

$^{82}\text{Se}(^{18}\text{O},5n\gamma)$ 2004Ch18

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, G. Mukherjee, A. A. Sonzogni		NDS 111, 2555 (2010)	30-Jun-2009

2004Ch18: $^{82}\text{Se}(^{18}\text{O},5n\gamma)$, E=60 MeV. Measured $E\gamma$, $I\gamma$, $\gamma\gamma$, $\gamma\gamma(\theta)$ (DCO) using an array of 10 Compton-suppressed high-purity HPGe γ -x type of detectors.

 ^{95}Mo Levels

2004Ch18 discuss level structure in terms of core+particle calculations and give detailed configurations for several levels in each of the two sequences (see table iii of 2004Ch18).

E(level) [†]	J ^π [‡]	Comments
0.0 [#]	5/2 ⁺	
765.92 [@] 8	7/2 ⁺	
947.79 [#] 8	9/2 ⁺	
1540.85 [#] 10	11/2 ⁺	
1551.37 [@] 12	11/2 ⁺	
1937.23 [@] 13	13/2 ⁺	
2058.50 11	13/2 ⁺	
2232.26 [#] 12	15/2 ⁺	
2580.11 [#] 14	17/2 ⁺	
2610.83 [@] 19	15/2 ⁺	
2617.86 15	17/2 ⁺	
2769.9 [#] 4	19/2 ⁺	
3381.53 [@] 21	17/2 ⁺	Level not adopted on the basis of relative intensity values of 770.7 keV and 666.0 keV γ rays; placed in reverse order by $^{16}\text{O}(^{82}\text{Se},3n\gamma)$.
3672.4 [#] 4	23/2 ⁺	
3874.7 4	25/2 ⁺	
4047.53 [@] 23	21/2 ⁺	Level adopted following $^{16}\text{O}(^{82}\text{Se},3n\gamma)$; however, it decays by 770.7 keV γ ray instead of 666.0 keV γ ray.
4139.8 4	27/2 ⁺	
4851.9 5		
4953.3 4		
5117.3 [#] 4	25/2 ⁺	
5362.1 5	29/2 ⁺	
5451.4 7		
5760.7 [#] 4	27/2 ⁺	
6708.9 [#] 6	29/2 ⁺	
7451.7 [#] 6		

[†] From least-squares fit to $E\gamma$'s (by compilers).

[‡] From γ - ray multiplicities.

[#] Band(A): γ sequence based on g.s..

[@] Band(B): γ sequence based on 7/2⁺.

$^{82}\text{Se}(^{18}\text{O},5n\gamma)$ **2004Ch18** (continued) $\gamma(^{95}\text{Mo})$ DCO ratios are for 144° and 98°; gates are set on $\Delta J=2$, Q transitions.

E_γ	I_γ	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. #	δ^\dagger	Comments
151.9 5	132.4 9	2769.9	19/2 ⁺	2617.86	17/2 ⁺	M1		DCO=0.52 4
173.8 1	13.4 4	2232.26	15/2 ⁺	2058.50	13/2 ⁺	M1		DCO=0.48 8
202.3 1	12.8 19	3874.7	25/2 ⁺	3672.4	23/2 ⁺	M1		DCO=0.43 9
347.9 1	143.5 6	2580.11	17/2 ⁺	2232.26	15/2 ⁺	M1+E2	+0.4 1	DCO=0.61 3
385.6 1	1.1 1	2617.86	17/2 ⁺	2232.26	15/2 ⁺	M1		DCO=0.52 9
385.8 1	1.6 1	1937.23	13/2 ⁺	1551.37	11/2 ⁺	M1		
396.4 2	0.17 [‡] 2	1937.23	13/2 ⁺	1540.85	11/2 ⁺			
467.4 2	31.2 10	4139.8	27/2 ⁺	3672.4	23/2 ⁺	E2		DCO=0.93 18
521.4 2	11.4 12	2580.11	17/2 ⁺	2058.50	13/2 ⁺			
552.3 2	3.5 [‡] 5	2610.83	15/2 ⁺	2058.50	13/2 ⁺			
593.1 1	178 6	1540.85	11/2 ⁺	947.79	9/2 ⁺	M1		DCO=0.52 3
603.5 1	31.3 20	1551.37	11/2 ⁺	947.79	9/2 ⁺	M1+E2	+0.07 1	DCO=0.57 7
643.4 1	22.4 16	5760.7	27/2 ⁺	5117.3	25/2 ⁺	M1+E2	+0.13 1	DCO=1.37 11
666.0 1	5.9 6	4047.53	21/2 ⁺	3381.53	17/2 ⁺	E2		DCO=0.91 12
673.7 3	22.1 11	2610.83	15/2 ⁺	1937.23	13/2 ⁺	M1+E2	+0.22 1	DCO=1.29 16
691.4 1	172 6	2232.26	15/2 ⁺	1540.85	11/2 ⁺	E2		DCO=0.83 5
742.8 2	7.7 [‡] 8	7451.7		6708.9	29/2 ⁺			
765.9 1	85.8 1	765.92	7/2 ⁺	0.0	5/2 ⁺	M1		DCO=0.53 7
770.7 1	11.7 3	3381.53	17/2 ⁺	2610.83	15/2 ⁺	M1+E2	+0.06 1	DCO=1.6 2
								From relative intensity, 770.7 keV γ ray is placed above 666.0 keV γ ray by $^{16}\text{O}(^{82}\text{Se},3n\gamma)$.
774.9 1	85.2 7	1540.85	11/2 ⁺	765.92	7/2 ⁺	E2		DCO=1.13 10
785.6 4	6.6 8	1551.37	11/2 ⁺	765.92	7/2 ⁺	E2		
902.5 1	100	3672.4	23/2 ⁺	2769.9	19/2 ⁺	E2		DCO=0.96 13
947.8 1	189.8 19	947.79	9/2 ⁺	0.0	5/2 ⁺	E2		DCO=0.88 7
948.2 4	6.9 10	6708.9	29/2 ⁺	5760.7	27/2 ⁺	M1+E2		DCO=0.78 14
977.2 2	9.3 15	4851.9		3874.7	25/2 ⁺			
990.1 3	3.4 [‡] 12	1937.23	13/2 ⁺	947.79	9/2 ⁺			
1069.9 5	7.6 [‡] 15	5117.3	25/2 ⁺	4047.53	21/2 ⁺			
1078.6 1	3.5 8	4953.3		3874.7	25/2 ⁺			
1110.7 1	21.7 6	2058.50	13/2 ⁺	947.79	9/2 ⁺	E2		Mult.: γ transition from 13/2 ⁺ to 9/2 ⁺ .
1222.3 2	20.3 19	5362.1	29/2 ⁺	4139.8	27/2 ⁺	E2		DCO=0.93 8
1311.6 5	6.6 7	5451.4		4139.8	27/2 ⁺			
1444.9 2	9.6 15	5117.3	25/2 ⁺	3672.4	23/2 ⁺	M1		DCO=0.48 8

[†] Sign convention for mixing ratio unspecified by 2004Ch18.[‡] Estimated from $\gamma\gamma$ coin spectra.

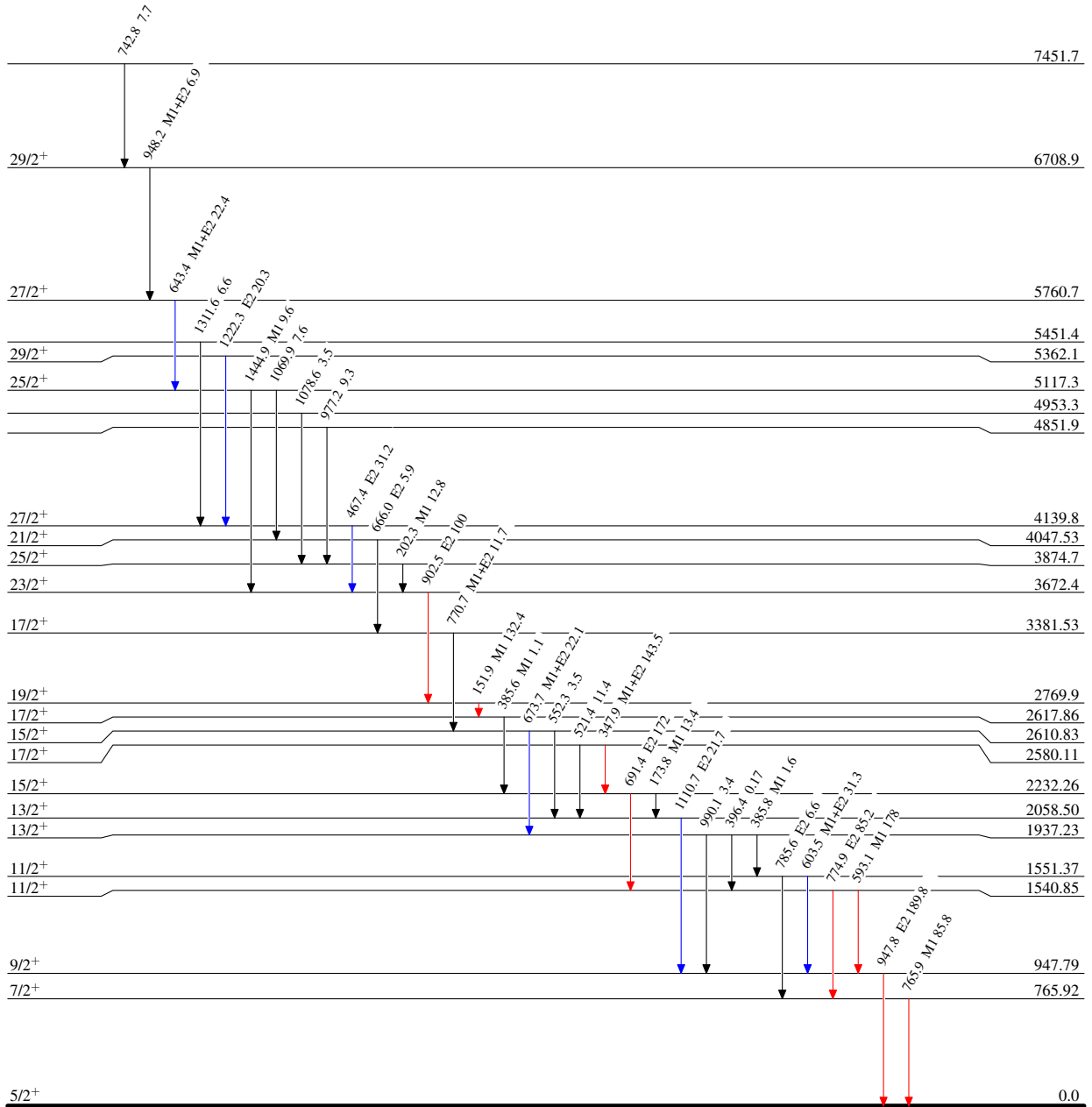
From measured DCO ratios unless mentioned otherwise.

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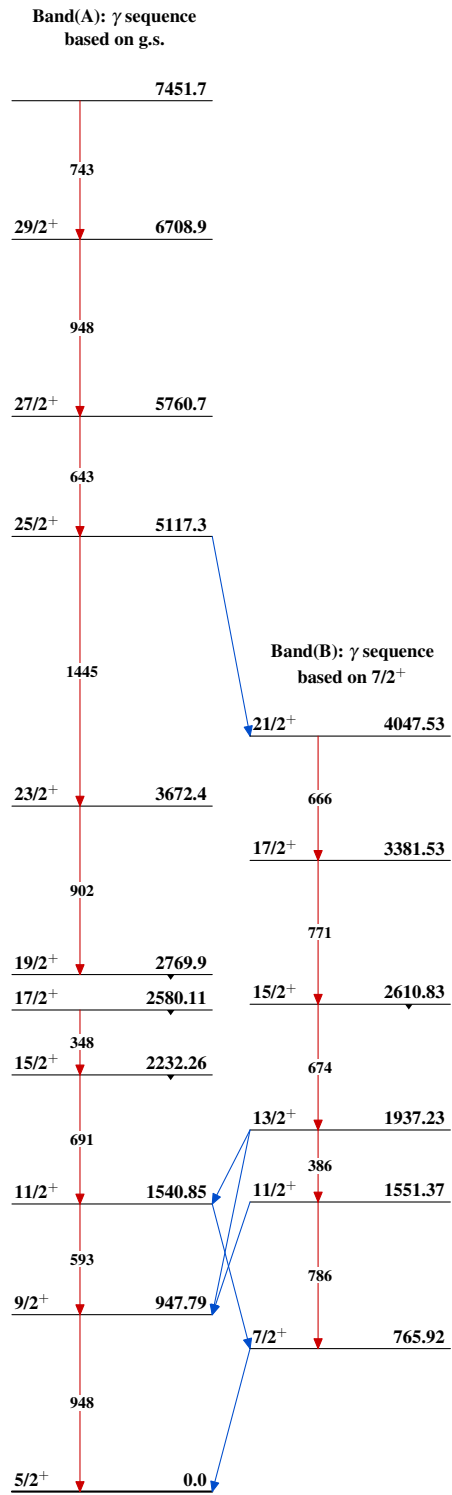
Level Scheme
Intensities: Relative I_γ

Legend

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



$^{95}_{42}\text{Mo}_{53}$

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