

${}^{74}\text{Ge}({}^{18}\text{O,np}\gamma), {}^{76}\text{Ge}({}^{18}\text{O,3np}\gamma)$ 1986Wa25

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	S. K. Basu, E. A. Mccutchan		NDS 165, 1 (2020)	1-Mar-2020

1986Wa25: E=40-80 MeV. Measured E_γ , $I_\gamma(\theta)$, $I_\gamma(E({}^{18}\text{O}))$, linear polarization, $\gamma\gamma$ coin, recoil-distance, DSA. Enriched targets.

 ${}^{90}\text{Y}$ Levels

1986Wa25 state that the order of the 239 γ and 642 γ may be reversed, so the level shown at 2455.26 could perhaps be at 2859.05.

In subsequent experimental work by 2002Ra13 in ${}^{82}\text{Se}({}^{11}\text{B,3n}\gamma)$ the reversed order is confirmed. The evaluators adopt the order of 2002Ra13 in the Adopted Levels, Gammas, however, preserve the ordering proposed by 1986Wa25 in this dataset.

All γ 's from and above the 2217 level have apparent lifetimes in the range 29-44 ps. It is not known which level lifetime is reflected by these results.

E(level) [†]	J^π [‡]	$T_{1/2}$	Comments
0	2 ⁻ #		
202.554 20	3 ⁻ #		
682.11 4	7 ⁺ #	3.19 h 6	$T_{1/2}$: from the Adopted Levels.
2216.76 5	8 ⁺		
2455.26? 6	(9) ⁺		
3097.55 12	(10) ⁺		
4212.73 13	(11) ⁺		
4518.84 15	(12) ⁺		

[†] From a least-squares fit to E_γ , by evaluators.

[‡] From $I_\gamma(\theta)$ and linear polarization, assuming $J(\text{initial}) \geq J(\text{final})$ and using empirically determined alignment and recommended upper limits on transition strengths, except where noted.

From the Adopted Levels.

 $\gamma({}^{90}\text{Y})$

E_γ	I_γ [†]	$E_i(\text{level})$	J_i^π	E_f	J_f^π	Mult. [#]	δ [#]
202.554 20	[‡]	202.554	3 ⁻	0	2 ⁻		
238.50 [@] 3	230 7	2455.26?	(9) ⁺	2216.76	8 ⁺	M1(+E2)	+0.03 8
306.10 10	44 3	4518.84	(12) ⁺	4212.73	(11) ⁺	M1(+E2)	-0.03 6
479.55 3	[‡]	682.11	7 ⁺	202.554	3 ⁻		
642.29 [@] 10	210 30	3097.55	(10) ⁺	2455.26?	(9) ⁺	(M1+E2)	
1115.17 5	133 8	4212.73	(11) ⁺	3097.55	(10) ⁺	M1(+E2)	+0.00 5
1421.30 20	65 6	4518.84	(12) ⁺	3097.55	(10) ⁺	(E2)	
1534.64 4	260 8	2216.76	8 ⁺	682.11	7 ⁺	M1+E2	-0.73 14

[†] Relative photon intensities from $\gamma(\theta)$.

[‡] Intensity time dependent following 3.19-h isomer.

From $I_\gamma(\theta)$ and linear polarization data.

@ Placement of transition in the level scheme is uncertain.

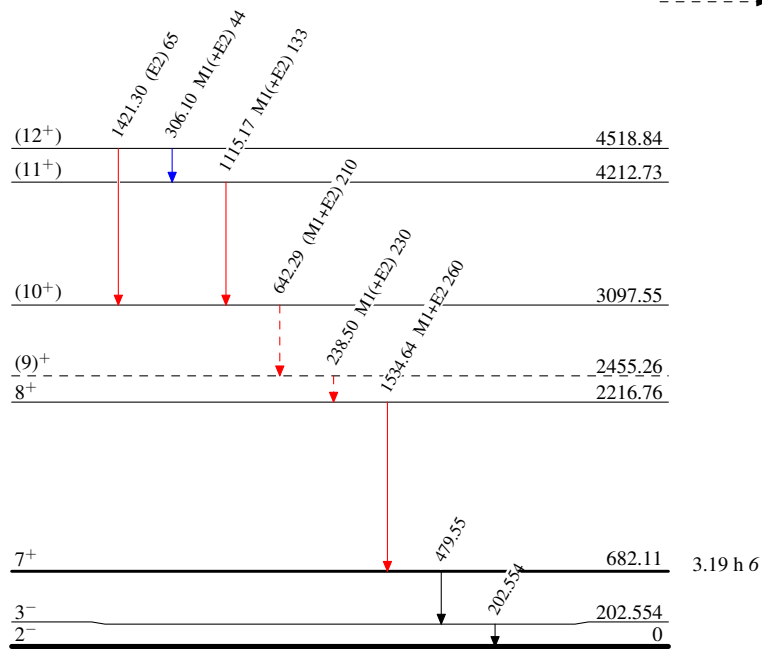
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Legend

Level Scheme

Intensities: Relative I_γ

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- - - - → γ Decay (Uncertain)

 ${}^{90}_{39}\text{Y}_{51}$