^{98}Mo(^{16}O,3nγ) 2005Wo03

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 110, 1239 (2009)	1-Feb-2008

E=60, 70, 75 and 80 MeV. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma(\theta)$, $\gamma(\theta)$, $\gamma\gamma$(lin pol) with the OSIRIS-ii array consisting of 10 Compton-suppressed HPGe detectors combined with a 48-elements BGO sum-energy and multiplicity filter.

^{111}Sn Levels

E(level)[†]	J$^\pi$	T$_{1/2}$	Comments
0.0[@]	7/2$^+$		
978.51[&] *10*	11/2$^-$	10.0 ns *5*	T$_{1/2}$: from ^{111}Sn in ENSDF.
1348.58[@] *15*	11/2$^+$		
2061.90[&] *14*	15/2$^-$		
2065.02[@] *22*	15/2$^+$		
2256.96[@] *25*	(17/2$^+$,19/2$^+$)[‡]	≥4 ns	Configuration=$\nu g_{7/2}$•110SN core.
2983.11[&] *16*	19/2$^-$		
3123.55[a] *16*	19/2$^-$		
3227.80 *17*	19/2$^-$		
3306.35[b] *16*	19/2$^-$		
3322.49[a] *16*	21/2$^-$		
3459.01 *19*	23/2$^-$		
3619.90[a] *17*	23/2$^-$		
3787.61[a] *19*	25/2$^-$		
3954.98[&] *18*	(23/2)[#]		
4073.99[b] *16*	23/2$^-$		
4154.7[a] *3*	25/2$^-$		
4445.8[a] *3*	25/2$^-$		
4838.78[a] *21*	27/2$^-$		
4876.78[b] *18*	27/2$^-$		
4988.33[&] *21*	(27/2)[#]		
5746.09[b] *20*	31/2$^-$		
5766.57[a] *23*	(29/2,31/2)[‡]		
6131.0[&] *3*	(31/2)[#]		
6688.5[b] *8*	35/2$^-$		
6842.62[a] *23*	(31/2,33/2)[‡]		
7683.8[b] *12*	(39/2$^-$)		
8738.4[b] *12*	(43/2$^-$)		
9860.2[b] *12*	(47/2$^-$)		
11081.5[b] *13*	(51/2$^-$)		

[†] From least-squares fit to Eγ's (by compilers).
[‡] From figure 8 of 2005Wo03.
[#] If parity is positive, it may be a member of the $h^2_{11/2}g_{7/2}$ multiplet.
[@] Band(A): γ cascade to g.s..
[&] Band(B): 11/2$^-$ band.
[a] Band(C): γ-ray cascade based on 19/2$^-$.
[b] Band(D): Band based on 19/2$^-$. Configuration=$\nu h_{11/2}\otimes[(\pi g_{7/2})^2(\pi g_{9/2})^{-2}]$ or $\nu h_{11/2}\otimes[\pi(g_{7/2}d_{5/2})(g_{9/2})^{-2}]$ (both from literature).

^{98}Mo(^{16}O,3nγ) 2005Wo03 (continued)

γ(^{111}Sn)

Angular distribution data were normalized to transitions with isotropic angular distributions of γ rays from radioactive nuclides.

E_γ	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.[†]	Comments
191.9 2	1.6 2	2256.96	(17/2+,19/2+)	2065.02	15/2+		E_γ: contaminated by an impurity. Mult.: expected as hindered E2 if it is analogous to 280 transition in ^{110}Sn from 6+ to 4+.
198.7 1	6.2 3	3322.49	21/2−	3123.55	19/2−		DCO=0.51 13
297.4 1	2.2 2	3619.90	23/2−	3322.49	21/2−		DCO=2.3 6
313.5 3	0.1 2	3619.90	23/2−	3306.35	19/2−		
339.6 1	6.5 4	3322.49	21/2−	2983.11	19/2−		DCO=1.00 17
364.8 9	0.6 3	6131.0	(31/2)	5766.57	(29/2,31/2)		
367.1 2	2.0 2	4154.7	25/2−	3787.61	25/2−		DCO=0.86 19
370.0 2	≤0.3	1348.58	11/2+	978.51	11/2−		J^π(initial)=11/2− for this transition in table 4 of 2005Wo03 seems a misprint.
465.1 1	5.5 4	3787.61	25/2−	3322.49	21/2−		DCO=1.01 22
475.9 1	5.7 6	3459.01	23/2−	2983.11	19/2−		DCO=0.9 3
636.7 1	5.0 5	3619.90	23/2−	2983.11	19/2−		
716.4 2	5.0 9	2065.02	15/2+	1348.58	11/2+	E2	
726.0 6	0.4 2	2983.11	19/2−	2256.96	(17/2+,19/2+)		
751.6 7	1.0 3	4073.99	23/2−	3322.49	21/2−		
767.9 1	13 1	4073.99	23/2−	3306.35	19/2−	E2	DCO=0.62 25
802.9 1	27 1	4876.78	27/2−	4073.99	23/2−		DCO=0.85 12
845.8 2	5.1 5	4073.99	23/2−	3227.80	19/2−		
866.5 4	1.2 2	3123.55	19/2−	2256.96	(17/2+,19/2+)		
869.4 1	21 1	5746.09	31/2−	4876.78	27/2−	E2	DCO=1.08 21
889.8 2	3.4 4	5766.57	(29/2,31/2)	4876.78	27/2−		
907.1 2	4.5 3	5746.09	31/2−	4838.78	27/2−	E2	
914.6 2	5.2 6	4988.33	(27/2)	4073.99	23/2−		
921.2 1	40 2	2983.11	19/2−	2061.90	15/2−		DCO=1.54 25
927.4 3	2.7 3	5766.57	(29/2,31/2)	4838.78	27/2−		
942.4 7	20 1	6688.5	35/2−	5746.09	31/2−		DCO=0.75 17
950.8 2	6.2 5	4073.99	23/2−	3123.55	19/2−		
971.8 1	8.3 8	3954.98	(23/2)	2983.11	19/2−		
978.5 1	100 8	978.51	11/2−	0.0	7/2+		DCO=1.04 10
995.3 9	12 7	7683.8	(39/2−)	6688.5	35/2−		
1033.1 2	5.6 6	4988.33	(27/2)	3954.98	(23/2)		
1054.6 1	7.4 5	8738.4	(43/2−)	7683.8	(39/2−)		
1061.5 1	21 1	3123.55	19/2−	2061.90	15/2−	D+Q	DCO=1.0 3 Mult.: as suggested in figure 7 of 2005Wo03.
1076.0 1	7.7 6	6842.62	(31/2,33/2)	5766.57	(29/2,31/2)		
1083.4 1	91 4	2061.90	15/2−	978.51	11/2−		DCO=0.71 23
1088.6 5	1.5 3	4876.78	27/2−	3787.61	25/2−		
1090.8 1	12 1	4073.99	23/2−	2983.11	19/2−		
1096.7 2	6.1 7	6842.62	(31/2,33/2)	5746.09	31/2−		
1121.8 2	3.2 3	9860.2	(47/2−)	8738.4	(43/2−)		
1123.3 2	3.6 4	4445.8	25/2−	3322.49	21/2−		DCO=1.9 8
1142.7 5	2.0 5	6131.0	(31/2)	4988.33	(27/2)		
1165.8 1	8 1	3227.80	19/2−	2061.90	15/2−		
1218.5 2	6.0 6	4838.78	27/2−	3619.90	23/2−		
1221.3 3	2.1 3	11081.5	(51/2−)	9860.2	(47/2−)		
1244.7 1	18 1	3306.35	19/2−	2061.90	15/2−		DCO=0.7 3
1254.1 3	3.3 5	6131.0	(31/2)	4876.78	27/2−		
1348.6 2	23 9	1348.58	11/2+	0.0	7/2+	E2	

Continued on next page (footnotes at end of table)

^{98}Mo(^{16}O,3nγ) 2005Wo03 (continued)

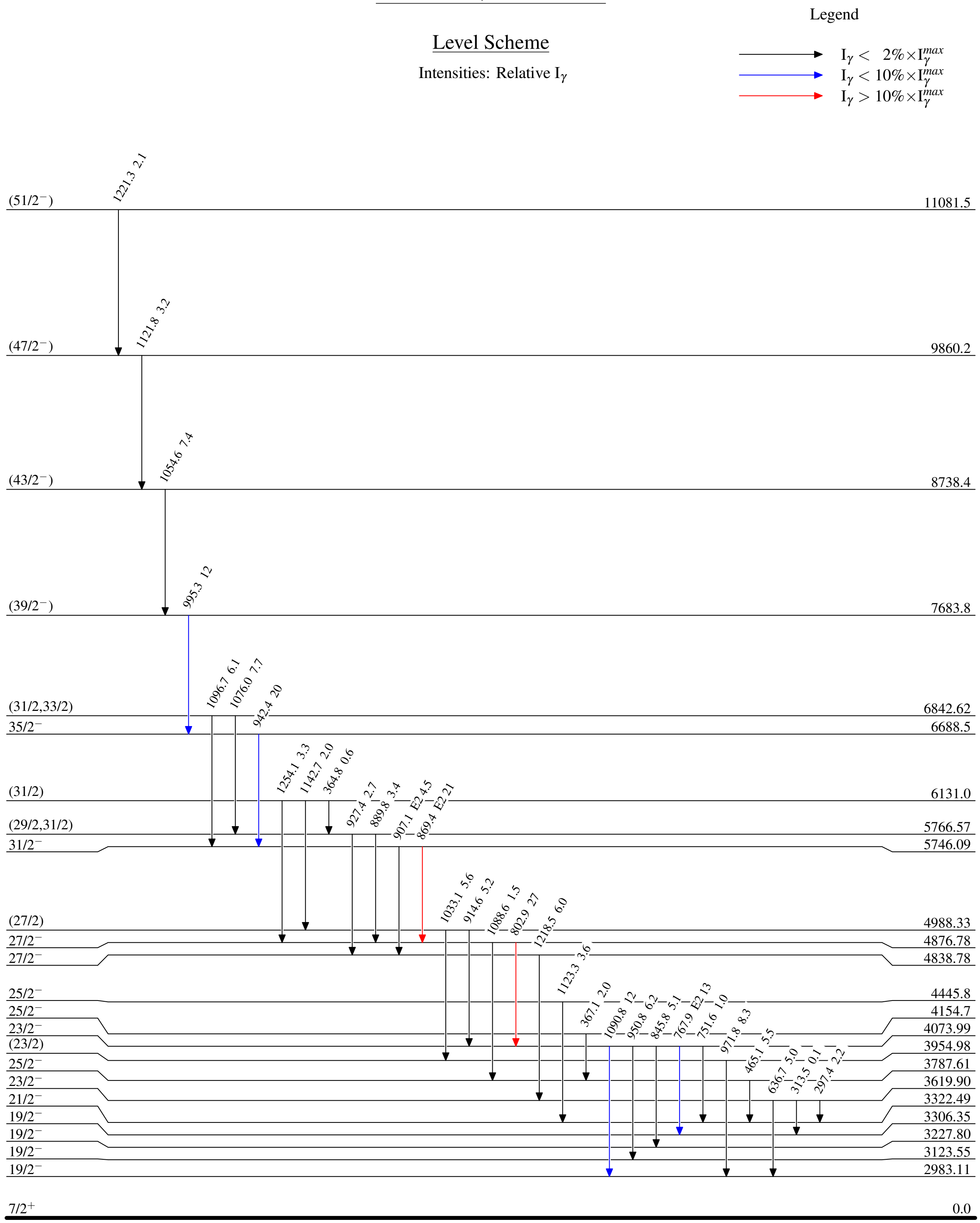
γ(^{111}Sn) (continued)

† Derived from R_{DCO} ratios defined as $R_{DCO}=I_\gamma(E_\gamma;\ 38°+25°)/I_\gamma(E_\gamma;\ 90°+87°)$; R_{DCO} is around 0.6 for ΔJ=1 dipole transitions and about 1.0 for stretched ΔJ=2 quadrupole or ΔI=0, dipole transitions.

$^{98}Mo(^{16}O,3n\gamma)$ 2005Wo03

Level Scheme

Intensities: Relative I_γ

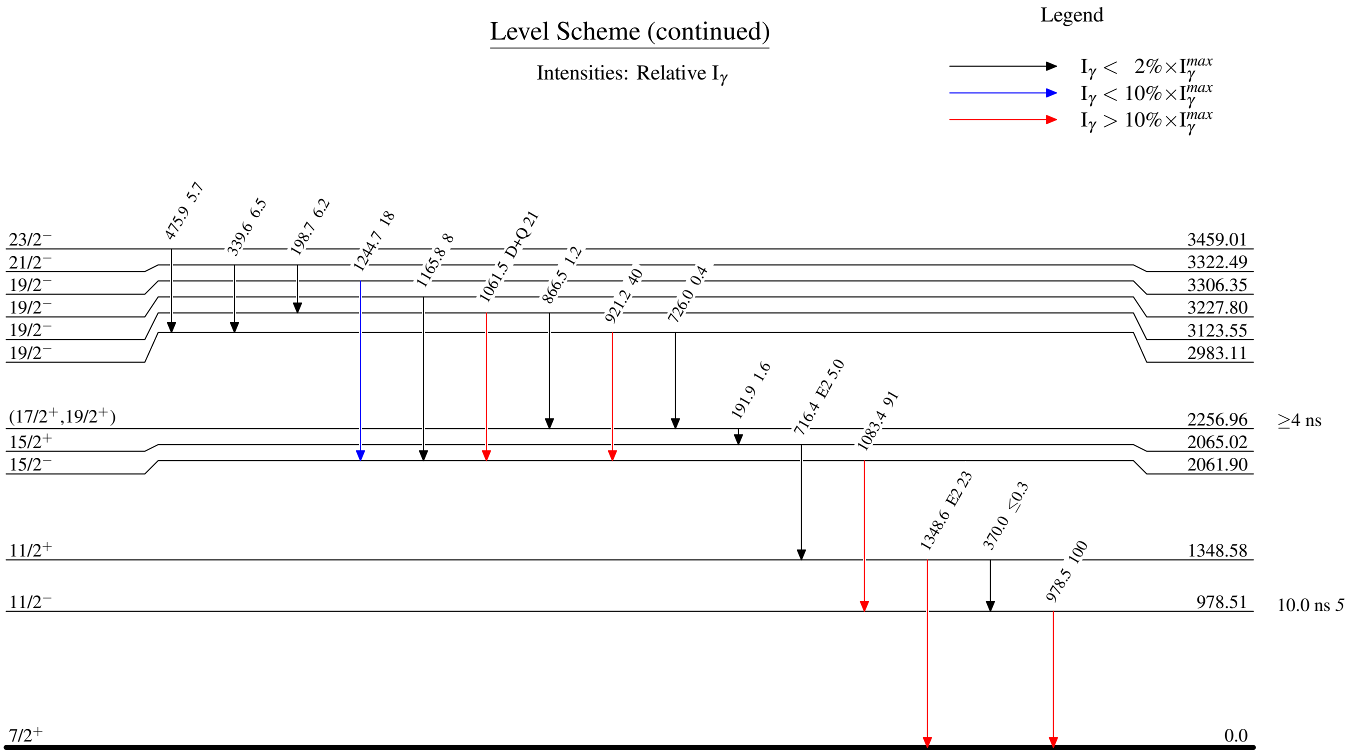


$^{111}_{50}Sn_{61}$

^{98}Mo(^{16}O,3nγ) 2005Wo03

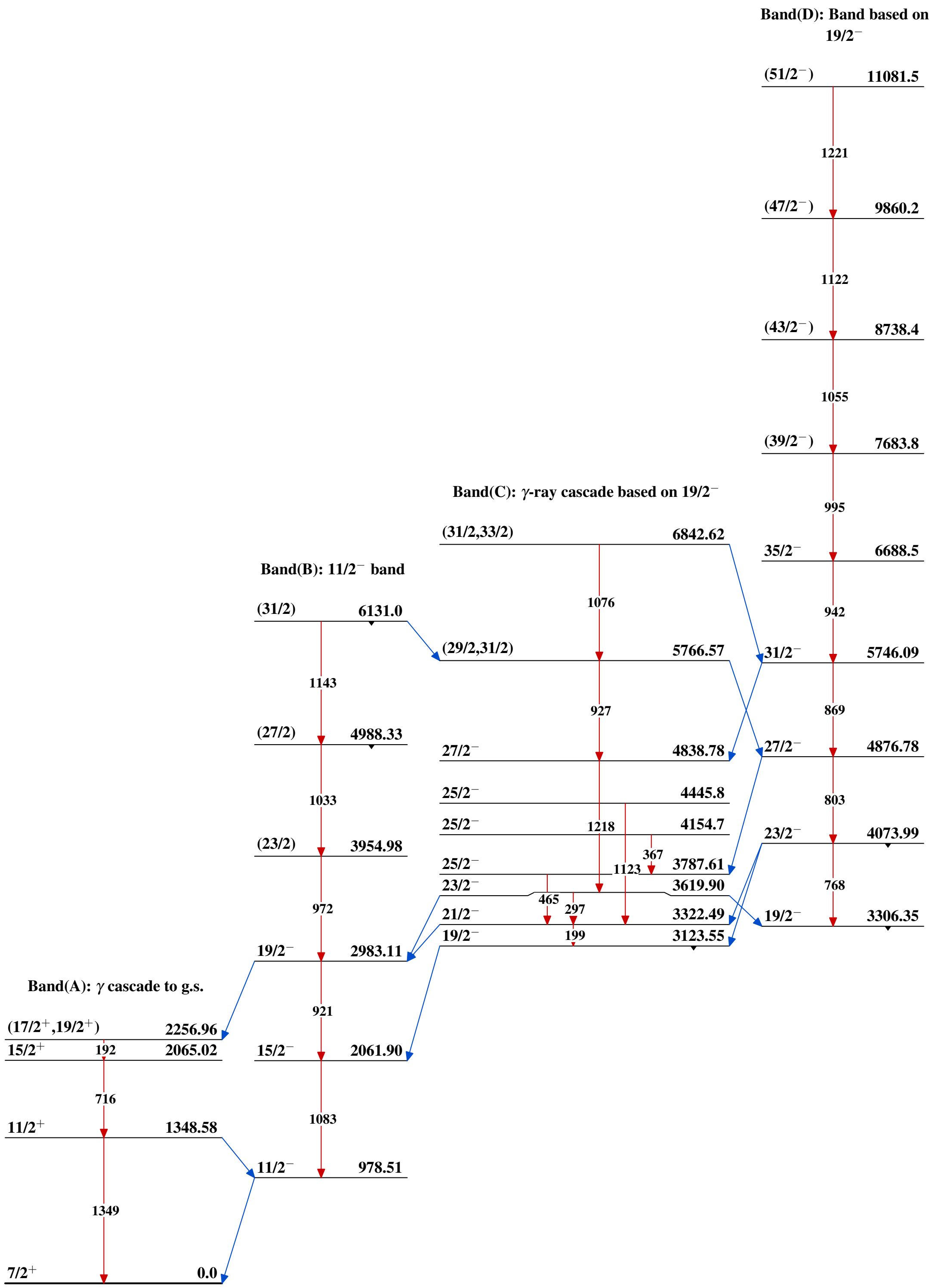
Level Scheme (continued)

Intensities: Relative I_γ



$^{111}_{50}Sn_{61}$

$^{98}Mo(^{16}O,3n\gamma)$ 2005Wo03



$^{111}_{50}Sn_{61}$