

¹¹²Sn(¹²C,pnγ) 1990Xu02

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

Compiled by evaluator using Eγ's, Iγ's and DCO ratios from 1990Xu02. See also ¹⁰⁹Ag(¹⁶O,3nγ),⁹⁴Mo(³¹P,2pnγ) and ¹⁰⁷Ag(¹⁹F,p3nγ).

1986Qu01: ¹⁰⁹Ag(¹⁸O,5n) E(¹⁸O)=96 MeV; semi γ, γγ-coin, γγ(t), excitation functions.

1990Xu02: ¹¹²Sn(¹²C,pnγ) E(¹²C)=60 MeV; array of 5 Compton-suppressed Ge with BGO multiplicity filter; measured γ, γγ-coin, γ(θ), DCO ratios; proposed band structures.

¹²²Cs Levels

The band assignments and γ-ray placements proposed by 1990Xu02 contradicts with recent proposals as compiled in datasets, ¹⁰⁷Ag(¹⁹F,p3nγ) and ¹⁰⁹Ag(¹⁶O,3nγ),⁹⁴Mo(³¹P,2pnγ). Evaluator reassigned band structures (*J^π's*) to be consistent with other in-beam datasets using Eγ's, Iγ's, γ(θ)'s and DCO ratios from 1990Xu02.

E(level) [†]	J ^π [‡]	Comments
0.0		
140.8 ^{&} 30	8 ⁽⁻⁾	Additional information 1.
235.45 ^a 16	(9 ⁻)	
272.30 [@] 20	(9 ⁺)	
323.5 [#] 5	(10 ⁺)	
365.95 ^{&} 16	(10 ⁻)	
426.9 [@] 5	(11 ⁺)	
508.5 [#] 6	(12 ⁺)	
569.20 ^a 19	(11 ⁻)	
788.06 ^{&} 21	(12 ⁻)	
814.8 [@] 6	(13 ⁺)	
981.2 [#] 6	(14 ⁺)	
1072.83 ^a 23	(13 ⁻)	
1361.85 ^{&} 25	(14 ⁻)	
1373.8 [@] 6	(15 ⁺)	
1640.6 [#] 6	(16 ⁺)	
1707.9 ^a 7	(15 ⁻)	
2051.8 ^{&} 7	(16 ⁻)	
2078.0 [@] 6	(17 ⁺)	
2444.6 ^a 7	(17 ⁻)	
2454.7 [#] 6	(18 ⁺)	
2835.6 ^{&} 7	(18 ⁻)	
2910.9 [@] 6	(19 ⁺)	
3262.9 ^a 7	(19 ⁻)	
3391.7 [#] 6	(20 ⁺)	
3705.5 ^{&} 7	(20 ⁻)	
4425.7 [#] 12	(22 ⁺)	

[†] Least-squares fitting to Eγ's compiled.

[‡] From Adopted Levels.

Band(A): band 1, πh_{11/2}⊗νh_{11/2}, α=0.

$^{112}\text{Sn}(^{12}\text{C,pn}\gamma)$ **1990Xu02** (continued)

^{122}Cs Levels (continued)

@ Band(a): band 2, $\pi h_{11/2} \otimes \nu h_{11/2}$, $\alpha=1$.

& Band(B): band 3, $\pi h_{11/2} \otimes \nu d_{5/2}$, $\alpha=0$.

^a Band(b): band 4, $\pi h_{11/2} \otimes \nu d_{5/2}$, $\alpha=1$.

$\gamma(^{122}\text{Cs})$

$E_i(\text{level})$	J_i^π	E_γ^\dagger	I_γ^\ddagger	E_f	J_f^π	Mult. #	Comments
235.45	(9 ⁻)	95.2 2	100	140	8 ⁽⁻⁾	D+Q	Mult.: $A_2=-0.24$ 5, $A_4=-0.15$ 7, DCO=0.23 9.
272.30	(9 ⁺)	132.3 2	93 9	140	8 ⁽⁻⁾	D+Q	Mult.: DCO=0.32 11.
323.5	(10 ⁺)	51.2 4	7.9 11	272.30	(9 ⁺)		
365.95	(10 ⁻)	130.2 2	65 5	235.45	(9 ⁻)	D+Q	Mult.: $A_2=-0.18$ 5, $A_4=-0.10$ 7, DCO=0.43 12.
		226.2 2	4.0 3	140	8 ⁽⁻⁾		
426.9	(11 ⁺)	103.4 2	100	323.5	(10 ⁺)	D+Q	Mult.: $A_2=-0.36$ 6, $A_4=-0.01$ 7, DCO=0.26 9.
508.5	(12 ⁺)	82 1	95 9	426.9	(11 ⁺)	D+Q	Mult.: $A_2=-0.11$ 5, $A_4=-0.01$ 8, DCO=0.55 17.
569.20	(11 ⁻)	203.2 2	53.8 20	365.95	(10 ⁻)	D+Q	Mult.: $A_2=-0.60$ 7, $A_4=-0.04$ 9, DCO=0.43 10.
		333.8 2	11.4 8	235.45	(9 ⁻)		DCO=0.46 11.
788.06	(12 ⁻)	218.8 2	31.4 16	569.20	(11 ⁻)	D+Q	Mult.: DCO=0.36 22.
		422.1 2	15.5 8	365.95	(10 ⁻)	Q	Mult.: DCO=1.07 12.
814.8	(13 ⁺)	306.4 2	55.4 16	508.5	(12 ⁺)	D+Q	Mult.: $A_2=-0.44$ 5, $A_4=+0.13$ 7, DCO=0.60 15.
		387.9 2	5.5 8	426.9	(11 ⁺)	Q	Mult.: DCO=0.98 9.
981.2	(14 ⁺)	166.3 2	35.6 23	814.8	(13 ⁺)	D+Q	Mult.: $A_2=-0.59$ 7, $A_4=0.00$ 10, DCO=0.40 7.
		472.6 2	49 9	508.5	(12 ⁺)	Q	Mult.: DCO=1.19 7.
1072.83	(13 ⁻)	284.9 2	19.5 8	788.06	(12 ⁻)	D+Q	Mult.: DCO=0.70 13.
		503.7 2	14.4 5	569.20	(11 ⁻)		
1361.85	(14 ⁻)	289.2 2	12.4 4	1072.83	(13 ⁻)	D+Q	Mult.: DCO=0.42 17.
		573.6 2	14.2 6	788.06	(12 ⁻)	Q	Mult.: DCO=0.98 5.
1373.8	(15 ⁺)	392.6 2	27.9 14	981.2	(14 ⁺)	D+Q	Mult.: DCO=0.36.
		559.1 2	12.2 20	814.8	(13 ⁺)		
1640.6	(16 ⁺)	267.0 2	6.4 9	1373.8	(15 ⁺)		
		659.4 2	53.5 21	981.2	(14 ⁺)	Q	Mult.: $A_2=+0.16$ 8, $A_4=-0.17$ 10.
1707.9	(15 ⁻)	346 1	≤ 8.8 @	1361.85	(14 ⁻)	D+Q	Mult.: DCO=0.46 11 for 344.4 γ and 345.8 γ .
		635 1	11.7 10	1072.83	(13 ⁻)		
2051.8	(16 ⁻)	344 1	≤ 8.8 @	1707.9	(15 ⁻)		Mult.: DCO=0.46 11 for 344.4 γ and 345.8 γ .
		690 1	8.6 9	1361.85	(14 ⁻)		
2078.0	(17 ⁺)	437.8 2	12.5 12	1640.6	(16 ⁺)	D+Q	Mult.: DCO=0.52 8.
		704.0 2	12.0 13	1373.8	(15 ⁺)		
2444.6	(17 ⁻)	393 1	≤ 3.6 &	2051.8	(16 ⁻)		
		736.7 2	6.3 5	1707.9	(15 ⁻)		
2454.7	(18 ⁺)	377.1 2	≤ 2	2078.0	(17 ⁺)		
		813.8 2	22.4 19	1640.6	(16 ⁺)	Q	Mult.: DCO=0.81 11.
2835.6	(18 ⁻)	391 1	≤ 3.6 &	2444.6	(17 ⁻)		
		783.8 2	8.5 6	2051.8	(16 ⁻)		
2910.9	(19 ⁺)	456.2 2	5.7 11	2454.7	(18 ⁺)	D+Q	Mult.: DCO=0.57 6.
		833 1	≤ 2	2078.0	(17 ⁺)	Q	Mult.: DCO=1.51 12.
3262.9	(19 ⁻)	427.3 2	≤ 2	2835.6	(18 ⁻)		
		818.3 2	5.4 5	2444.6	(17 ⁻)		
3391.7	(20 ⁺)	481 1	≤ 2	2910.9	(19 ⁺)		
		936.9 2	7.1 9	2454.7	(18 ⁺)	Q	Mult.: DCO=0.71 11.
3705.5	(20 ⁻)	444 ^a 1	≤ 2	3262.9	(19 ⁻)		
		869.9 2	5.9 5	2835.6	(18 ⁻)		
4425.7	(22 ⁺)	1034 1	≤ 2	3391.7	(20 ⁺)		

[†] From 1990Xu02.

 $^{112}\text{Sn}(^{12}\text{C},\text{pn}\gamma)$ **1990Xu02 (continued)**

 $\gamma(^{122}\text{Cs})$ (continued)

‡ From [1990Xu02](#); Relative to the $103.4\gamma=100$ for band 1 and 2, also relative to 95.2γ for band 3 and 4, respectively.

From DCO ratios and $\gamma(\theta)$'s in [1990Xu02](#). DCO ratio ≈ 1.0 indicates stretched $\Delta J=2$ Q-transition, DCO ratio ≈ 0.5 stretched $\Delta J=1$ D+Q transition.

@ $I\gamma(344+346)=8.1$ 7.

& $I\gamma(391+393)=3.2$ 4.

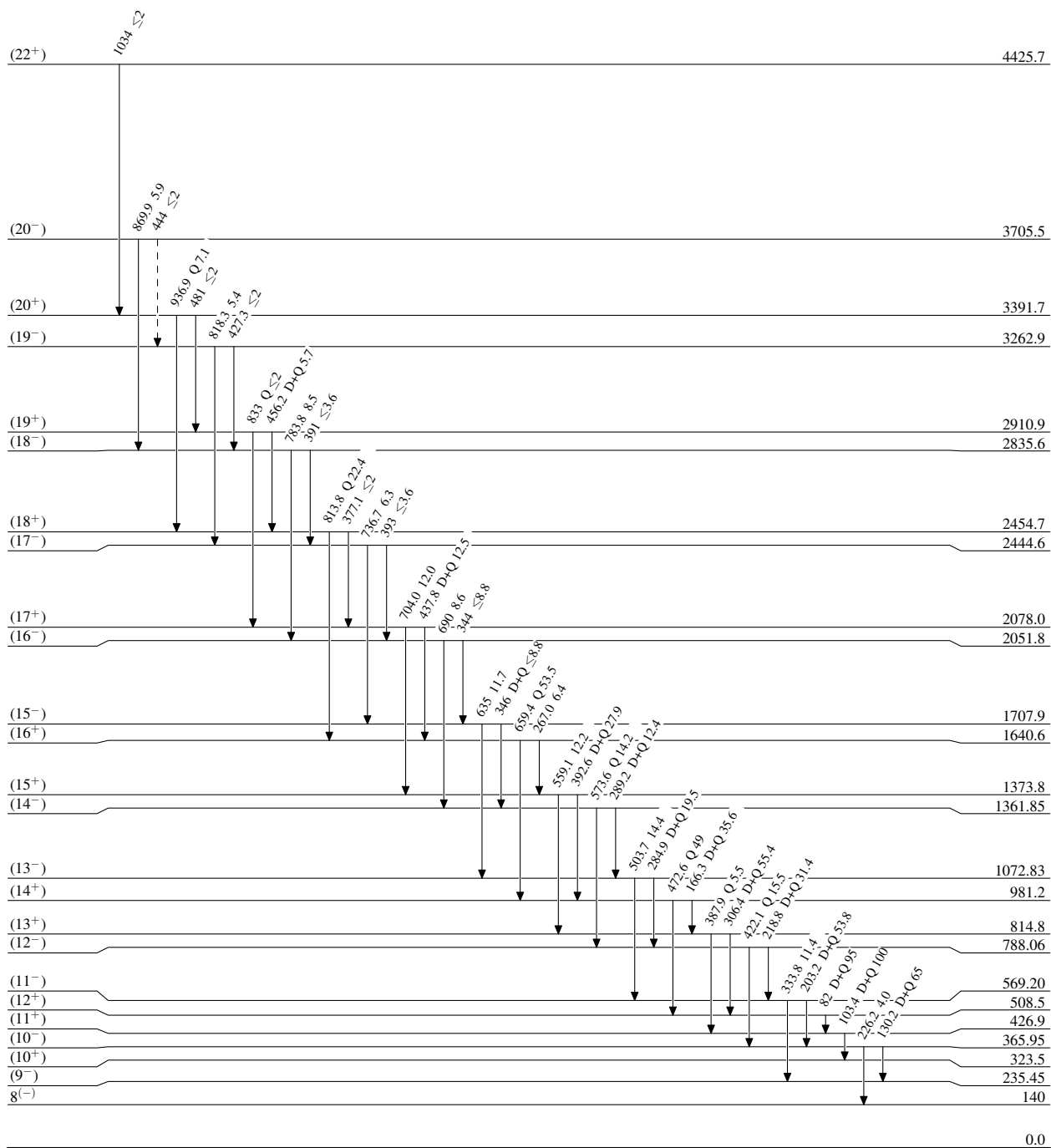
^a Placement of transition in the level scheme is uncertain.

^x γ ray not placed in level scheme.

$^{112}\text{Sn}(^{12}\text{C,pn}\gamma)$ 1990Xu02

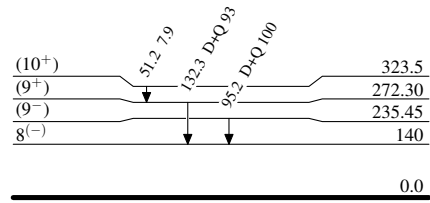
Legend

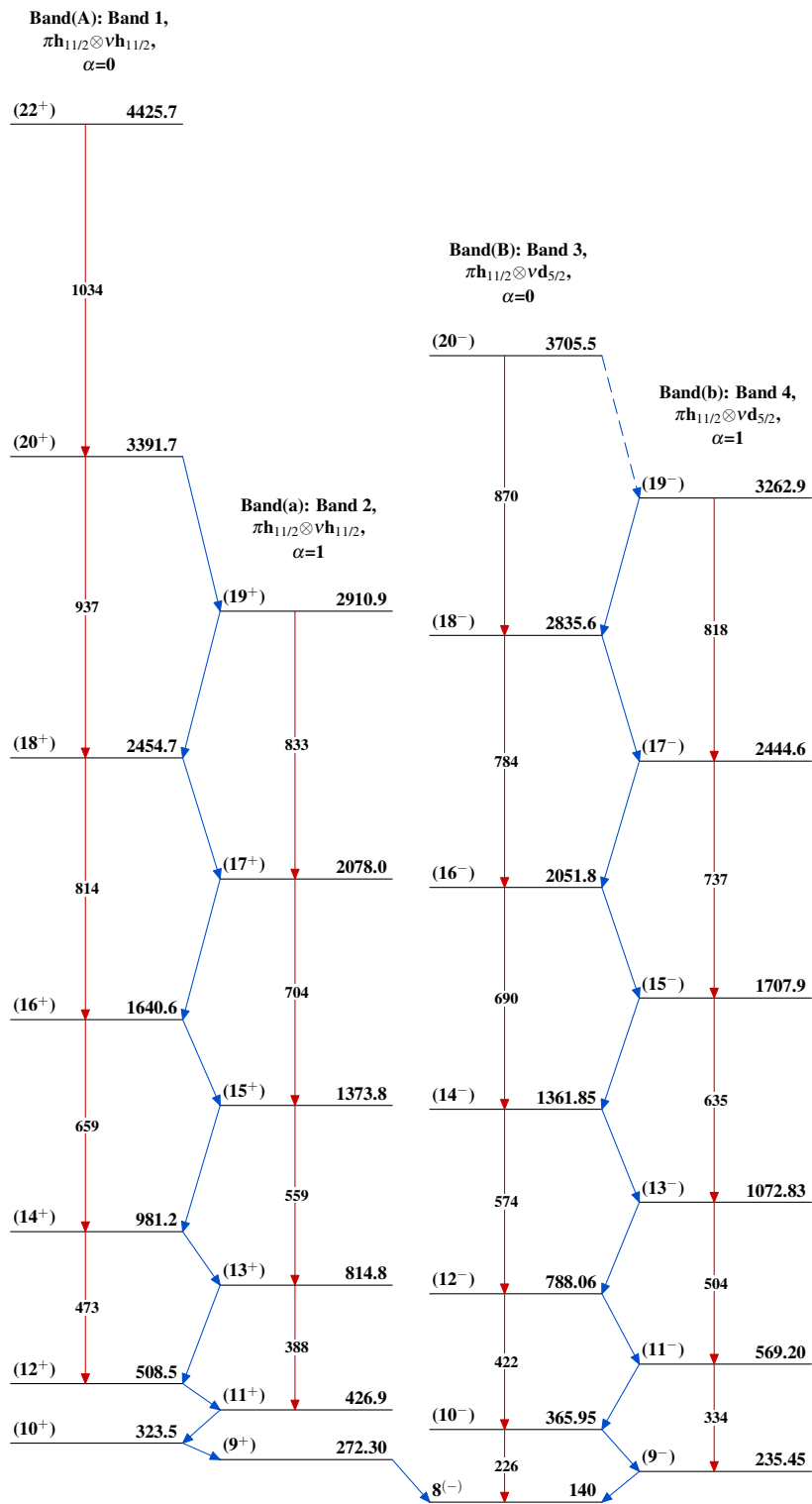
Level Scheme

Intensities: relative I(γ)-----► γ Decay (Uncertain) $^{122}_{55}\text{Cs}_{67}$

$^{112}\text{Sn}(^{12}\text{C,pn}\gamma)$ 1990Xu02

Level Scheme (continued)

Intensities: relative I(γ) $^{122}_{55}\text{Cs}_{67}$

$^{112}\text{Sn}(^{12}\text{C},\text{pn}\gamma)$ 1990Xu02 $^{122}_{55}\text{Cs}_{67}$