^{120}Sn(p,nγ) 1982Em02,1979Ad02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Kitao, Y. Tendow and A. Hashizume	NDS 96, 241 (2002)	1-Dec-2001

1982Em02: E=3.90-6.25 MeV, γ, $\gamma\gamma$.
1979Ad02: E=3.40-4.10 MeV, γ, $\gamma\gamma$, γ(t), γ-ray linear pol, excit.
1976Io03: E=11 MeV, measured γ(t), ce, $T_{1/2}$, differential perturbed angular distribution.

^{120}Sb Levels

Levels are adopted from 1979Ad02 for levels lower than 450 keV and others are from 1982Em02.

E(level)[†]	J$^\pi$[‡]	$T_{1/2}$[#]	Comments
0.0	1^+		
8.37 *6*	$(2)^-$		
78.16 *5*	3^+	246 ns *2*	μ=+2.571 *6* (1976Io03) $T_{1/2}$: weighted average of 241 ns *3* (1979Ad02) and 247 ns *1* (1976Io03).
149.32 *5*	3^+		
166.09 *7*	3^-		
192.62 *4*	2^+		
233.09 *4*	2^+		
243.89 *6*	4		
260.20 *7*	3^-		
261.71 *9*	4		
334.08 *7*	4		
341.34 *7*	5		
343.24 *8*	4		
387.11 *14*	(3,4,5)		
390.34 *5*	2,3		
437.68 *6*	2^+		
447.68 *4*	1^+		
551.86 *17*			
616.69 *21*			
628.46 *11*	(3^+)		
636.59 *15*	(3,4)		
724.24 *13*	(3,4)		
729.82 *21*			
758.69 *21*			
760.92 *13*			
820.39 *21*			
821.69 *21*			
841.64 *14*	(3,4)		
901.69 *21*			
908.29 *21*			
1022.35 *17*			
1032.31 *15*	(2,3)		

[†] From a least-squares fit to the E(γ's) by the evaluators.
[‡] Proposed by authors (1982Em02) based on analyses of excitation functions and γ mult.
[#] No delayed γ's, unless noted otherwise. The limit is 8 ns for E(γ)<200 keV and 3 ns for E(γ)≥200 keV (1979Ad02).

^{120}Sn(p,nγ) 1982Em02,1979Ad02 (continued)

γ(^{120}Sb)

E_γ[†]	I_γ[@]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[&]	δ[a]	Comments
69.78 *4*	100	78.16	3+	8.37	(2)−	E1		α(K)exp=0.43 *4* (1976Io03) Mult.: from γ(θ) and α(K)exp (1976Io03).
71.14 *5*	18.2 *9*	149.32	3+	78.16	3+	D+Q		Mult.: from γ(θ).
81.5[‡] *1*	1.00 *5*	341.34	5	260.20	3−			
83.76 *7*	0.80 *4*	233.09	2+	149.32	3+			I_γ: other: 1.9 *6* if Iγ(448γ)=46.7 (1979Ad02).
90.2[‡] *1*	0.70 *4*	334.08	4	243.89	4			
94.51 *6*	7.0 *4*	243.89	4	149.32	3+	D+Q		I_γ: other: 9.0 *8* if Iγ(448γ)=10.1 (1979Ad02).
95.62 *6*	3.9 *2*	261.71	4	166.09	3−	D+Q		
97.33 *6*	0.80 *4*	341.34	5	243.89	4	D+Q		
114.47 *5*	41.7 *21*	192.62	2+	78.16	3+	D+Q	0.00 *4*	Mult.: from γ(θ).
117.4[‡] *1*	3.60 *18*	841.64	(3,4)	724.24	(3,4)			
125.4[‡] *1*	0.70 *4*	387.11	(3,4,5)	261.71	4			
132.5[‡] *1*	2.60 *13*	760.92		628.46	(3+)			
146.44 *5*	3.00 *15*	390.34	2,3	243.89	4	D+Q		
154.91 *7*	12.7 *6*	233.09	2+	78.16	3+			I_γ: other: 15.4 *6* if Iγ(448γ)=46.7 (1979Ad02).
157.21 *7*	1.00 *5*	390.34	2,3	233.09	2+			I_γ: other: 2.8 *6* if Iγ(228γ)=14.3 (1979Ad02).
157.66 *5*	35.6 *18*	166.09	3−	8.37	(2)−	D+Q		Mult.: from γ(θ).
165.61 *7*	10.1 *5*	243.89	4	78.16	3+	D+Q		
177.15 *5*	5.6 *3*	343.24	4	166.09	3−			
184.76 *5*	6.9 *3*	334.08	4	149.32	3+	D+Q		
192.63 *5*	19.0 *10*	192.62	2+	0.0	1+	M1+E2		I_γ: other: 13.2 *6* if Iγ(448γ)=15.4 (1979Ad02). Mult.: from γ(θ) and γ-ray linear pol.
197.77 *6*	14.3 *7*	390.34	2,3	192.62	2+			
214.60 *5*	4.50 *23*	447.68	1+	233.09	2+			
233.09 *5*	46.7 *23*	233.09	2+	0.0	1+			
245.10 *6*	2.30 *12*	437.68	2+	192.62	2+			I_γ: other: 3.5 *6* if Iγ(228γ)=18.6 (1979Ad02).
251.92 *5*	12.3 *6*	260.20	3−	8.37	(2)−	M1+E2	+0.07 *5*	Mult.: from γ(θ) and γ-ray linear pol.
255.02 *5*	12.8 *6*	447.68	1+	192.62	2+	D+Q		I_γ: other: 15.4 *15* if Iγ(448γ)=15.4 (1979Ad02).
271.43 *8*	4.80 *24*	437.68	2+	166.09	3−			
288.40 *5*	18.6 *9*	437.68	2+	149.32	3+	D+Q		
313.1[#] *2*	4.70 *24*	760.92		447.68	1+			
369.60 *6*	10.2 *5*	447.68	1+	78.16	3+			I_γ: other: 5.0 *15* if Iγ(448γ)=15.4 (1979Ad02).
372.8[‡] *2*	2.40 *12*	616.69		243.89	4			
390.2[‡] *2*	2.60 *13*	724.24	(3,4)	334.08	4			
392.7[‡] *2*	5.6 *3*	636.59	(3,4)	243.89	4			
395.3[‡] *2*	4.0 *2*	628.46	(3+)	233.09	2+			
403.5[‡] *2*	1.40 *7*	636.59	(3,4)	233.09	2+			
436.0[‡] *2*	11.2 *6*	628.46	(3+)	192.62	2+			
437.78[b] *6*	2.6 *6*	437.68	2+	0.0	1+			E_γ: from 1979Ad02, not reported in 1982Em02.
439.30 *9*	12.8 *6*	447.68	1+	8.37	(2)−			I_γ: other: 8.9 *10* if Iγ(448γ)=15.4 (1979Ad02).
447.64 *9*	15.4 *8*	447.68	1+	0.0	1+	D+Q		
470.4[‡] *2*	2.00 *10*	1022.35		551.86				
531.6[‡] *2*	7.8 *4*	724.24	(3,4)	192.62	2+			
543.4[‡] *2*	17.8 *9*	551.86		8.37	(2)−			
577.8[‡] *2*	3.10 *16*	821.69		243.89	4			

Continued on next page (footnotes at end of table)

^{120}Sn(p,nγ) 1982Em02,1979Ad02 (continued)

γ(^{120}Sb) (continued)

E_γ †	I_γ @	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ @	E_i(level)	J_i^π	E_f	J_f^π
580.5‡ *2*	2.60 *13*	729.82		149.32	3^+	632.1‡ *2*	5.00 *25*	1022.35		390.34	2,3
584.7‡ *2*	5.4 *3*	1032.31	(2,3)	447.68	1^+	641.9‡ *2*	3.50 *18*	1032.31	(2,3)	390.34	2,3
587.3‡ *2*	8.0 *4*	820.39		233.09	2^+	649.0‡ *2*	4.10 *21*	841.64	(3,4)	192.62	2^+
592.6‡ *2*	5.8 *3*	758.69		166.09	3^-	668.6‡ *2*	1.30 *7*	901.69		233.09	2^+
628.5‡ *2*	18.0 *9*	628.46	(3^+)	0.0	1^+	675.2‡ *2*	1.60 *8*	908.29		233.09	2^+

† From weighted av from 1982Em02 and 1979Ad02, unless otherwise noted.
‡ From 1982Em02, not reported in 1979Ad02.
# Deexciting γ of 758.96 level in 1982Em02. That seems to be misplaced because it is a poor fit to energy difference between relevant levels (evaluators).
@ From 1982Em02, relative to I(69.8γ)=100.
& From 1979Ad02, unless otherwise noted.
a From 1980Kr22.
b Placement of transition in the level scheme is uncertain.

^{120}Sn(p,nγ) 1982Em02,1979Ad02

Level Scheme

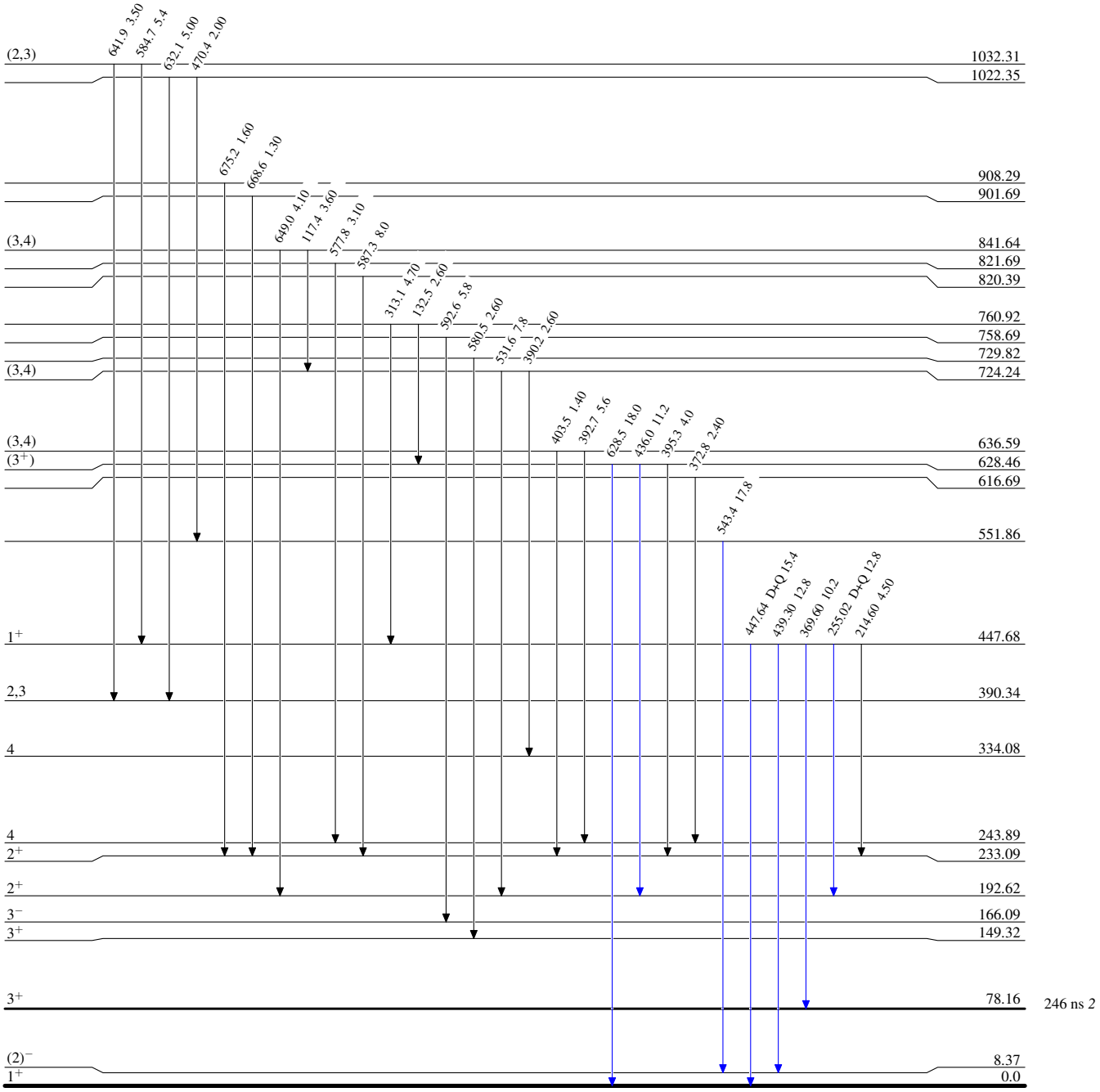
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



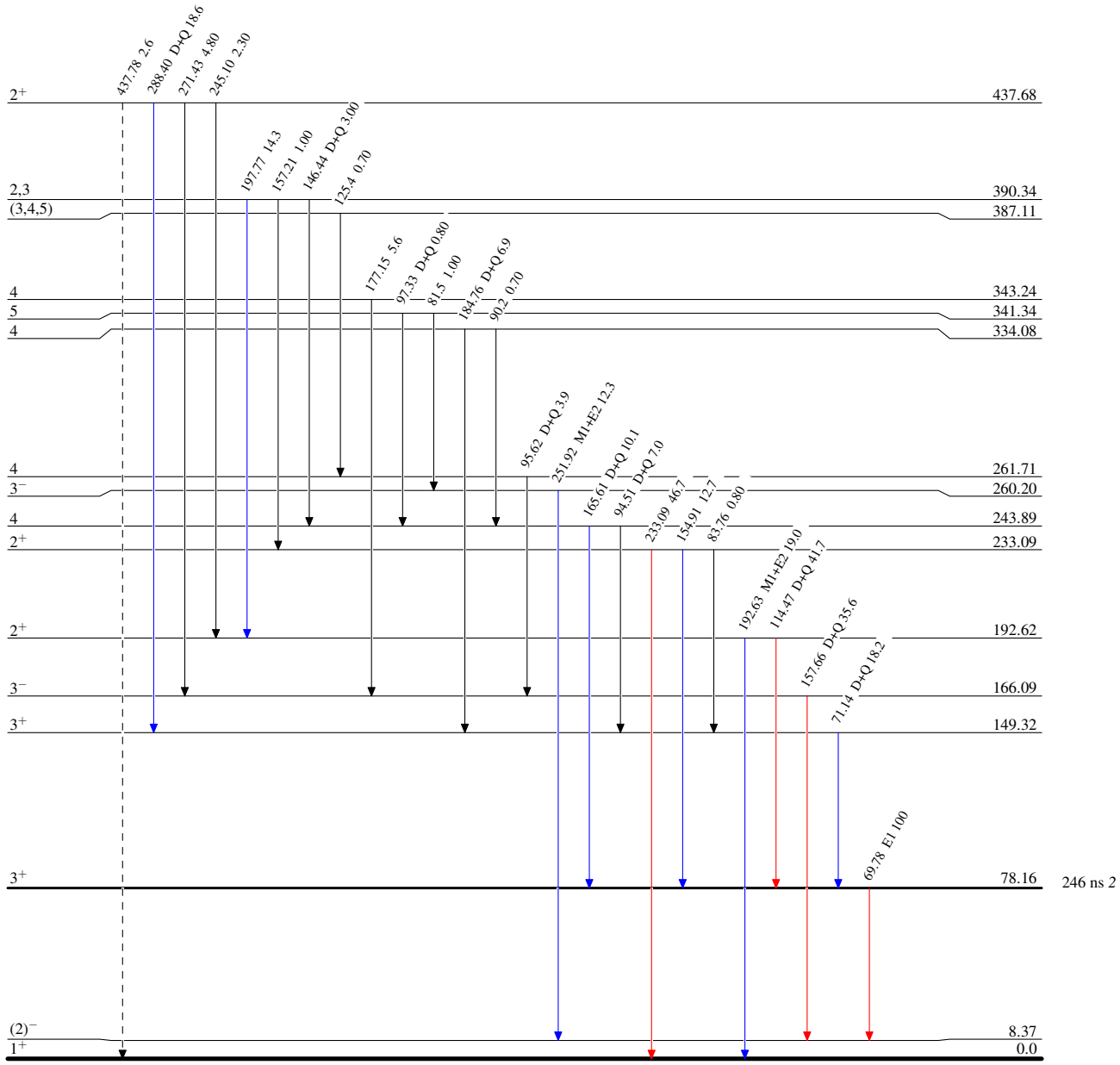
$^{120}_{51}Sb_{69}$

^{120}Sn(p,nγ) 1982Em02,1979Ad02

Level Scheme (continued)

Intensities: Relative I_γ

Legend
- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{120}_{51}Sb_{69}$