18)
$\gamma_{15,6}$ (Fr)	178,31 (3)	0,0180 (13)	E1	0,0925 (13)	0,0180 (3)	0,00429 (6)	0,1162 (16)
$\gamma_{16,7}$ (Fr)	179,78 (4)	0,030 (11)	(M1,E2)	1,2 (10)	0,43 (3)	0,109 (14)	1,8 (10)
$\gamma_{11,3}$ (Fr)	186,1	0,0127 (14)					
$\gamma_{17,7}$ (Fr)	186,29 (3)	0,0046 (6)	E1	0,0834 (12)	0,01607 (23)	0,00383 (6)	0,1045 (15)
$\gamma_{16,6}$ (Fr)	187,23	0,0103 (7)					
$\gamma_{11,2}$ (Fr)	187,97 (3)	0,584 (33)	E1	0,0816 (12)	0,01571 (22)	0,00375 (6)	0,1023 (14)
$\gamma_{10,0}$ (Fr)	195,75 (3)	0,37 (9)	M1+E2	1,1 (6)	0,314 (5)	0,079 (4)	1,5 (6)

	Energy keV	$P_{\gamma+ce}$ $\times 100$	Multipolarity	α_K	α_L	α_M	α_T
$\gamma_{23,10}$ (Fr)	197,50 (3)	0,0284 (33)	E1	0,0726 (11)	0,01386 (20)	0,00331 (5)	0,0908 (13)
$\gamma_{12,2}$ (Fr)	197,72 (12)	0,041 (5)	[E1]	0,0724 (11)	0,01382 (20)	0,00330 (5)	0,0906 (13)
$\gamma_{11,1}$ (Fr)	198,51 (21)	0,0205 (14)	[E1]	0,0718 (11)	0,01369 (20)	0,00327 (5)	0,0898 (13)
$\gamma_{29,13}$ (Fr)	205,19 (12)	0,0015 (5)					
$\gamma_{13,2}$ (Fr)	216,90 (3)	0,343 (21)	(E1)	0,0582 (9)	0,01096 (16)	0,00261 (4)	0,0726 (10)
$\gamma_{19,4}$ (Fr)	220,43 (8)	0,0060 (18)					
$\gamma_{11,0}$ (Fr)	224,67 (3)	0,119 (9)	[E1]	0,0537 (8)	0,01005 (14)	0,00239 (4)	0,0669 (9)
$\gamma_{13,1}$ (Fr)	228,2 (4)	0,0046 (12)					
$\gamma_{41,32}$ (Fr)	231,19 (7)	0,012 (7)	(M1)	1,079 (16)	0,197 (3)	0,0468 (7)	1,338 (19)
$\gamma_{14,2}$ (Fr)	236,0 (6)	0,0017 (3)					
$\gamma_{20,4}$ (Fr)	238,64 (8)	0,0022 (7)	(M1)	0,988 (14)	0,180 (3)	0,0428 (6)	1,225 (17)
$\gamma_{15,3}$ (Fr)	240,69 (3)	0,0124 (11)	[E1]	0,0457 (7)	0,00847 (12)	0,00202 (3)	0,0568 (8)
$\gamma_{23,9}$ (Fr)	243,13 (5)	0,0067 (9)	[M1]	0,938 (14)	0,1707 (24)	0,0407 (6)	1,163 (16)
$\gamma_{16,3}$ (Fr)	249,60 (3)	0,0170 (13)	(E2)	0,1033 (15)	0,1145 (16)	0,0305 (5)	0,258 (4)
$\gamma_{13,0}$ (Fr)	253,48 (3)	0,139 (8)	[E1]	0,0405 (6)	0,00747 (11)	0,001776 (25)	0,0504 (7)
$\gamma_{17,3}$ (Fr)	256,1 (2)	0,00039 (7)	[E1]	0,0396 (6)	0,00729 (11)	0,001733 (25)	0,0492 (7)
$\gamma_{15,0}$ (Fr)	279,21 (3)	0,0317 (23)	E1	0,0325 (5)	0,00591 (9)	0,001405 (20)	0,0403 (6)
$\gamma_{36,21}$ (Fr)	282,11 (20)	0,00097 (9)	[M1]	0,622 (9)	0,1129 (16)	0,0269 (4)	0,771 (11)
$\gamma_{23,7}$ (Fr)	284,78 (3)	0,0077 (6)	[E1]	0,0311 (5)	0,00564 (8)	0,001340 (19)	0,0385 (5)
$\gamma_{33,13}$ (Fr)	298,33 (5)						
$\gamma_{25,7}$ (Fr)	298,33 (5)	0,0028 (7)	(M1,E2)	0,30 (24)	0,077 (20)	0,019 (4)	0,4 (3)
$\gamma_{33,12}$ (Fr)	317,23 (18)		E1	0,0244 (4)	0,00437 (7)	0,001037 (15)	0,0302 (4)
$\gamma_{34,13}$ (Fr)	317,23 (18)	0,00065 (33)	M1	0,451 (7)	0,0816 (12)	0,0194 (3)	0,558 (8)
$\gamma_{32,10}$ (Fr)	321,77 (4)						
$\gamma_{27,6}$ (Fr)	321,77 (4)	0,00340 (41)	[E1]	0,0237 (4)	0,00423 (6)	0,001003 (14)	0,0292 (4)
$\gamma_{21,0}$ (Fr)	348,35 (5)	0,0030 (3)					
$\gamma_{23,3}$ (Fr)	354,57 (6)	0,0020 (7)	[E1]	0,0191 (3)	0,00338 (5)	0,000800 (12)	0,0236 (3)
$\gamma_{33,10}$ (Fr)	356,6	0,00026 (11)					
$\gamma_{24,3}$ (Fr)	362,394 (30)	0,0055 (5)	(E1)	0,0182 (3)	0,00321 (6)	0,0007610 (11)	0,0225 (3)
$\gamma_{22,0}$ (Fr)	367,74 (12)	0,00052 (18)					
$\gamma_{34,10}$ (Fr)	375,03 (5)	0,0019 (5)	[E1]	0,01694 (24)	0,00297 (5)	0,000704 (10)	0,0209 (3)
$\gamma_{31,7}$ (Fr)	388,10 (7)	0,00125 (21)					
$\gamma_{37,12}$ (Fr)	403,13 (10)	0,00019 (16)					
$\gamma_{33,8}$ (Fr)	406,06 (3)	0,0079 (5)	[E1]	0,01432 (20)	0,00249 (4)	0,000589 (9)	0,01759 (25)
$\gamma_{32,5}$ (Fr)	417,92 (2)	0,0056 (5)					
$\gamma_{47,27}$ (Fr)	429,80 (18)	0,00038 (19)					
$\gamma_{36,10}$ (Fr)	434,82 (5)	0,0029 (3)					
$\gamma_{40,14}$ (Fr)	442,16 (8)	0,0045 (7)					
$\gamma_{30,3}$ (Fr)	443,43 (10)	0,0001					
$\gamma_{33,7}$ (Fr)	443,44 (10)	0,0015 (5)	[E2]	0,0310 (5)	0,0137 (2)	0,00353 (5)	0,0494 (7)
$\gamma_{28,0}$ (Fr)	446,31 (10)	0,0006 (4)					
$\gamma_{33,6}$ (Fr)	451,04 (5)	0,0036 (6)	[M1]	0,1739 (25)	0,0312 (5)	0,00742 (11)	0,215 (3)
$\gamma_{33,4}$ (Fr)	452,24 (3)	0,13 (1)	[M1]	0,1727 (25)	0,0310 (5)	0,00737 (11)	0,213 (3)
$\gamma_{29,0}$ (Fr)	458,79 (8)	0,00053 (13)					
$\gamma_{34,7}$ (Fr)	462,43 (13)	0,00045 (11)	[E1]	0,01092 (16)	0,00187 (3)	0,000442 (7)	0,01338 (19)
$\gamma_{34,6}$ (Fr)	469,48 (5)	0,0028 (4)					
$\gamma_{32,2}$ (Fr)	480,95 (11)	0,0340 (22)					
$\gamma_{32,1}$ (Fr)	491,45 (10)	0,00035 (14)					
$\gamma_{31,0}$ (Fr)	496,9 (3)	0,0015 (7)					
$\gamma_{45,19}$ (Fr)	498,6 (6)	0,00083 (21)					
$\gamma_{33,3}$ (Fr)	512,5 (7)	0,00055 (21)					
$\gamma_{33,2}$ (Fr)	515,27 (3)	0,0246 (15)	[M1]	0,1219 (17)	0,0218 (3)	0,00518 (8)	0,1506 (21)
$\gamma_{32,0}$ (Fr)	517,64 (3)	0,0159 (10)					
$\gamma_{36,7}$ (Fr)	522,17 (4)	0,00208 (15)					
$\gamma_{33,1}$ (Fr)	525,95 (17)	0,0403 (25)	[M1]	0,1154 (17)	0,0206 (3)	0,00490 (7)	0,1425 (20)
$\gamma_{36,6}$ (Fr)	529,64 (3)	0,0076 (7)					
$\gamma_{36,4}$ (Fr)	530,89 (4)	0,0047 (5)					
$\gamma_{34,3}$ (Fr)	532,12 (9)	0,00077 (21)	[E1]	0,00823 (12)	0,001389 (20)	0,000327 (5)	0,01005 (14)
$\gamma_{37,4}$ (Fr)	538,1 (1)	0,0038 (10)					

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$\gamma_{43,12}(\text{Fr})$	545,8 (6)	0,00053 (14)					
$\gamma_{33,0}(\text{Fr})$	551,81 (3)	0,0059 (16)	[M1]	0,1016 (15)	0,0181 (3)	0,00431 (6)	0,1254 (17)
$\gamma_{35,2}(\text{Fr})$	564,34 (11)	0,00022 (9)					
$\gamma_{40,8}(\text{Fr})$	567,48 (5)	0,0012 (4)					
$\gamma_{34,0}(\text{Fr})$	570,86 (3)	0,0040 (5)	[E1]	0,00716 (10)	0,001201 (17)	0,000283 (4)	0,00874 (12)
$\gamma_{36,3}(\text{Fr})$	590,45 (5)	0,00083 (14)					
$\gamma_{36,2}(\text{Fr})$	594,05 (4)	0,0029 (3)					
$\gamma_{37,2}(\text{Fr})$	600,94 (3)	0,006					
$\gamma_{35,0}(\text{Fr})$	600,94 (3)	0,0024 (5)					
$\gamma_{41,8}(\text{Fr})$	603,13 (4)	0,00173 (21)					
$\gamma_{43,9}(\text{Fr})$	628,95 (10)	0,00032 (7)					
$\gamma_{37,0}(\text{Fr})$	637,1 (7)	0,00012					
$\gamma_{38,0}(\text{Fr})$	645,94 (12)	0,00015 (5)					
$\gamma_{41,5}(\text{Fr})$	649,07 (4)	0,0017 (5)					
$\gamma_{47,10}(\text{Fr})$	656,29 (11)	0,00049 (21)					
$\gamma_{42,7}(\text{Fr})$	657,89 (5)	0,0014 (3)					
$\gamma_{42,4}(\text{Fr})$	667,18 (8)	0,0021 (18)					
$\gamma_{46,9}(\text{Fr})$	674,9 (3)	0,00010 (5)					
$\gamma_{39,0}(\text{Fr})$	679,53 (6)	0,00066 (12)					
$\gamma_{43,5}(\text{Fr})$	679,57 (6)						
$\gamma_{47,9}(\text{Fr})$	702,02 (14)	0,00016 (7)					
$\gamma_{48,10}(\text{Fr})$	747,0 (1)	0,0011 (4)					
$\gamma_{47,4}(\text{Fr})$	752,48 (12)	0,00026 (7)					
$\gamma_{43,1}(\text{Fr})$	754,09 (13)	0,00023 (7)					
$\gamma_{42,0}(\text{Fr})$	767,9 (3)	0,00030 (6)					
$\gamma_{43,0}(\text{Fr})$	780,6 (6)	0,000055 (14)					
$\gamma_{44,0}(\text{Fr})$	808,48 (10)	0,0021 (3)					
$\gamma_{46,0}(\text{Fr})$	824,2 (7)	0,000049					

3 Atomic Data

3.1 Fr

ω_K	:	0,967	(4)
$\bar{\omega}_L$:	0,440	(18)
n_{KL}	:	0,803	(5)

3.1.1 X Radiations

	Energy keV	Relative probability
X _K		
K α_2	83,23	60,92
K α_1	86,10	100
K β_3	96,815	}
K β_1	97,474	}
K β_5''	98,069	}
		34,88
K β_2	100,16	}
K β_4	100,548	}
K $O_{2,3}$	100,972	}
		11,3
X _L		
L ℓ	10,380	
L α	11,89 – 12,03	
L η	13,254	
L β	13,877 – 15,639	
L γ	16,752 – 17,799	

3.1.2 Auger Electrons

	Energy keV	Relative probability
Auger K		
KLL	63,576 – 70,787	100
KLX	77,720 – 86,101	57,4
KXY	91,84 – 101,12	8,24
Auger L	5,73 – 18,52	

4 α Emissions

	Energy keV	Probability × 100
$\alpha_{0,48}$	4903,6 (14)	0,0011 (4)
$\alpha_{0,47}$	4992,7 (14)	0,0013 (3)
$\alpha_{0,46}$	5019,3 (14)	0,00015 (5)
$\alpha_{0,45}$	5025,5 (14)	0,00083 (21)
$\alpha_{0,44}$	5035,5 (14)	0,0021 (3)
$\alpha_{0,43}$	5064,1 (14)	0,00114 (18)
$\alpha_{0,42}$	5076,8 (14)	0,0038 (19)
$\alpha_{0,41}$	5094,1 (14)	0,015 (7)
$\alpha_{0,40}$	5129,0 (14)	0,0058 (8)
$\alpha_{0,39}$	5162,1 (14)	0,00066 (12)
$\alpha_{0,38}$	5195,1 (14)	0,00015 (5)
$\alpha_{0,37}$	5203,3 (14)	0,0101 (10)
$\alpha_{0,36}$	5210,2 (14)	0,022 (1)
$\alpha_{0,35}$	5239,3 (14)	0,0026 (5)
$\alpha_{0,34}$	5269,1 (14)	0,048 (19)
$\alpha_{0,33}$	5287,6 (14)	0,214 (10)
$\alpha_{0,32}$	5321,2 (14)	0,007 (7)
$\alpha_{0,31}$	5341,9 (14)	0,0027 (8)
$\alpha_{0,30}$	5356,2 (14)	0,000097 (2)
$\alpha_{0,29}$	5379,0 (14)	0,0020 (5)
$\alpha_{0,28}$	5391,2 (14)	0,0006 (4)
$\alpha_{0,27}$	5414,5 (14)	0,0030 (4)
$\alpha_{0,26}$	5428,3 (14)	0,0023 (3)
$\alpha_{0,25}$	5430,1 (14)	0,0028 (8)
$\alpha_{0,24}$	5435,8 (14)	0,0083 (6)
$\alpha_{0,23}$	5443,3 (14)	0,098 (19)
$\alpha_{0,22}$	5468,4 (14)	0,00052 (18)
$\alpha_{0,21}$	5487,4 (14)	0,0020 (3)
$\alpha_{0,20}$	5497,4 (14)	0,0022 (7)
$\alpha_{0,19}$	5515,2 (14)	0,0052 (19)
$\alpha_{0,18}$	5523,7 (14)	0,013 (6)
$\alpha_{0,17}$	5540,1 (14)	0,0072 (8)
$\alpha_{0,16}$	5546,5 (14)	0,055 (12)
$\alpha_{0,15}$	5555,3 (14)	0,084 (10)
$\alpha_{0,14}$	5563,3 (14)	0,017 (7)
$\alpha_{0,13}$	5580,5 (14)	0,95 (4)
$\alpha_{0,12}$	5599,3 (14)	0,114 (7)
$\alpha_{0,11}$	5609,0 (14)	1,09 (5)
$\alpha_{0,10}$	5637,3 (14)	4,16 (23)
$\alpha_{0,9}$	5682,2 (14)	1,31 (4)
$\alpha_{0,8}$	5686,4 (14)	0,021 (14)
$\alpha_{0,7}$	5723,1 (14)	2,03 (23)
$\alpha_{0,6}$	5730,5 (14)	1,6 (3)
$\alpha_{0,5}$	5731,6 (14)	1,24 (10)
$\alpha_{0,4}$	5731,9 (17)	9,0 (5)

	Energy keV	Probability × 100
$\alpha_{0,3}$	5791,7 (14)	6,2 (9)
$\alpha_{0,2}$	5793,1 (21)	18,9 (20)
$\alpha_{0,1}$	5804,2 (14)	0,3
$\alpha_{0,0}$	5829,6 (14)	52,4 (24)

5 Electron Emissions

		Energy keV	Electrons per 100 disint.
eAL	(Fr)	5,73 - 18,52	23,8 (12)
eAK	(Fr)		0,115 (9)
	KLL	63,576 - 70,787	}
	KLX	77,720 - 86,101	}
	KXY	91,84 - 101,12	}
ec _{13,9} K	(Fr)	2,4 (1)	0,015 (7)
ec _{7,0} K	(Fr)	7,27 (3)	1,84 (15)
ec _{7,0} T	(Fr)	7,3 - 108,3	2,62 (18)
ec _{1,0} L	(Fr)	7,39 - 11,00	7,0 (9)
ec _{9,3} K	(Fr)	10,40 (3)	0,088 (6)
ec _{2,0} L	(Fr)	18,06 - 21,66	14,6 (12)
ec _{8,1} K	(Fr)	18,72 (3)	0,0191 (12)
ec _{3,0} L	(Fr)	19,95 - 23,56	6,7 (6)
ec _{1,0} M	(Fr)	21,38 - 23,03	1,88 (25)
ec _{11,6} K	(Fr)	22,62 (4)	0,0192 (14)
ec _{11,5} K	(Fr)	23,68 (3)	0,113 (7)
ec _{1,0} N	(Fr)	24,87 - 25,77	0,49 (7)
ec _{9,5} L	(Fr)	31,6 - 35,2	0,1080 (16)
ec _{2,0} M	(Fr)	32,05 - 33,70	3,93 (33)
ec _{3,0} M	(Fr)	33,94 - 35,59	1,81 (17)
ec _{2,0} N	(Fr)	35,54 - 36,44	1,02 (9)
ec _{3,0} N	(Fr)	37,43 - 38,33	0,474 (45)
ec _{6,3} L	(Fr)	44,0 - 47,6	0,32 (7)
ec _{13,7} K	(Fr)	44,04 (3)	0,0221 (14)
ec _{4,2} L	(Fr)	44,32 - 47,92	4,04 (25)
ec _{9,5} M	(Fr)	45,6 - 47,2	0,02914 (43)
ec _{6,2} L	(Fr)	45,637 - 49,246	0,80 (16)
ec _{9,0} K	(Fr)	48,93 (2)	0,0968 (22)
ec _{7,3} L	(Fr)	51,22 - 54,82	0,166 (42)
ec _{13,4} K	(Fr)	52,80 (3)	0,0270 (18)
ec _{7,2} L	(Fr)	53,10 - 56,71	0,411 (41)

		Energy keV	Electrons per 100 disint.
ec _{4,1} L	(Fr)	54,91 - 58,52	0,52 (14)
ec _{5,1} L	(Fr)	55,23 - 58,84	0,0562 (43)
ec _{10,3} K	(Fr)	56,12 (3)	1,12 (17)
ec _{6,1} L	(Fr)	56,2 - 59,8	0,136 (27)
ec _{6,3} M	(Fr)	58,0 - 59,6	0,086 (20)
ec _{4,2} M	(Fr)	58,31 - 59,96	0,96 (6)
ec _{6,2} M	(Fr)	59,627 - 61,277	0,207 (42)
ec _{11,8} L	(Fr)	60,2 - 63,8	0,053 (8)
ec _{7,3} M	(Fr)	65,21 - 66,86	0,045 (11)
ec _{7,2} M	(Fr)	67,09 - 68,74	0,111 (11)
ec _{23,11} K	(Fr)	68,05 (4)	0,017 (16)
ec _{7,3} N	(Fr)	68,7 - 69,6	0,0118 (30)
ec _{10,7} L	(Fr)	68,78 - 72,38	0,86 (6)
ec _{4,1} M	(Fr)	68,90 - 70,55	0,142 (37)
ec _{5,1} M	(Fr)	69,22 - 70,87	0,0136 (10)
ec _{6,1} M	(Fr)	70,19 - 71,84	0,035 (7)
ec _{7,2} N	(Fr)	70,58 - 71,48	0,0292 (29)
ec _{11,8} M	(Fr)	74,2 - 75,8	0,0125 (19)
ec _{10,6} L	(Fr)	76,3 - 79,9	0,261 (25)
ec _{10,5} L	(Fr)	77,53 - 81,13	0,149 (46)
ec _{16,7} K	(Fr)	78,65 (4)	0,013 (11)
ec _{4,0} L	(Fr)	81,02 - 84,62	1,76 (13)
ec _{5,0} L	(Fr)	81,28 - 84,88	0,088 (7)
ec _{6,0} L	(Fr)	82,3 - 85,9	0,33 (14)
ec _{10,7} M	(Fr)	82,77 - 84,42	0,204 (15)
ec _{13,9} L	(Fr)	84,85 - 88,46	0,011 (6)
ec _{11,2} K	(Fr)	86,84 (3)	0,0432 (25)
ec _{7,0} L	(Fr)	89,8 - 93,4	0,586 (48)
ec _{10,6} M	(Fr)	90,3 - 91,9	0,062 (6)
ec _{10,5} M	(Fr)	91,52 - 93,17	0,040 (13)
ec _{9,3} L	(Fr)	92,9 - 96,5	0,0191 (13)
ec _{10,0} K	(Fr)	94,62 (3)	0,16 (9)
ec _{4,0} M	(Fr)	95,01 - 96,66	0,426 (32)
ec _{5,0} M	(Fr)	95,27 - 96,92	0,0212 (16)
ec _{6,0} M	(Fr)	96,3 - 97,9	0,086 (39)
ec _{7,0} M	(Fr)	103,8 - 105,4	0,148 (14)
ec _{11,5} L	(Fr)	106,18 - 109,78	0,0465 (29)
ec _{7,0} N	(Fr)	107,3 - 108,2	0,0388 (33)
ec _{13,2} K	(Fr)	115,77 (3)	0,0186 (12)
ec _{11,5} M	(Fr)	120,17 - 121,82	0,0119 (7)
ec _{9,0} L	(Fr)	131,43 - 135,04	0,01940 (44)
ec _{10,3} L	(Fr)	138,619 - 142,228	0,212 (21)
ec _{10,3} M	(Fr)	152,609 - 154,259	0,051 (5)
ec _{10,0} L	(Fr)	177,12 - 180,72	0,0465 (29)
ec _{10,0} M	(Fr)	191,11 - 192,76	0,0117 (9)
ec _{33,4} K	(Fr)	351,11 (3)	0,0185 (14)

6 Photon Emissions

6.1 X-Ray Emissions

		Energy keV	Photons per 100 disint.	
XL	(Fr)	10,380 — 17,799	18,7 (9)	
XK α_2	(Fr)	83,23	1,00 (8)	} K α
XK α_1	(Fr)	86,1	1,64 (12)	}
XK β_3	(Fr)	96,815	}	
XK β_1	(Fr)	97,474	}	K' β_1
XK β_5''	(Fr)	98,069	}	
XK β_2	(Fr)	100,16	}	
XK β_4	(Fr)	100,548	}	K' β_2
XKO _{2,3}	(Fr)	100,972	}	

6.2 Gamma Emissions

	Energy keV	Photons per 100 disint.
$\gamma_{2,1}$ (Fr)	10,6	0,015 (2)
$\gamma_{1,0}$ (Fr)	26,0 (1)	0,00159 (21)
$\gamma_{2,0}$ (Fr)	36,69 (3)	0,0181 (15)
$\gamma_{3,0}$ (Fr)	38,58 (4)	0,0107 (10)
$\gamma_{8,4}$ (Fr)	46,24 (5)	0,0049 (7)
$\gamma_{9,6}$ (Fr)	49,12 (4)	0,0080 (8)
$\gamma_{9,5}$ (Fr)	50,2	0,00062
$\gamma_{34,32}$ (Fr)	53,4 (4)	0,004
$\gamma_{13,10}$ (Fr)	57,71 (4)	0,0051 (8)
$\gamma_{6,3}$ (Fr)	62,6 (3)	0,0053 (12)
$\gamma_{4,2}$ (Fr)	62,94 (3)	0,49 (3)
$\gamma_{5,2}$ (Fr)	63,5 (3)	0,021 (3)
$\gamma_{6,2}$ (Fr)	64,27 (3)	0,047 (4)
$\gamma_{7,3}$ (Fr)	69,86 (5)	0,0047 (12)
$\gamma_{7,2}$ (Fr)	71,71 (4)	0,0132 (13)
$\gamma_{4,1}$ (Fr)	73,55 (9)	0,019 (5)
$\gamma_{5,1}$ (Fr)	73,85 (3)	0,309 (23)
$\gamma_{6,1}$ (Fr)	74,82 (5)	0,015 (3)
$\gamma_{11,8}$ (Fr)	78,8	0,0123 (19)
$\gamma_{10,7}$ (Fr)	87,41 (3)	0,271 (19)
$\gamma_{10,6}$ (Fr)	94,90 (2)	0,105 (10)
$\gamma_{10,5}$ (Fr)	96,16 (5)	0,033 (7)
$\gamma_{4,0}$ (Fr)	99,67 (5)	0,76 (5)

	Energy keV	Photons per 100 disint.
$\gamma_{5,0}(\text{Fr})$	99,89 (6)	1,08 (8)
$\gamma_{6,0}(\text{Fr})$	100,86 (4)	0,096 (8)
$\gamma_{13,9}(\text{Fr})$	103,48 (10)	0,0030 (7)
$\gamma_{7,0}(\text{Fr})$	108,38 (3)	0,255 (16)
$\gamma_{9,3}(\text{Fr})$	111,52 (3)	0,313 (21)
$\gamma_{24,16}(\text{Fr})$	112,80 (2)	0,0021 (3)
$\gamma_{23,15}(\text{Fr})$	114	0,00087 (13)
$\gamma_{8,1}(\text{Fr})$	119,85 (3)	0,080 (5)
$\gamma_{14,9}(\text{Fr})$	121,06 (7)	0,017 (5)
$\gamma_{11,6}(\text{Fr})$	123,75 (4)	0,087 (6)
$\gamma_{11,5}(\text{Fr})$	124,81 (3)	0,0292 (18)
$\gamma_{12,7}(\text{Fr})$	126,10 (5)	0,0079 (7)
$\gamma_{15,9}(\text{Fr})$	129,22 (7)	0,0027 (5)
$\gamma_{12,6}(\text{Fr})$	133,60 (3)	0,0196 (16)
$\gamma_{12,4}(\text{Fr})$	134,85 (3)	0,032 (3)
$\gamma_{26,14}(\text{Fr})$	137,4 (1)	0,0023 (3)
$\gamma_{23,13}(\text{Fr})$	139,6	0,00139 (21)
$\gamma_{17,9}(\text{Fr})$	144,7 (2)	0,00046 (12)
$\gamma_{13,7}(\text{Fr})$	145,15 (3)	0,146 (9)
$\gamma_{9,0}(\text{Fr})$	150,05 (3)	0,693 (12)
$\gamma_{13,6}(\text{Fr})$	152,64 (3)	0,0197 (13)
$\gamma_{13,4}(\text{Fr})$	153,92 (3)	0,205 (13)
$\gamma_{10,3}(\text{Fr})$	157,25 (3)	0,36 (3)
$\gamma_{18,9}(\text{Fr})$	161,35 (7)	0,0036 (9)
$\gamma_{23,11}(\text{Fr})$	169,18 (4)	0,012 (5)
$\gamma_{10,1}(\text{Fr})$	169,9	0,0139 (14)
$\gamma_{15,7}(\text{Fr})$	170,77 (5)	0,013 (7)
$\gamma_{15,6}(\text{Fr})$	178,29 (3)	0,0161 (12)
$\gamma_{16,7}(\text{Fr})$	179,78 (4)	0,0108 (8)
$\gamma_{11,3}(\text{Fr})$	186,1	0,0127 (14)
$\gamma_{17,7}(\text{Fr})$	186,29 (3)	0,0042 (5)
$\gamma_{16,6}(\text{Fr})$	187,2	0,0103 (7)
$\gamma_{11,2}(\text{Fr})$	187,96 (3)	0,53 (3)
$\gamma_{10,0}(\text{Fr})$	195,74 (3)	0,148 (9)
$\gamma_{23,10}(\text{Fr})$	197,50 (3)	0,026 (3)
$\gamma_{12,2}(\text{Fr})$	197,7 (1)	0,038 (5)
$\gamma_{11,1}(\text{Fr})$	198,47 (23)	0,0188 (13)
$\gamma_{29,13}(\text{Fr})$	205,07 (11)	0,0015 (5)
$\gamma_{13,2}(\text{Fr})$	216,89 (3)	0,32 (2)
$\gamma_{19,4}(\text{Fr})$	220,43 (8)	0,0060 (18)
$\gamma_{11,0}(\text{Fr})$	224,59 (3)	0,112 (8)
$\gamma_{13,1}(\text{Fr})$	228,2 (4)	0,0046 (12)
$\gamma_{41,32}(\text{Fr})$	231,16 (7)	0,005 (3)
$\gamma_{14,2}(\text{Fr})$	236,0 (6)	0,0017 (3)
$\gamma_{20,4}(\text{Fr})$	238,64 (8)	0,0010 (3)
$\gamma_{15,3}(\text{Fr})$	240,68 (3)	0,0117 (10)
$\gamma_{23,9}(\text{Fr})$	243,12 (5)	0,0031 (4)

	Energy keV	Photons per 100 disint.
$\gamma_{16,3}(\text{Fr})$	249,60 (3)	0,0135 (10)
$\gamma_{13,0}(\text{Fr})$	253,46 (3)	0,132 (8)
$\gamma_{17,3}(\text{Fr})$	256,0 (2)	0,00037 (7)
$\gamma_{15,0}(\text{Fr})$	279,18 (3)	0,0305 (22)
$\gamma_{36,21}(\text{Fr})$	282,1 (2)	0,00055 (5)
$\gamma_{23,7}(\text{Fr})$	284,75 (3)	0,0074 (6)
$\gamma_{25,7}(\text{Fr})$	298,33 (5)	0,0020 (3)
$\gamma_{34,13}(\text{Fr})$	317,23 (18)	0,00042 (21)
$\gamma_{27,6}(\text{Fr})$	321,77 (4)	0,0033 (4)
$\gamma_{21,0}(\text{Fr})$	348,33 (5)	0,0030 (3)
$\gamma_{23,3}(\text{Fr})$	354,56 (6)	0,0020 (7)
$\gamma_{33,10}(\text{Fr})$	356,6	0,00026 (11)
$\gamma_{24,3}(\text{Fr})$	362,38 (3)	0,0054 (5)
$\gamma_{22,0}(\text{Fr})$	367,74 (12)	0,00052 (18)
$\gamma_{34,10}(\text{Fr})$	374,98 (5)	0,0019 (5)
$\gamma_{31,7}(\text{Fr})$	388,07 (7)	0,00125 (21)
$\gamma_{37,12}(\text{Fr})$	403,13 (10)	0,00019 (16)
$\gamma_{33,8}(\text{Fr})$	405,95 (3)	0,0078 (5)
$\gamma_{32,5}(\text{Fr})$	417,90 (2)	0,0056 (5)
$\gamma_{47,27}(\text{Fr})$	429,80 (18)	0,00038 (19)
$\gamma_{36,10}(\text{Fr})$	434,82 (5)	0,0029 (3)
$\gamma_{40,14}(\text{Fr})$	442,16 (8)	0,0045 (7)
$\gamma_{33,7}(\text{Fr})$	443,43 (10)	0,0014 (5)
$\gamma_{30,3}(\text{Fr})$	443,43 (10)	0,0001
$\gamma_{28,0}(\text{Fr})$	446,31 (10)	0,0006 (4)
$\gamma_{33,6}(\text{Fr})$	451,04 (5)	0,0030 (5)
$\gamma_{33,4}(\text{Fr})$	452,23 (3)	0,107 (8)
$\gamma_{29,0}(\text{Fr})$	458,79 (8)	0,00053 (13)
$\gamma_{34,7}(\text{Fr})$	462,43 (13)	0,00044 (11)
$\gamma_{34,6}(\text{Fr})$	469,48 (5)	0,0028 (4)
$\gamma_{32,2}(\text{Fr})$	480,85 (11)	0,0340 (22)
$\gamma_{32,1}(\text{Fr})$	491,45 (10)	0,00035 (14)
$\gamma_{31,0}(\text{Fr})$	496,9 (3)	0,0015 (7)
$\gamma_{45,19}(\text{Fr})$	498,6 (6)	0,00083 (21)
$\gamma_{33,3}(\text{Fr})$	512,5 (7)	0,00055 (21)
$\gamma_{33,2}(\text{Fr})$	515,13 (3)	0,0214 (13)
$\gamma_{32,0}(\text{Fr})$	517,51 (3)	0,0159 (10)
$\gamma_{36,7}(\text{Fr})$	522,14 (4)	0,00208 (15)
$\gamma_{33,1}(\text{Fr})$	525,94 (17)	0,0353 (22)
$\gamma_{36,6}(\text{Fr})$	529,59 (3)	0,0076 (7)
$\gamma_{36,4}(\text{Fr})$	530,87 (4)	0,0047 (5)
$\gamma_{34,3}(\text{Fr})$	532,11 (9)	0,00076 (21)
$\gamma_{37,4}(\text{Fr})$	538,1 (1)	0,0038 (10)
$\gamma_{43,12}(\text{Fr})$	545,8 (6)	0,00053 (14)
$\gamma_{33,0}(\text{Fr})$	551,79 (3)	0,0052 (14)
$\gamma_{35,2}(\text{Fr})$	564,34 (11)	0,00022 (9)
$\gamma_{40,8}(\text{Fr})$	567,48 (5)	0,0012 (4)

	Energy keV	Photons per 100 disint.
$\gamma_{34,0}(\text{Fr})$	570,69 (3)	0,0040 (5)
$\gamma_{36,3}(\text{Fr})$	590,42 (5)	0,00083 (14)
$\gamma_{36,2}(\text{Fr})$	593,87 (4)	0,0029 (3)
$\gamma_{35,0}(\text{Fr})$	600,92 (3)	0,0024 (5)
$\gamma_{37,2}(\text{Fr})$	600,92 (3)	0,006
$\gamma_{41,8}(\text{Fr})$	603,09 (4)	0,00173 (21)
$\gamma_{43,9}(\text{Fr})$	628,95 (10)	0,00032 (7)
$\gamma_{37,0}(\text{Fr})$	637,1 (7)	0,00012
$\gamma_{38,0}(\text{Fr})$	645,94 (12)	0,00015 (5)
$\gamma_{41,5}(\text{Fr})$	649,03 (4)	0,0017 (5)
$\gamma_{47,10}(\text{Fr})$	656,18 (11)	0,00049 (21)
$\gamma_{42,7}(\text{Fr})$	657,88 (5)	0,0014 (3)
$\gamma_{42,4}(\text{Fr})$	667,14 (8)	0,0021 (18)
$\gamma_{46,9}(\text{Fr})$	674,9 (3)	0,00010 (5)
$\gamma_{39,0}(\text{Fr})$	679,36 (6)	0,00066 (12)
$\gamma_{47,9}(\text{Fr})$	702,00 (14)	0,00016 (7)
$\gamma_{48,10}(\text{Fr})$	747,0 (1)	0,0011 (4)
$\gamma_{47,4}(\text{Fr})$	752,46 (12)	0,00026 (7)
$\gamma_{43,1}(\text{Fr})$	754,04 (13)	0,00023 (7)
$\gamma_{42,0}(\text{Fr})$	767,9 (3)	0,00030 (6)
$\gamma_{43,0}(\text{Fr})$	780,6 (6)	0,000055 (14)
$\gamma_{44,0}(\text{Fr})$	808,48 (10)	0,0021 (3)
$\gamma_{46,0}(\text{Fr})$	824,2 (7)	0,000049

7 Main Production Modes

Ra – $^{226}(\text{d},3\text{n})\text{Ac} - 225$

Th – $^{232}(\text{p},4\text{n})\text{Ac} - 225$

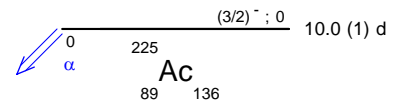
U – 233 decay chain

Th – 229 decay chain

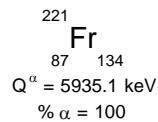
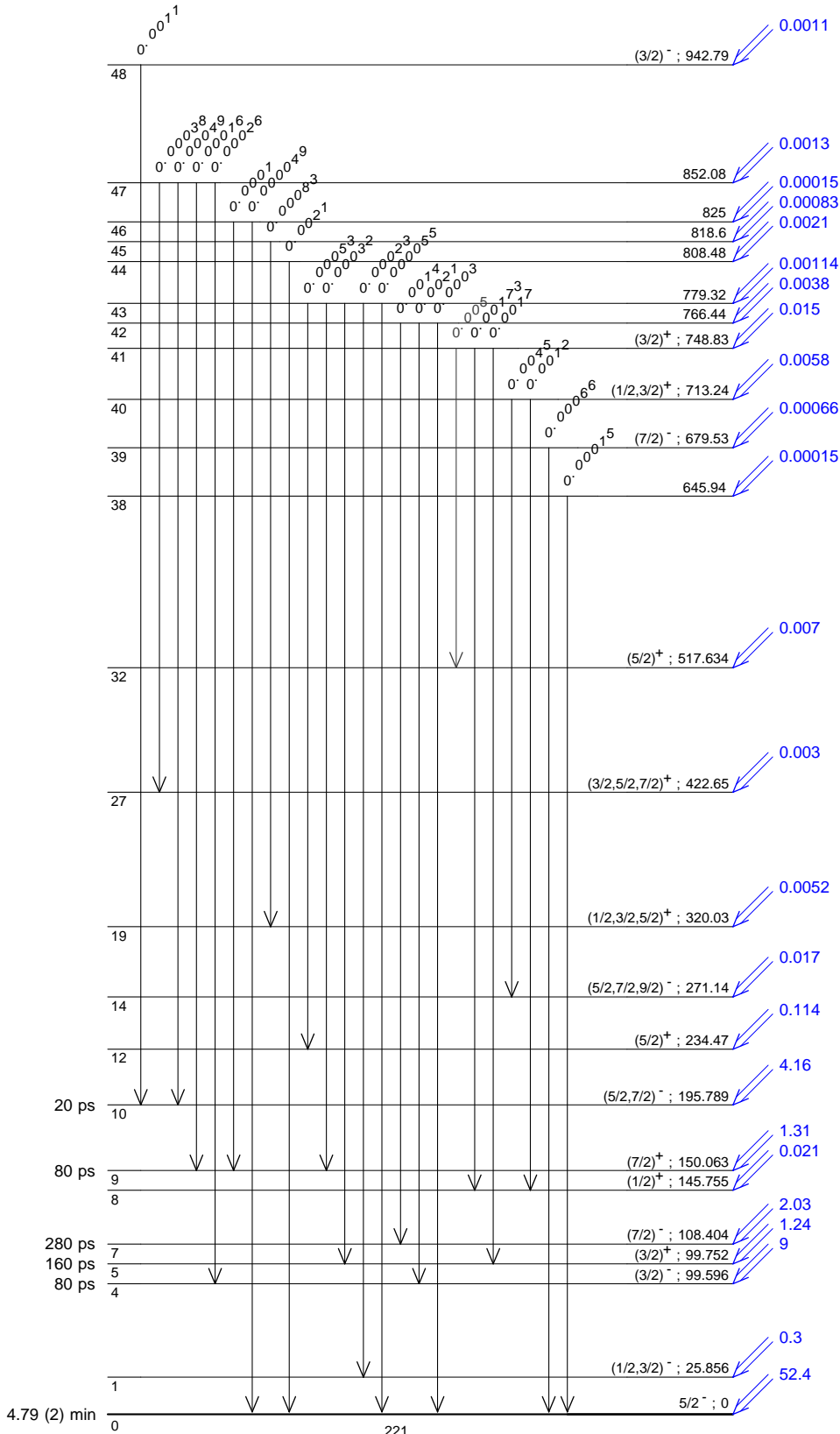
8 References

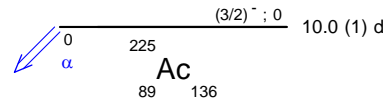
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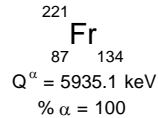
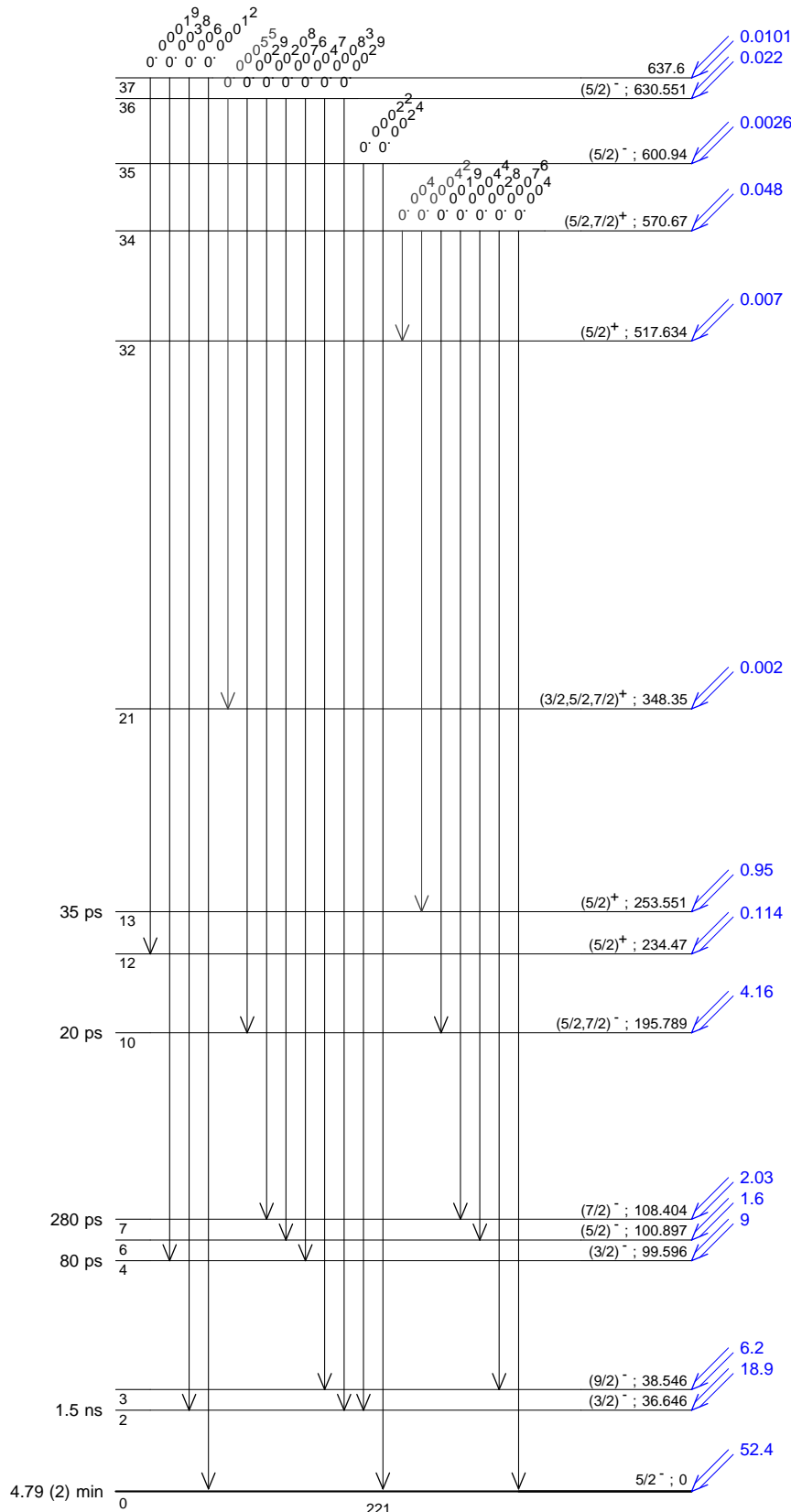


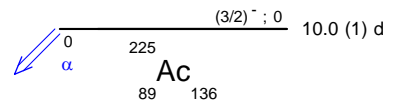
γ Emission intensities per 100 disintegrations



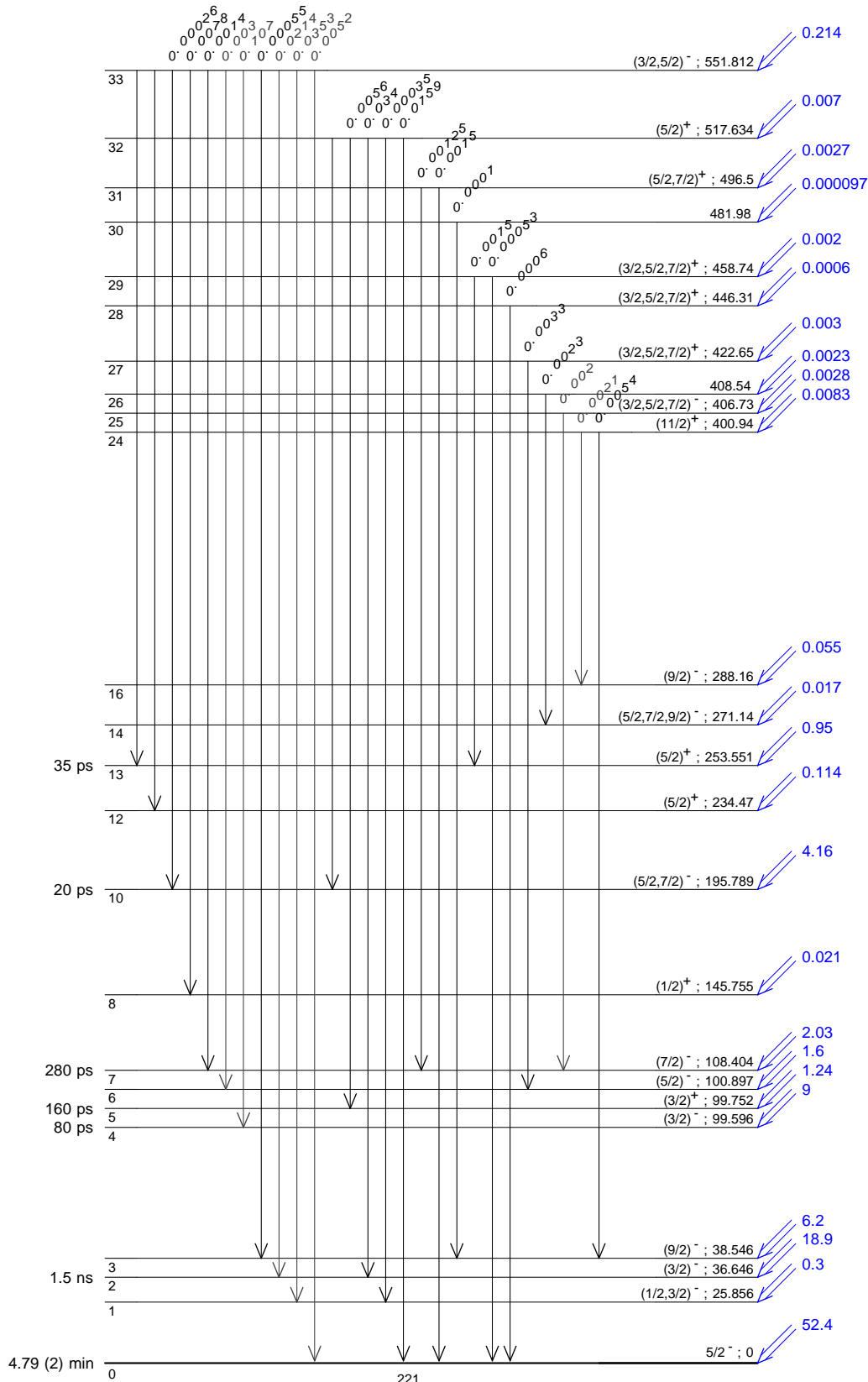


γ Emission intensities per 100 disintegrations

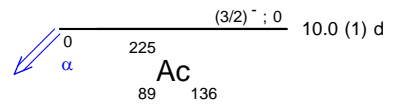




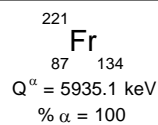
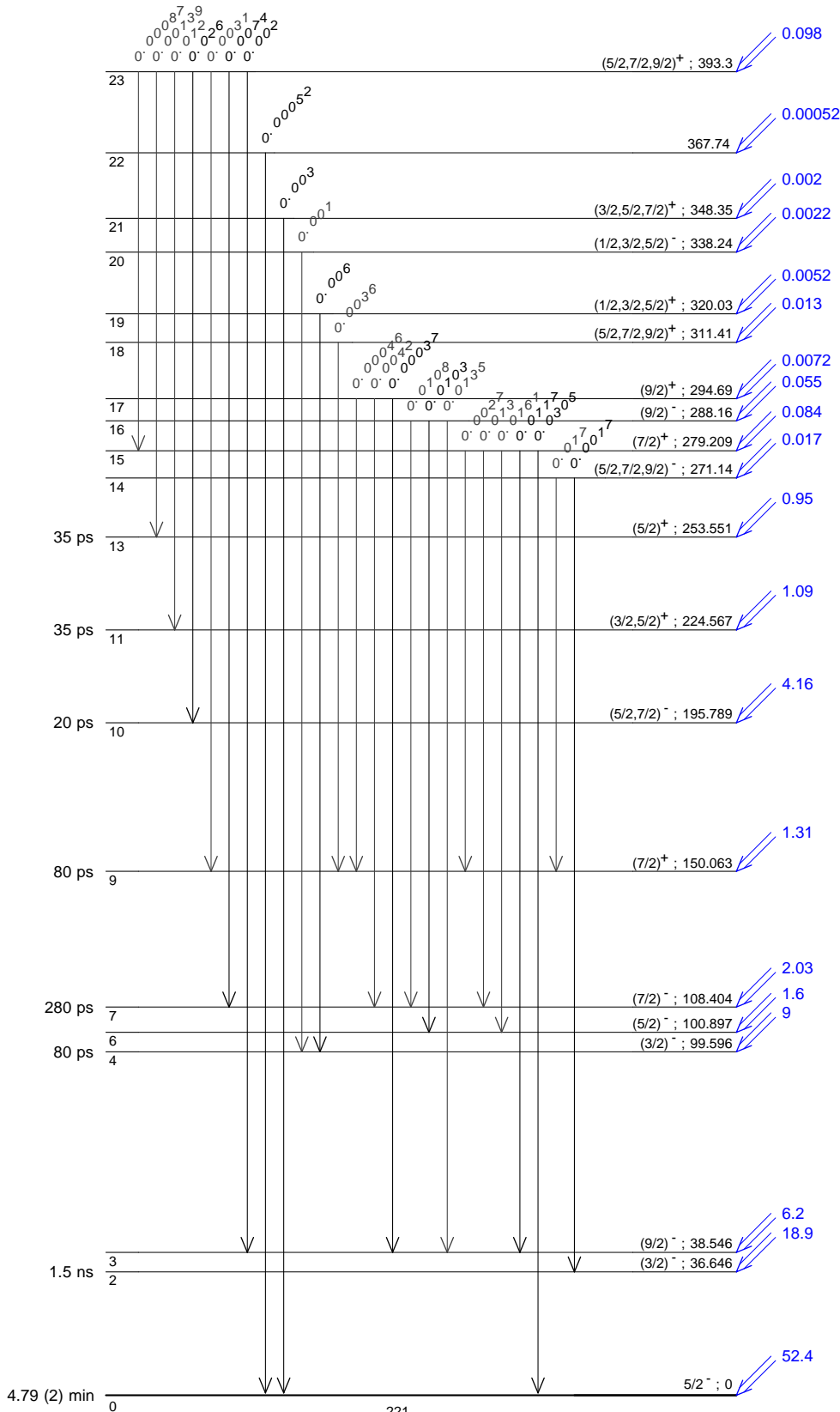
γ Emission intensities per 100 disintegrations

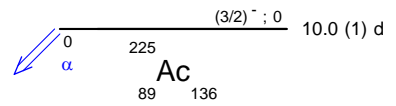


²²⁵Fr ₈₇ 134
 Q^α = 5935.1 keV
 % α = 100

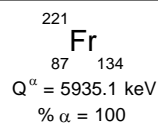
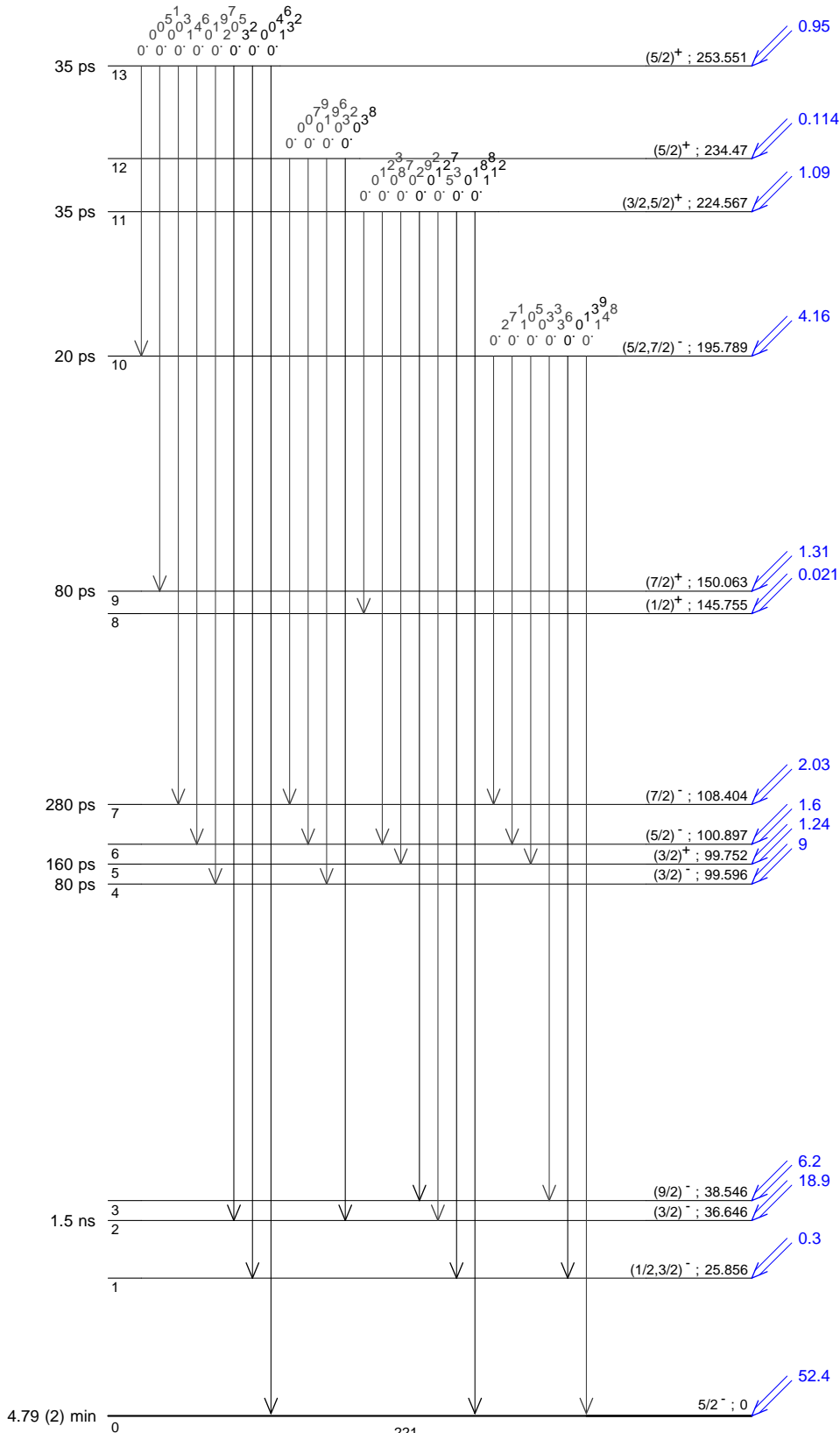


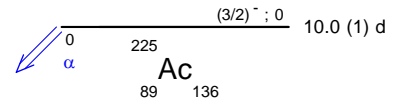
γ Emission intensities per 100 disintegrations





γ Emission intensities per 100 disintegrations





γ Emission intensities per 100 disintegrations

