^{208}Pb(^{18}O,Xγ) 2009Po04

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	M. Shamsuzzoha Basunia	NDS 199,271 (2025)	1-Sep-2024

Adapted/Edited the XUNDL dataset compiled by B. Singh (McMaster): Feb 20, 2009.

E=85 MeV beam provided by the Vivitron accelerator at Strasbourg. Measured Eγ, Iγ, γγ, γγ(θ) using Euroball IV array spectrometer of 15 Cluster Ge detectors, 26 Clovers and 30 tapered single-crystals, Cluster detector consists of seven closely packed large volume Ge crystals and each Clover detector consists of four smaller Ge crystals. Comparisons with shell-model calculations.

^{81}Se Levels

E(level)[†]	Jπ[‡]	$T_{1/2}$[#]	Comments
0.0	1/2−[#]	18.5 min *1*	
103.01[@] *6*	7/2+[#]	57.28 min *2*	%IT=99.913 %IT from adopted dataset.
293.6[@] *2*	9/2+		
1058.4[@] *4*	(11/2+)		
1372.5[@] *3*	(13/2+)		
2690.7[@] *4*	(15/2+,17/2+)		
2831.6 *5*	(17/2−)		Jπ: negative parity assigned by the authors based on non-observation of a transition to (13/2+) state at 1372.
3800.5 *6*			

[†] From Eγ's.
[‡] Based on the assumption (by authors) that in yrast decays spin values increase with excitation energy. Other assumptions/observations (γ transition multipolarity) are listed in footnote, as mentioned in the text.
[#] From Adopted Levels.
[@] Band(A): Yrast sequence.

γ(^{81}Se)

Eγ	Iγ	Ei(level)	J_i^π	Ef	J_f^π	Comments
102.968 *10*		103.01	7/2+	0.0	1/2−	Eγ: from Adopted Gammas.
140.9 *2*	26 *7*	2831.6	(17/2−)	2690.7	(15/2+,17/2+)	
190.6 *2*	100 *10*	293.6	9/2+	103.01	7/2+	
313.9[†] *3*	26 *5*	1372.5	(13/2+)	1058.4	(11/2+)	
764.7[†] *3*	30 *5*	1058.4	(11/2+)	293.6	9/2+	
968.9 *4*	11 *3*	3800.5		2831.6	(17/2−)	
1078.9 *2*	70 *7*	1372.5	(13/2+)	293.6	9/2+	
1318.2 *3*	38 *5*	2690.7	(15/2+,17/2+)	1372.5	(13/2+)	

[†] Assumed to be of M1 (dipole) transition (by authors), based on the 1079γ crossover transition.

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Level Scheme

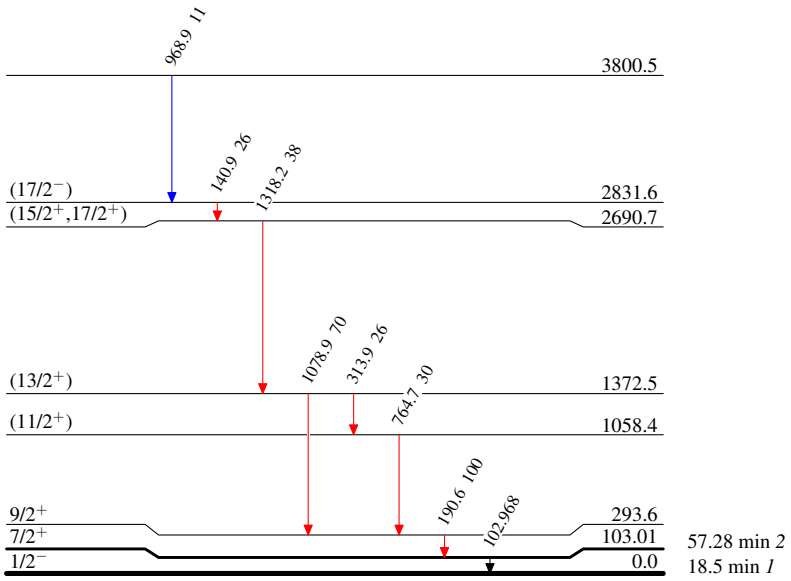
Intensities: Relative I_γ

Legend

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

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

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



$^{81}_{34}Se_{47}$

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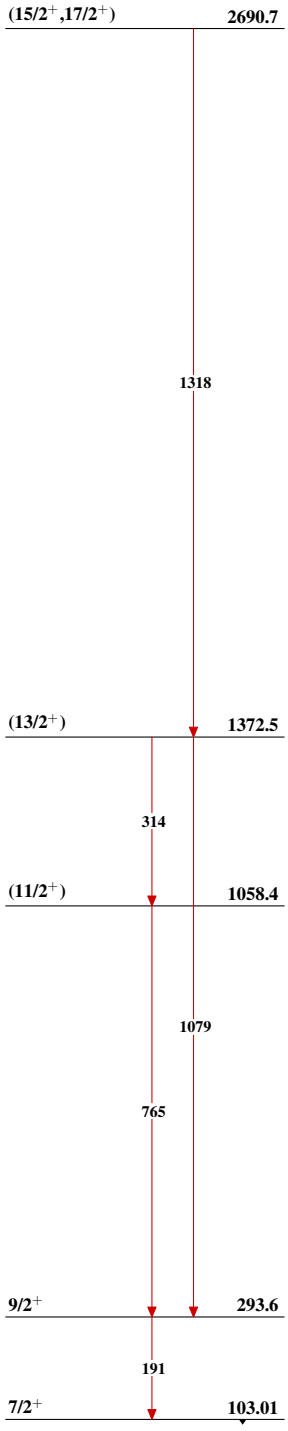
Band(A): Yrast sequence



$^{81}_{34}Se_{47}$