^{137}I β^-n decay 1980Oh04,1979Kr03

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 152, 331 (2018)	1-Apr-2018

Parent: ^{137}I: E=0.0; $J^\pi=(7/2^+)$; $T_{1/2}$=24.5 s *2*; Q(β^-n)=2002 *8*; %β^-n decay=7.66 *14*

^{137}I-%β^-n decay: weighted average of 8.6 *12* (1971De35), 6.1 *8* (1975As04), 7.6 *11* (1980ReZQ), 7.2 *16* (1981Ho07), 7.46 *30* (1993Ru01), 6.88 *76* (2013Ye02), 7.76 *14* (2016Ag03).

1980Oh04: ^{137}I activity from ^{235}U(n,F) with E=thermal followed by fast chemistry. Measured En, In using two high-resolution ^{3}He ionization chambers operated in parallel.

Others: Delayed neutron spectra in figure only: 1974Sh18, 1979Kr03, 1997Gr20; average delayed neutron energy: 1977Re06.

All data from 1980Oh04, except where noted.

^{136}Xe Levels

E(level)	J^π
0.0	0^+

Delayed Neutrons (^{136}Xe)

<En>=0.53 MeV *5* (1977Re06) compared to 606 keV *19* from the decay scheme.

E(n)†	E(^{136}Xe)	I(n)‡#	E(^{137}Xe)	E(n)†	E(^{136}Xe)	I(n)‡#	E(^{137}Xe)
78.2 *1*	0.0	2.50 *16*	4103.2	729.9 *20*	0.0	0.8 *3*	4750.1
128 *4*	0.0	0.16 *8*	4153	752.6 *8*	0.0	3.0 *3*	4772.6
156.4 *15*	0.0	0.78 *16*	4180.8	778.1 *11*	0.0	1.4 *3*	4797.9
172 *4*	0.0	0.31 *16*	4196	850 *3*	0.0	1.3 *6*	4869
259.0 *13*	0.0	2.5 *5*	4282.6	861.8 *11*	0.0	4.4 *6*	4881.0
268.0 *12*	0.0	3.3 *5*	4296.0	886.6 *24*	0.0	0.63 *16*	4905.6
323.4 *11*	0.0	2.2 *6*	4346.5	937 *3*	0.0	0.63 *16*	4956
352 *5*	0.0	0.9 *5*	4375	960.0 *11*	0.0	2.2 *3*	4978.5
377.1 *6*	0.0	9.5 *6*	4399.8	980.5 *17*	0.0	1.25 *16*	4998.8
395.7 *17*	0.0	3.1 *5*	4418.3	1007.0 *15*	0.0	0.94 *16*	5025.1
420.7 *12*	0.0	2.5 *3*	4443.1	1062.5 *12*	0.0	1.09 *16*	5080.2
463 *3*	0.0	1.3 *5*	4485	1108 *3*	0.0	0.5 *3*	5125
483.2 *9*	0.0	4.8 *5*	4505.2	1141.0 *15*	0.0	1.09 *16*	5158.2
505.4 *15*	0.0	3.9 *5*	4527.2	1162.7 *8*	0.0	2.5 *3*	5179.7
521.9 *19*	0.0	2.5 *5*	4543.6	1192.1 *18*	0.0	1.09 *16*	5208.9
563.2 *12*	0.0	3.1 *6*	4584.6	1213.7 *23*	0.0	0.94 *16*	5230.3
585.6 *8*	0.0	4.7 *5*	4606.8	1339 *5*	0.0	0.6 *3*	5355
610.1 *17*	0.0	1.4 *5*	4631.1	1363 *5*	0.0	0.47 *16*	5379
692.3 *17*	0.0	0.8 *3*	4712.7	1393 *5*	0.0	0.8 *3*	5408

† From ^{137}Xe E(level)′s given by 1980Oh04. Note that 1980Oh04 used S(n)(^{137}Xe)=4025.5 *5* (1977Pr07) while 2017Wa10 adopt 4025.56 *10*.

‡ 80% *15* of the total neutron count rate was accounted for by ΣI(n) (1980Oh04).

For absolute intensity per 100 decays, multiply by 0.0766 *14*.

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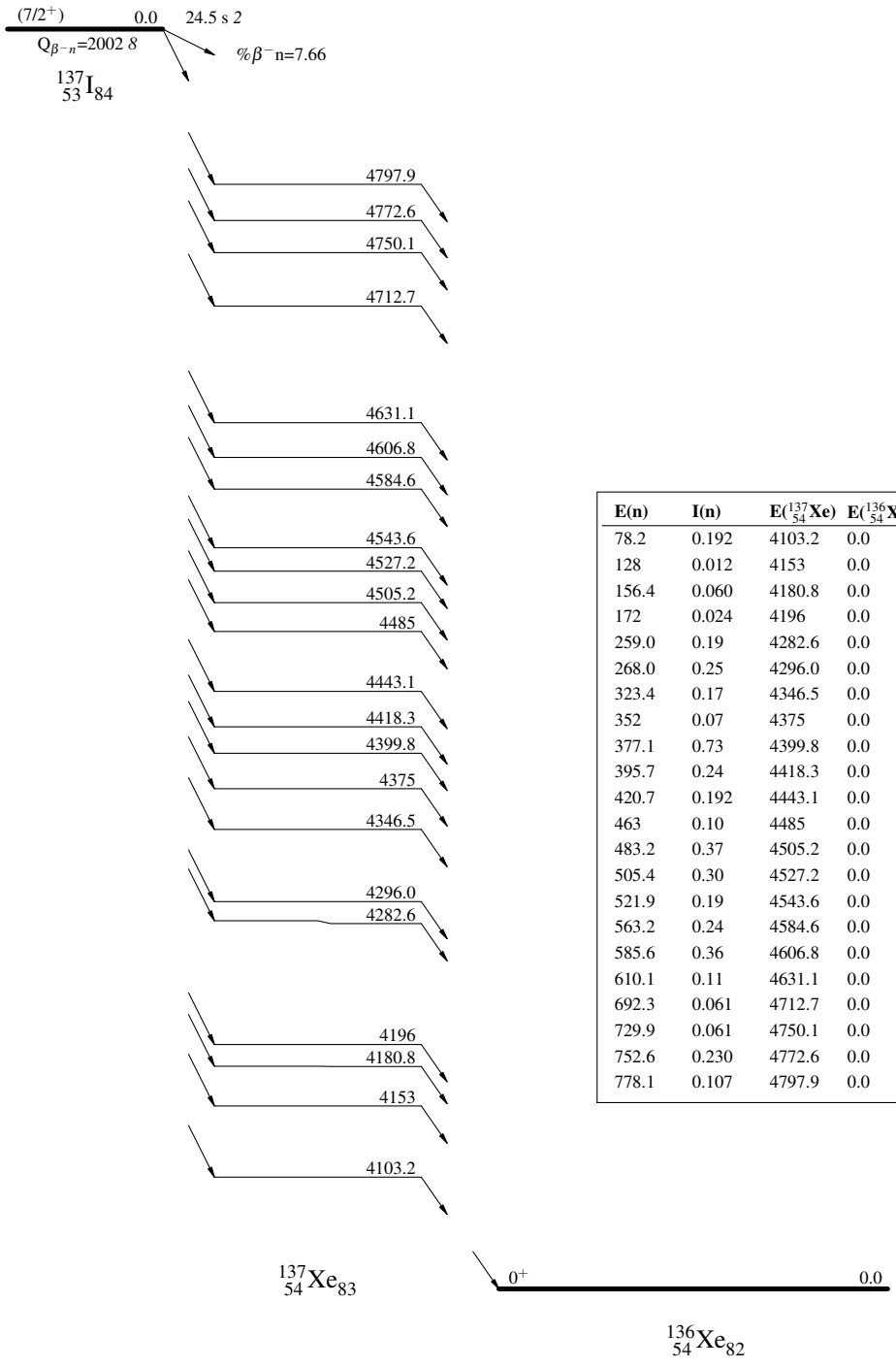
Decay Scheme

I(n) Intensities: Relative I(n)



E(n)	I(n)	E($^{137}_{54}$Xe)	E($^{136}_{54}$Xe)
78.2	0.192	4103.2	0.0
128	0.012	4153	0.0
156.4	0.060	4180.8	0.0
172	0.024	4196	0.0
259.0	0.19	4282.6	0.0
268.0	0.25	4296.0	0.0
323.4	0.17	4346.5	0.0
352	0.07	4375	0.0
377.1	0.73	4399.8	0.0
395.7	0.24	4418.3	0.0
420.7	0.192	4443.1	0.0
463	0.10	4485	0.0
483.2	0.37	4505.2	0.0
505.4	0.30	4527.2	0.0
521.9	0.19	4543.6	0.0
563.2	0.24	4584.6	0.0
585.6	0.36	4606.8	0.0
610.1	0.11	4631.1	0.0
692.3	0.061	4712.7	0.0
729.9	0.061	4750.1	0.0
752.6	0.230	4772.6	0.0
778.1	0.107	4797.9	0.0

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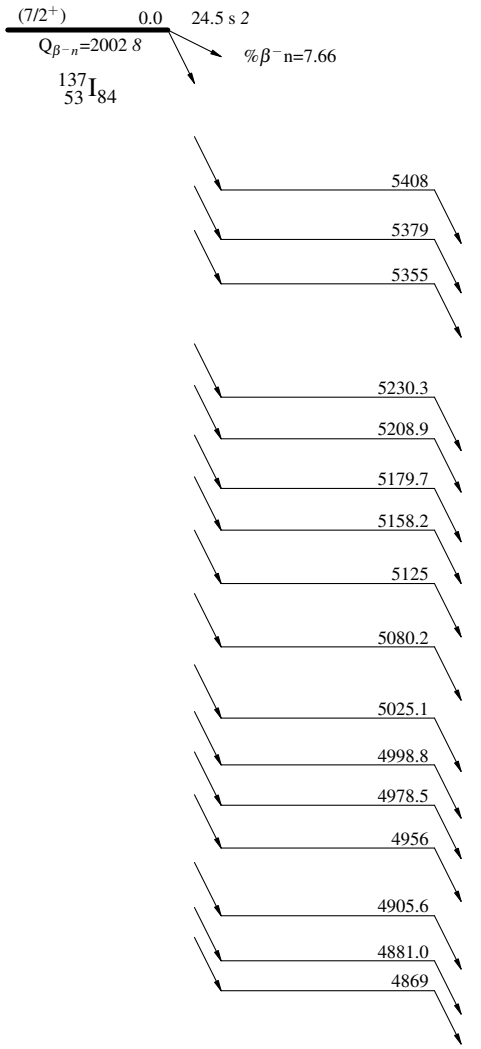
Decay Scheme (continued)

I(n) Intensities: Relative I(n)



E(n)	I(n)	E($^{137}_{54}$Xe)	E($^{136}_{54}$Xe)
850	0.10	4869	0.0
861.8	0.34	4881.0	0.0
886.6	0.048	4905.6	0.0
937	0.048	4956	0.0
960.0	0.169	4978.5	0.0
980.5	0.096	4998.8	0.0
1007.0	0.072	5025.1	0.0
1062.5	0.083	5080.2	0.0
1108	0.038	5125	0.0
1141.0	0.083	5158.2	0.0
1162.7	0.192	5179.7	0.0
1192.1	0.083	5208.9	0.0
1213.7	0.072	5230.3	0.0
1339	0.046	5355	0.0
1363	0.036	5379	0.0
1393	0.061	5408	0.0