

¹²²Sn(n,n'γ) 1991De38,1991Go24

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	T. Tamura	NDS 108, 455 (2007)	30-Sep-2006

1991De38: enriched ¹²²Sn target; reactor fast neutrons; measured E_γ, I_γ, γ(θ); deduced mult. and δ, E(levels), J^π. added 6 new levels to the previous studies, and at the time, withdrew the 3041.8- and 3235.9-keV levels and the associated γ's which were previously reported in **1978De41**. The completeness of the observation of E(J^π=0⁺)<2.9 MeV, E(J^π=1-5)<3.2 MeV are discussed.

1991Go24: reactor fast neutrons; measured T_{1/2}, Doppler-shift attenuation method.

Other: **1978De41:** reactor fast neutrons; semi g; enriched target; **1978De31:** reactor fast neutrons; semi γ; γ(θ).

¹²²Sn Levels

E(level)	J ^π †	T _{1/2} ‡	E(level)	J ^π †	T _{1/2} ‡
0.0	0 ⁺		3082.20 6	4 ⁺	0.19 ps +15-6
1140.513 17	2 ⁺		3127.53 8	2 ⁺	0.043 ps +10-7
2087.70 3	0 ⁺	>0.277 ps	3130.53 17		
2142.06 3	4 ⁺	>0.346 ps	3206.40 14	(0) ⁺	
2153.775 25	2 ⁺	0.69 ps +55-21	3233.75 8	4 ⁺	
2245.82 5	5 ⁻		3281.43 9		0.10 ps +10-4
2331.08 3	4 ⁺	0.83 ps +69-28	3305.64 8	4 ⁺	
2409.05 6	7 ⁻		3358.59 9	1 ⁻	0.006 ps +4-3
2415.543 23	2 ⁺	0.33 ps +10-7	3362.84? 9	3 ⁻	
2492.68 3	3 ⁻	0.079 ps +5-3	3371.21 14	(2) ⁺	
2530.34 5	(0) ⁺		3454.81 13	(3) ⁻	
2555.41 6	6 ⁺		3478.62 21	(7) ⁻	
2651.38 6	4 ⁻ , 5 ⁻ , 6 ⁻		3548.60 11	2 ⁺	0.06 ps +9-3
2653.02 7	6 ⁻		3568.14 20		
2675.57 6	0 ⁺		3582.35 18	2 ⁺	0.028 ps +16-10
2689.99 10	(8) ⁺		3704.9 5	(2) ⁺	
2734.50 3	2 ⁺	0.49 ps +69-21	3730.00 19		
2751.03 7	5 ⁻		3751.3 6	2 ⁺	0.055 ps +69-41
2775.61 4	2 ⁺	0.62 ps +83-28	3758.51 20	1,2 ⁺	0.028 ps +41-20
2837.87 7	6 ⁻		3777.0 3		
2855.48 5	4 ⁻		3782.2 5	(4) ⁺	
2867.73 7		0.13 ps +20-6	3819.85 20	2 ⁺	0.049 ps +62-21
2879.79 5	1 ⁺ , 2 ⁺	0.111 ps +55-28	3840.4 3	(4) ⁺	
2944.93 5	3 ⁺		3929.9 5	1,2 ⁺	
2959.12 5	4 ⁺		4004.0 8	(2) ⁺	
2973.27 5	4 ⁺		4106.9 9	1,2 ⁺	
3035.91 7	3 ⁻		4283.8 9	(2) ⁺	

† From Adopted Levels; **1991De38** discuss γ(θ) and linear polarization data for the J^π assignment.

‡ From Doppler-shift attenuation method (**1991Go24**).

γ(¹²²Sn)

E _γ †	I _γ ‡	E _i (level)	J _i ^π	E _f	J _f ^π	Mult.#	δ#	Comments
103.2 2	12.8 5	2245.82	5 ⁻	2142.06	4 ⁺	E1(+M2)	+0.03 2	Mult.: from adopted gammas; A ₂ =-0.205 6, A ₄ =-0.005 7.
146.0 2	0.083 8	2555.41	6 ⁺	2409.05	7 ⁻			
163.22 2	1.44 6	2409.05	7 ⁻	2245.82	5 ⁻	E2		Mult.: from adopted gammas.
180.42 10	0.115 8	3035.91	3 ⁻	2855.48	4 ⁻			
204.16 7	0.217 14	2734.50	2 ⁺	2530.34	(0) ⁺			Mult.: A ₂ =+0.25 4, A ₄ =-0.08 5.
^x 211.7 2	0.063 6							

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$^{122}\text{Sn}(n,n'\gamma)$ **1991De38,1991Go24** (continued) $\gamma(^{122}\text{Sn})$ (continued)

E_γ †	I_γ ‡	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\delta^\#$	Comments
$^{x}216.21$ 13	0.076 7							
224.5 2	0.046 5	2959.12	4 ⁺	2734.50	2 ⁺			
243.97 3	0.58 3	2653.02	6 ⁻	2409.05	7 ⁻	M1(+E2)	-0.07 4	Mult.: $A_2=-0.05$ 3, $A_4=0.00$ 4, lin pol=+0.4 2.
$^{x}263.6$ 4	<0.03							
$^{x}268.3$ 3	0.055 8							
280.94 8	0.209 13	2689.99	(8 ⁺)	2409.05	7 ⁻			
$^{x}293.6$ 3	<0.03							
309.59 3	0.83 4	2555.41	6 ⁺	2245.82	5 ⁻	E1(+M2)	+0.01 2	Mult.: $A_2=-0.212$ 10, $A_4=+0.002$ 20, lin pol=+1.9 +6-4.
$^{x}320.2$ 3	0.027 5							
$^{x}349.0$ 2	0.062 7							
362.84 6	0.211 11	2855.48	4 ⁻	2492.68	3 ⁻	M1(+E2)	-0.01 6	Mult.: $A_2=-0.26$ 9, $A_4=+0.05$ 13; $\Delta\pi=\text{no}$ from mult.(609 γ).
376.6 2	0.079 7	2530.34	(0) ⁺	2153.775	2 ⁺			
384.54 5	0.30 2	3035.91	3 ⁻	2651.38	4 ⁻ ,5 ⁻ ,6 ⁻	M1+E2	+0.26 8	Mult.: $A_2=-0.31$ 4, $A_4=-0.01$ 5; $\Delta\pi=\text{no}$ from mult.(882 γ).
405.56 3	3.15 13	2651.38	4 ⁻ ,5 ⁻ ,6 ⁻	2245.82	5 ⁻	M1+E2	+0.10 2	Mult.: $A_2=-0.266$ 8, $A_4=-0.029$ 12 or $A_2=-0.255$ 10, $A_4=0$, lin pol=+0.85 12.
407.3 2	0.84 4	2653.02	6 ⁻	2245.82	5 ⁻	M1(+E2)	+0.03 2	Mult.: $A_2=-0.193$ 12, $A_4=+0.017$ 19, lin pol=+0.5 +3-2.
$^{x}418.56$ 5	0.37 2							
428.94 13	0.136 9	2837.87	6 ⁻	2409.05	7 ⁻	M1(+E2)	+0.00 4	$A_2=+0.026$ 22, $A_4=+0.090$ 32. Mult.: $A_2=-0.16$ 6, $A_4=-0.01$ 8; $\Delta\pi=\text{no}$ from mult.(592 γ).
$^{x}434.3$ 2	0.083 7							
440.54 13	0.137 9	3130.53		2689.99	(8 ⁺)			
466.42 11	0.105 8	2959.12	4 ⁺	2492.68	3 ⁻	E1(+M2)	+0.08 8	Mult.: $A_2=-0.10$ 7, $A_4=0.00$ 11, $\Delta\pi=\text{yes}$ from mult.(1818 γ).
505.20 4	1.62 15	2751.03	5 ⁻	2245.82	5 ⁻	M1+E2		Mult.: $A_2=+0.392$ 13, $A_4=-0.050$ 16, lin pol=+2.5 +9-4. δ : +0.07 5 or +0.77 7.
$^{x}517.16$ 16	0.042 6							
$^{x}538.75$ 8	0.243 13							
543.4 2	0.100 7	3035.91	3 ⁻	2492.68	3 ⁻			
$^{x}544.8$ 2	0.099 8							
$^{x}580.62$ 14	0.122 7							
592.03 4	0.46 2	2837.87	6 ⁻	2245.82	5 ⁻	M1(+E2)	+0.01 3	Mult.: $A_2=-0.19$ 3, $A_4=+0.04$ 4, lin pol=+0.3 2.
609.64 3	1.44 6	2855.48	4 ⁻	2245.82	5 ⁻	M1+E2	-0.35 4	Mult.: $A_2=+0.284$ 12, $A_4=+0.068$ 18, lin pol=+0.6 2.
613.76 13	0.112 7	2944.93	3 ⁺	2331.08	4 ⁺	M1+E2		Mult.: $A_2=-0.24$ 6, $A_4=+0.05$ 8; $\Delta\pi=\text{no}$ from mult.(1805 γ). δ : +0.3 2 or +6 +9-3. $A_2=+0.19$ 4, $A_4=-0.08$ 6.
$^{x}638.51$ 10	0.163 9							
$^{x}657.4$ 2	0.097 8							
$^{x}669.7$ 3	0.091 8							
$^{x}675.4$ 2	0.090 8							
$^{x}680.28$ 7	0.221 14							$A_2=-0.60$ 4, $A_4=-0.02$ 6.
$^{x}704.27$ 15	0.182 12							
750.9 2	0.117 10	3082.20	4 ⁺	2331.08	4 ⁺	M1+E2		Mult.: $A_2=+0.17$ 7, $A_4=-0.14$ 9; RUL. δ : +1.6 8 or -0.2 2.
791.14 5	0.64 3	2944.93	3 ⁺	2153.775	2 ⁺	M1+E2	+1.4 +10-4	Mult.: $A_2=+0.46$ 2, $A_4=+0.06$ 3; $\Delta\pi=\text{no}$ from mult.(1805 γ). $A_2=-0.34$ 4, $A_4=-0.09$ 4.
$^{x}794.46$ 9	0.39 3							

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$^{122}\text{Sn}(n,n'\gamma)$ **1991De38,1991Go24 (continued)** $\gamma(^{122}\text{Sn})$ (continued)

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\delta^\#$	Comments
819.48 5	0.57 3	2973.27	4 ⁺	2153.775	2 ⁺	E2		Mult.: $A_2=+0.32$ 2, $A_4=-0.06$ 3; $\Delta\pi=\text{no}$ from mult.(831 γ).
825.6 2	0.107 10	3478.62	(7 ⁻)	2653.02	6 ⁻			
831.22 5	0.45 2	2973.27	4 ⁺	2142.06	4 ⁺	M1+E2	-0.61 10	Mult.: $A_2=-0.032$ 16, $A_4=-0.019$ 22, lin pol=+1.4 +10-6.
^x 864.30 16	0.082 8							
878.7 2	0.103 8	3758.51	1,2 ⁺	2879.79	1 ⁺ ,2 ⁺			
882.00 13	0.43 2	3035.91	3 ⁻	2153.775	2 ⁺	E1(+M2)	-0.01 4	Mult.: $A_2=-0.21$ 4, $A_4=0.0$, lin pol=+1.9 +60-12.
902.60 16	0.133 11	3233.75	4 ⁺	2331.08	4 ⁺	M1(+E2)	+0.5 6	Mult.: $A_2=+0.46$ 2, $A_4=+0.20$ 13; $\Delta\pi=\text{no}$ from Adopted Levels.
^x 907.0 2	0.087 9							
947.18 2	2.13 11	2087.70	0 ⁺	1140.513	2 ⁺	E2		Mult.: lin pol=+0.96 24, $\Delta\pi=\text{no}$ from Adopted Levels.
974.55 10	0.217 5	3305.64	4 ⁺	2331.08	4 ⁺	M1+E2		Mult.: $A_2=+0.13$ 4, $A_4=-0.01$ 5; $\Delta\pi=\text{no}$ from Adopted Levels. $\delta: -0.33$ 12 or +2.1 6.
1001.54 2	22.5 11	2142.06	4 ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=+0.292$ 5, $A_4=-0.080$ 6, lin pol=+2.7 +8-3.
1013.25 2	9.7 5	2153.775	2 ⁺	1140.513	2 ⁺	M1+E2	+3.8 4	Mult.: $A_2=+0.086$ 5, $A_4=-0.023$ 7, lin pol=+0.72 9. $A_2=-0.19$ 4, $A_4=+0.05$ 6.
^x 1027.57 8	0.209 12							
^x 1044.4 2	0.099 8							
^x 1048.28 11	0.262 13							$A_2=+0.43$ 4, $A_4=+0.17$ 6.
^x 1053.40 12	0.203 11							$A_2=+0.07$ 6, $A_4=+0.07$ 7.
^x 1059.90 6	0.34 2							$A_2=-0.13$ 3, $A_4=-0.01$ 4.
1091.71 8	0.298 15	3233.75	4 ⁺	2142.06	4 ⁺	M1(+E2)		Mult.: $A_2=+0.33$ 6, $A_4=-0.04$ 7; $\Delta\pi=\text{no}$ from Adopted Levels. $\delta: +0.06$ 10 or +1.0 2. $A_2=+0.19$ 4, $A_4=-0.04$ 5.
1105.33 10	0.207 12	2245.82	5 ⁻	1140.513	2 ⁺			
^x 1106.53 10	0.175 11							
^x 1117.64 13	0.196 12							$A_2=+0.28$ 6, $A_4=-0.06$ 7.
^x 1124.00 12	0.188 11							$A_2=+0.42$ 4, $A_4=+0.19$ 6.
^x 1127.92 9	0.243 13							$A_2=-0.01$ 4, $A_4=+0.05$ 5.
1140.51 2	100	1140.513	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.214$ 5, $A_4=-0.075$ 6, lin pol=+2.0 +4-2.
^x 1148.4 2	0.124 12							
^x 1154.8 2	0.080 7							
1163.58 11	0.146 9	3305.64	4 ⁺	2142.06	4 ⁺	M1+E2		Mult.: $A_2=+0.08$ 6, $A_4=-0.01$ 8; $\Delta\pi=\text{no}$ from Adopted Levels. $\delta: -0.4$ 2 or +2.6 8.
1190.55 2	5.6 3	2331.08	4 ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=+0.297$ 4, $A_4=-0.075$ 6, lin pol=+3.4 +21-6.
^x 1197.9 3	0.053 5							
1209.06 8	0.261 14	3362.84?	3 ⁻	2153.775	2 ⁺	E1(+M2)	+0.03 3	Mult.: $A_2=-0.21$ 2, $A_4=-0.07$ 3; $\Delta\pi=\text{yes}$, $\Delta J=1$ from Adopted Levels.
1217.5 2	0.078 6	3371.21	(2 ⁺)	2153.775	2 ⁺			
^x 1222.0 3	0.033 4							
^x 1249.76 9	0.205 11							
^x 1254.4 4	0.032 4							
^x 1265.5 3	0.041 4							
1275.03 3	1.10 6	2415.543	2 ⁺	1140.513	2 ⁺	M1+E2	-0.34 4	Mult.: $A_2=-0.021$ 9, $A_4=-0.032$ 12 or $A_2=-0.009$ 9, $A_4=-0.003$, lin pol=+1.6 +5-3.
^x 1283.9 2	0.109 8							
^x 1286.0 2	0.118 8							

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$^{122}\text{Sn}(n,n'\gamma)$ **1991De38,1991Go24** (continued) $\gamma(^{122}\text{Sn})$ (continued)

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\delta^\#$	Comments
1300.8 2	0.291 15	3454.81	(3 ⁻)	2153.775	2 ⁺			$A_2=-0.08$ 3, $A_4=-0.05$ 5.
^x 1322.4 2	0.084 6							
^x 1329.9 3	0.065 6							
^x 1333.1 4	0.058 6							
^x 1337.0 2	0.183 10							
1352.17 2	5.4 3	2492.68	3 ⁻	1140.513	2 ⁺	E1(+M2)	-0.03 2	Mult.: $A_2=-0.208$ 4, $A_4=-0.009$ 6, lin pol=+2.2 +6-3,
^x 1360.3 2	0.069 6							
^x 1373.20 6	0.295 15							$A_2=-0.24$ 3, $A_4=+0.05$ 4.
^x 1377.9 3	0.032 4							
^x 1384.1 3	0.069 6							
^x 1386.53 15	0.198 10							
1389.82 5	1.00 4	2530.34	(0) ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=0.00$ 2, $A_4=-0.01$ 3, lin pol=+1.0 2. $A_2=+0.25$ 3, $A_4=-0.09$ 4.
^x 1393.68 9	0.272 14							
1398.5 6	0.048 5	3730.00		2331.08	4 ⁺			
1404.3 2	0.106 10	3819.85	2 ⁺	2415.543	2 ⁺			$A_2=-0.08$ 8, $A_4=-0.28$ 12.
1406.4 2	0.068 6	3548.60	2 ⁺	2142.06	4 ⁺			
^x 1408.8 2	0.131 11							$A_2=+0.05$ 7, $A_4=-0.06$ 10.
^x 1415.8 2	0.098 7							
^x 1420.6 2	0.055 5							
^x 1426.9 3	0.033 4							
^x 1489.2 2	0.060 5							
^x 1499.2 2	0.056 5							
1535.05 5	0.50 2	2675.57	0 ⁺	1140.513	2 ⁺			$A_2=-0.001$ 13, $A_4=+0.004$ 13, lin pol=+1.1 3.
^x 1538.6 3	0.082 8							
1593.97 3	0.80 4	2734.50	2 ⁺	1140.513	2 ⁺	M1+E2	-3.5 6	Mult.: $A_2=-0.158$ 8, $A_4=-0.032$ 11, lin pol=+1.1 2.
1635.09 3	1.43 7	2775.61	2 ⁺	1140.513	2 ⁺	M1+E2	+0.14 2	Mult.: $A_2=+0.114$ 6, $A_4=-0.001$ 10, lin pol=+2.4 +6-4.
^x 1649.7 3	0.055 6							
^x 1687.3 2	0.091 6							
1698.2 3	0.079 6	3840.4	(4 ⁺)	2142.06	4 ⁺			
1727.20 6	0.35 2	2867.73		1140.513	2 ⁺			
1739.27 4	0.75 4	2879.79	1 ⁺ ,2 ⁺	1140.513	2 ⁺	M1+E2		Mult.: $A_2=+0.028$ 13, $A_4=-0.009$ 18, lin pol=+1.3 3. δ : -0.3 2 or -1.4 6.
1804.53 11	0.206 11	2944.93	3 ⁺	1140.513	2 ⁺	M1+E2	+5.1 17	Mult.: $A_2=+0.26$ 3, $A_4=+0.12$ 3, lin pol=+1.2 8.
1818.60 5	0.72 4	2959.12	4 ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=+0.292$ 12, $A_4=-0.068$ 17, lin pol=+1.9 +14-6.
^x 1857.6 3	0.051 5							
1895.41 9	0.226 12	3035.91	3 ⁻	1140.513	2 ⁺	E1(+M2)	-0.03 3	Mult.: $A_2=-0.22$ 2, $A_4=+0.03$ 3; $\Delta\pi$ =yes from mult.(882 γ).
^x 1904.36 12	0.31 2							
1941.68 5	0.69 4	3082.20	4 ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=+0.347$ 17, $A_4=-0.055$ 23; RUL.
^x 1987.3 2	0.089 6							
2065.87 13	0.174 12	3206.40	(0) ⁺	1140.513	2 ⁺			$A_2=-0.01$ 4, $A_4=0.00$ 6.
2093.1 4	0.125 8	3233.75	4 ⁺	1140.513	2 ⁺	E2		Mult.: $A_2=+0.34$ 9, $A_4=-0.08$; $\Delta\pi$ =no from Adopted Levels.
2140.90 8	0.33 2	3281.43		1140.513	2 ⁺			$A_2=+0.177$ 19, $A_4=+0.010$ 25.
2153.72 10	0.292 15	2153.775	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.20$ 4, $A_4=-0.07$ 5; $\Delta\pi$ =no from mult.(1013 γ).
2230.6 4	0.128 8	3371.21	(2 ⁺)	1140.513	2 ⁺	D(+Q)		Mult.: $A_2=+0.12$ 5, $A_4=-0.09$ 7, δ : -0.09 8 or +3.1 8.

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$^{122}\text{Sn}(n,n'\gamma)$ **1991De38,1991Go24 (continued)** $\gamma(^{122}\text{Sn})$ (continued)

E_γ^\dagger	I_γ^\ddagger	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	$\delta^\#$	Comments
2314.40 15	0.124 8	3454.81	(3 ⁻)	1140.513	2 ⁺	D(+Q)	-0.03 5	Mult.: $A_2=-0.23$ 4, $A_4=+0.02$ 5.
^x 2354.9 8	0.035 4							
2408.12 13	0.153 9	3548.60	2 ⁺	1140.513	2 ⁺			$A_2=-0.04$ 3, $A_4=-0.04$ 4.
2415.51 3	2.64 13	2415.543	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.238$ 7, $A_4=-0.107$ 10; $\Delta\pi=\text{no}$ from Adopted Levels.
2427.6 2	0.242 13	3568.14		1140.513	2 ⁺			$A_2=+0.12$ 3, $A_4=-0.01$ 4.
2441.8 4	0.44 4	3582.35	2 ⁺	1140.513	2 ⁺			
^x 2494.4 3	0.152 9							$A_2=+0.06$ 4, $A_4=-0.19$ 5.
^x 2512.5 5	0.030 5							
2563.9 6	0.062 6	3704.9	(2 ⁺)	1140.513	2 ⁺			
2589.5 2	0.084 6	3730.00		1140.513	2 ⁺			
2636.5 3	0.146 10	3777.0		1140.513	2 ⁺			
2641.7 5	0.106 8	3782.2	(4 ⁺)	1140.513	2 ⁺	Q		Mult.: $A_2=+0.31$ 7, $A_4=-0.13$ 8.
^x 2669.0 4	0.084 6							$A_2=+0.18$ 8, $A_4=-0.20$ 10.
2700.5 6	0.039 5	3840.4	(4 ⁺)	1140.513	2 ⁺			
^x 2713.5 6	0.023 5							
2734.49 5	1.06 5	2734.50	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.230$ 11, $A_4=-0.127$ 15; $\Delta\pi=\text{no}$ from mult.(1594 γ).
2775.58 8	0.68 3	2775.61	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.279$ 15, $A_4=-0.140$ 20; $\Delta\pi=\text{no}$ from mult.(1635 γ).
2789.7 7	0.015 4	3929.9	1,2 ⁺	1140.513	2 ⁺			
^x 2831.4 3	0.081 6							$A_2=+0.04$ 7, $A_4=+0.11$ 9.
2879.6 3	0.123 8	2879.79	1 ⁺ ,2 ⁺	0.0	0 ⁺			$A_2=-0.12$ 6, $A_4=0.0$.
^x 2885.4 3	0.079 6							
^x 2893.4 7	0.031 6							
^x 2897.7 7	0.053 6							
^x 2924.4 4	0.062 6							
^x 2984.7 5	0.083 6							
^x 2992.6 4	0.064 6							
^x 3025.4 5	0.056 5							
^x 3036.4 3	0.062 5							
^x 3082.5 6	0.080 9							
^x 3088.8 6	0.118 9							
3127.49 8	0.62 3	3127.53	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.288$ 15, $A_4=-0.087$ 19; $\Delta\pi=\text{no}$ from Adopted Levels.
^x 3185.4 4	0.049 5							
^x 3209.0 3	0.043 5							
^x 3225.5 6	0.041 4							
^x 3352.0 8	0.025 4							
3358.54 9	0.40 2	3358.59	1 ⁻	0.0	0 ⁺			$A_2=-0.11$ 2, $A_4=0.00$ 3.
3371.1 2	0.192 11	3371.21	(2 ⁺)	0.0	0 ⁺	Q		Mult.: $A_2=+0.30$ 4, $A_4=-0.10$ 5.
^x 3386.2 7	0.038 5							
^x 3476.4 4	0.055 5							
3582.3 2	0.191 11	3582.35	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.25$ 4, $A_4=-0.08$ 5; RUL.
3705.7 8	0.085 6	3704.9	(2 ⁺)	0.0	0 ⁺	Q		Mult.: $A_2=+0.24$ 10, $A_4=-0.20$ 12.
3751.2 6	0.114 7	3751.3	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.22$ 5, $A_4=-0.08$ 7; RUL.
3758.6 7	0.054 4	3758.51	1,2 ⁺	0.0	0 ⁺			$A_2=-0.13$ 10, $A_4=0.0$.
^x 3788.8 10	0.030 4							
3819.7 7	0.096 6	3819.85	2 ⁺	0.0	0 ⁺	E2		Mult.: $A_2=+0.31$ 6, $A_4=-0.08$ 7; RUL.
^x 3871.6 7	0.068 5							
^x 3895.8 9	0.036 4							
3929.5 7	0.065 5	3929.9	1,2 ⁺	0.0	0 ⁺			
^x 3957.5 9	0.037 4							
4003.9 8	0.046 5	4004.0	(2 ⁺)	0.0	0 ⁺	Q		Mult.: $A_2=+0.28$ 11, $A_4=-0.11$ 14.
4106.8 9	0.038 5	4106.9	1,2 ⁺	0.0	0 ⁺			
^x 4199.1 9	0.041 5							

Continued on next page (footnotes at end of table)

$^{122}\text{Sn}(n,n'\gamma)$ **1991De38,1991Go24** (continued) $\gamma(^{122}\text{Sn})$ (continued)

E_γ [†]	I_γ [‡]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	Comments
4283.7 9	0.052 5	4283.8	(2 ⁺)	0.0	0 ⁺	Q	Mult.: $A_2=+0.31$ <i>II</i> , $A_4=-0.10$ <i>I2</i> .

[†] From [1991De38](#).

[‡] Relative to $I(1140.74\gamma)=100$, measured at $\theta=125^\circ$ to the neutron beam direction ([1991De38](#)).

[#] A_2 and A_4 , linear polarization and RUL; also from $\Delta\pi=\text{yes}$ or no.

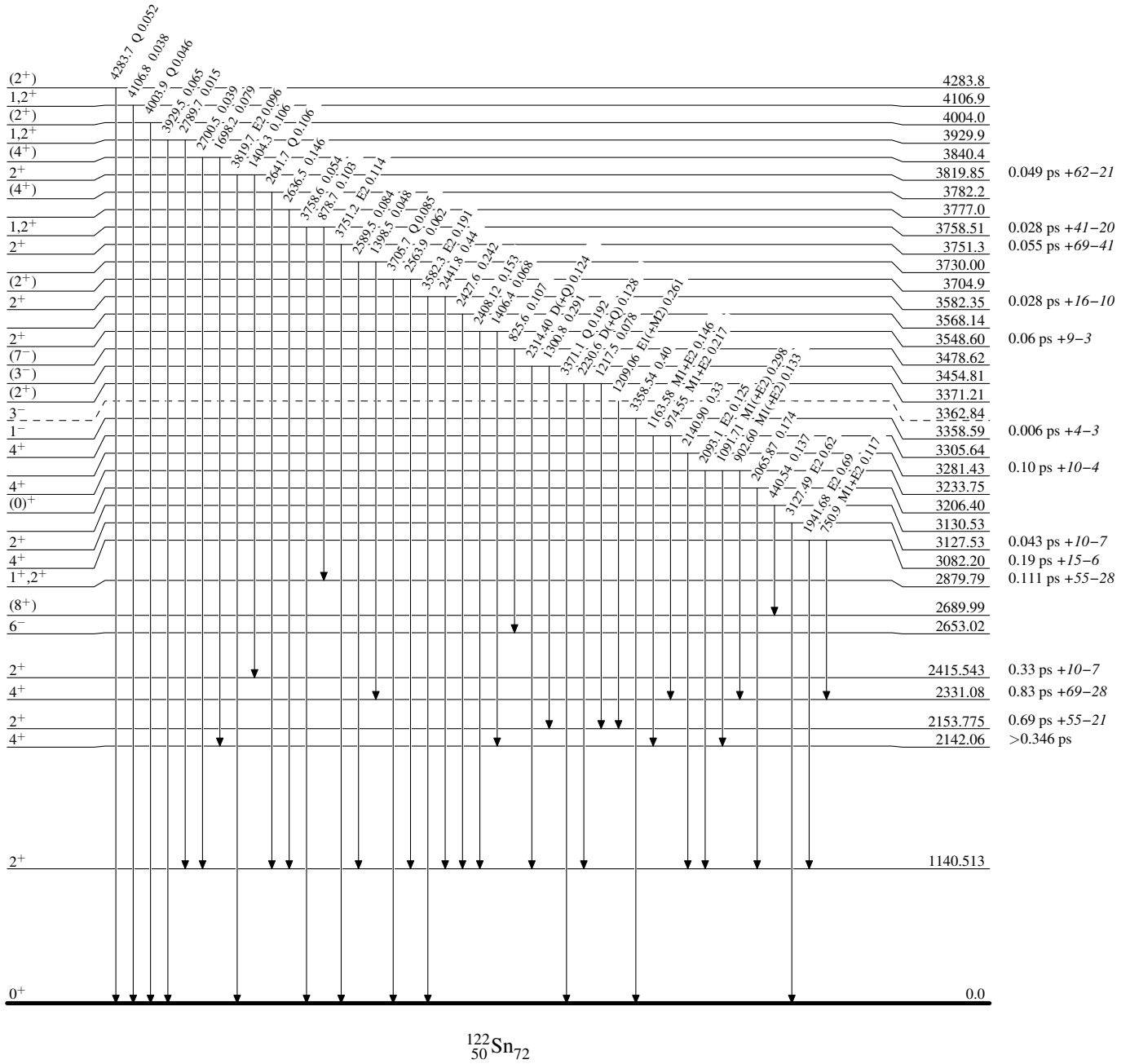
^x γ ray not placed in level scheme.

$^{122}\text{Sn}(n,n'\gamma)$ 1991De38,1991Go24

Legend

Level Scheme
Intensities: Relative I_γ

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$



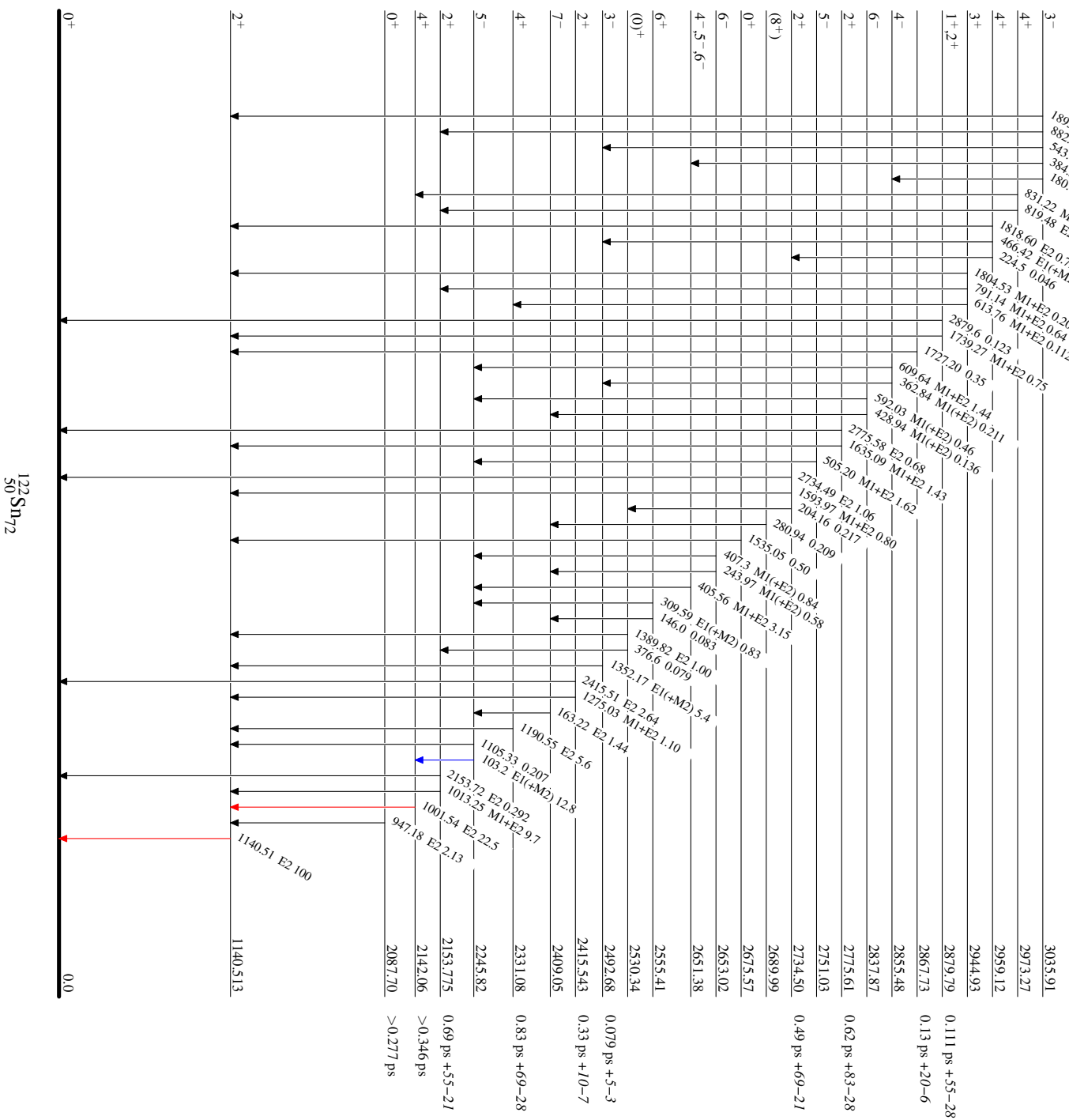
¹²²Sn(n,n' γ) **1991De38,1991Go24**

Level Scheme (continued)

Intensities: Relative I _{γ}

Legend

- $I_{\gamma} < 2\% \times I_{\gamma}^{max}$ (black arrow)
- $I_{\gamma} < 10\% \times I_{\gamma}^{max}$ (blue arrow)
- $I_{\gamma} > 10\% \times I_{\gamma}^{max}$ (red arrow)



¹²²Sn₇₂
⁵⁰Sn₇₂