^{120}Sn(γ,γ') 1970Sc27,1973Sz02,1978Ka31

History

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

1978Ka30: E(γ)=6730 keV; semi, $\gamma(\theta)$ θ=90°−135°.
1978Ka31: E(γ)=7310 keV; semi, $\gamma(\theta)$ θ=90°−135°.
2000Br05,1999Br12: 4.1 MeV electrons bremsstrahlung; semi, $\gamma(\theta)$ θ=90°, 127°, 150°, $T_{1/2}$; two Compton polarimeters at 90 ‘, 95° for linear polarization measurements.
1981Ca10, 1977Ca14: E(γ)≈0.5-1.65 MeV, $\gamma(\theta)$.
1973Sz02: E(γ)=7693 keV; semi, $\gamma(\theta)$ θ=90°, 135°.
1970Sc27: E(γ)=7696, 8998 keV; scin semi.
1966Hr03: E(γ)=1171 keV.
The 8992-keV level and decay scheme are from 1970Sc27, the 7690-keV level from 1970Sc27 and 1973Sz02, the 7310-keV level from 1978Ka31, and the 6728-keV from 1978Ka31.

^{120}Sn Levels

E(level)†	J^π‡	$T_{1/2}$#	Comments
0.0	0^+		
1171.2& *6*	2^+	0.63 ps *8*	B(E2)↑=0.2521 *299* WIDTH0=0.90 *11*. $T_{1/2}$: weighted av of 0.72 ps *6* (1977Ca14,1981Ca10), 0.87 ps *17* (1966Hr03), and 0.51 ps *6* (2000Br05).
2097			
2160			
2173	(0,1,2)		
2310			
2355	2^+		
2421			
2587			
2728.9& *11*		0.15 ps *7*	B(E2)↑=0.0054 *21* WIDTH0=1.3 *5*. $T_{1/2}$: branching ratio(2729γ)=0.44 *3* from (n,n′γ).
2844?			
2930.2& *6*	2^+	0.11 ps *2*	B(E2)↑=0.0078 *1* WIDTH0=2.7 *4*. $T_{1/2}$: branching ratio(2930γ)=0.65 *3* from (n,n′γ).
3000?			
3035			
3157.6& *5*	2^+	71 fs *8*	B(E2)↑=0.00104 *10* WIDTH0=5.3 *5*. $T_{1/2}$: branching ratio(3157γ)=0.841 *6* from (n,n′γ), value of 0.825 *16* cited is a typo by authors.
3278.8& *6*	$1^{(-)}$	72 fs *1*	B(E1)↑=7.60×10^{-5} *51* WIDTH0=94 *6*. $T_{1/2}$: branching ratio(3285γ)=1 from (n,n′γ).
3284.9& *8*		0.9 ps *3*	B(E2)↑=0.0008 *3* WIDTH0=0.50 *17*. $T_{1/2}$: branching ratio(3523γ)=0.630 *25* from (n,n′γ).
3548			
3582.5& *7*		0.30 ps *10*	B(E2)↑=0.0010 *3* WIDTH0=0.9 *3*. $T_{1/2}$: branching ratio(3583γ)=0.56 *15* from (n,n′γ).
3631			
3764.6& *15*	1	89 fs *17*	B(E1)↑=0.28×10^{-5} *5*

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^{120}Sn(γ,γ′) 1970Sc27,1973Sz02,1978Ka31 (continued)

^{120}Sn Levels (continued)

E(level)†	Jπ‡	$T_{1/2}$#	Comments
			WIDTH0=5.1 *10*. $T_{1/2}$: branching ratio(3765γ)=0.53 *4* from (n,n′γ).
3835.6& *10*		0.13 ps *6*	B(E2)↑=0.0013 *5* WIDTH0=1.8 *7*. $T_{1/2}$: branching ratio(3836γ)=0.49 *4* from (n,n′γ).
4006.4& *9*		0.17 ps *5*	B(E2)↑=0.0016 *5* WIDTH0=2.7 *8*. $T_{1/2}$: branching ratio(4006γ)=1 from (n,n′γ).
4147[a] *3*			
6729@ *2*	1		Jπ: from γ(θ) (1978Ka30).
7310@ *2*	1		Γ=0.030 eV *12* (1978Ka30). Jπ: from γ(θ) (1978Ka31). E(level): uncertainty is assigned by the evaluators.
7689.3@ *16*	1−		Γ=0.12 eV *3*, $\Gamma_{\gamma 0}$=0.07 eV *2* (1970Sc27). Jπ: from γ(θ) (1970Sc27).
8991.7@ *13*	1		Jπ: from γ(θ) (1973Sz02).

† Values rounded off from Adopted Levels, unless otherwise noted.
‡ Values for low-lying levels from 1973Sz02 based on γ(θ).
# From $\Gamma^2_{\gamma 0}/\Gamma_\gamma$ in (2000Br05) and branching ratios from (n,n′γ), unless otherwise noted.
@ Unweighted av of Eγ+E(level).
& From 2000Br05.
[a] From E(resonant level)-Eγ, uncertainty does not include that of Eγ.

γ(^{120}Sn)

E_i(level)	J^π_i	E_γ†	I_γ†	E_f	J^π_f	Mult.	Comments
1171.2	2+	1171@ *1*	100 *58*	0.0	0+		I_γ: 12 *7* relative to I(6730 γ)=100 (1978Ka30).
6729	1	4306@	5@ *3*	2421			
		5559@[a]	1@ *3*	1171.2	2+		
		6730@	100@ *6*	0.0	0+		
7310	1	5150#	14#	2160			
		7310#	100#	0.0	0+		
7689.3	1−	4059	18 *6*	3631			
		4846&[a]	11& *4*	2844?			
		5095	8 *3*	2587			
		5335‡	12.3‡ *8*	2355	2+	E1	E_γ: unweighted av from 1973Sz02 and 1970Sc27.
		5520‡	1.4‡ *3*	2173	(0,1,2)	D	
		6522‡	7.3‡ *5*	1171.2	2+	E1	
		7695‡	100‡ *1*	0.0	0+	E1	E_γ: unweighted av from 1973Sz02 and 1970Sc27.
8991.7	1	4846&[a]	172& *69*	4147			
		5443	62 *38*	3548			
		5963	85 *30*	3035			
		5993[a]	70 *40*	3000?			
		6264	39 *27*	2728.9			
		6634	140 *35*	2355	2+		
		6675	85 *27*	2310			
		6833	47 *34*	2160			

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^{120}Sn(γ,γ') 1970Sc27,1973Sz02,1978Ka31 (continued)

$\gamma(^{120}Sn)$ (continued)

E_i(level)	E_γ[†]	I_γ[†]	E_f	J^π_f
8991.7	6890	98 *29*	2097	
	7823	47 *17*	1171.2	2^+
	8995[‡]	100[‡] *18*	0.0	0^+

[†] From 1970Sc27, unless otherwise noted. Values are relative Iγ from each level.
[‡] From 1973Sz02.
[#] From 1978Ka31. Uncertainty is estimated from 1978Ka30 by the evaluators.
[@] From 1978Ka30.
[&] Multiply placed with intensity suitably divided.
[a] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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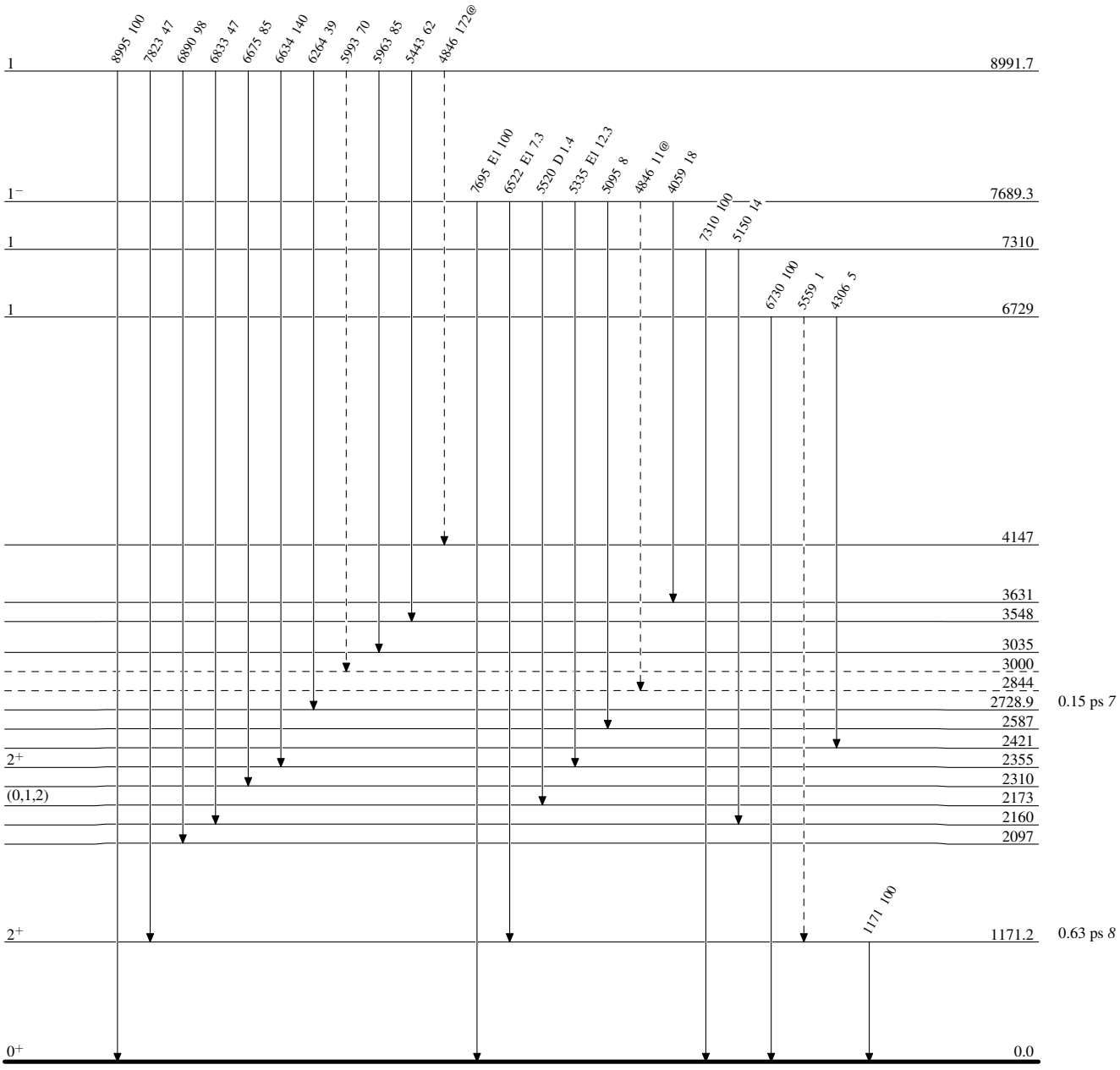
Legend

Level Scheme

Intensities: Relative photon branching from each level
@ Multiply placed: intensity suitably divided

γ Decay (Uncertain)



$^{120}_{50}Sn_{70}$