^{89}Y(α,3nγ),^{90}Zr(^{3}He,p2nγ) 1981Fi02

History

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

1981Fi02: E(α)=35 MeV. E(^{3}He)=33-43 MeV. Measured $\gamma(\theta)$, nγ, $\gamma\gamma$ and delayed $\gamma\gamma$ coin, excitation function (1981Fi02).

^{90}Nb Levels

E(level)[†]	J$^{\pi}$[‡]	$T_{1/2}$	Comments
0	8^+		
122.6 *1*	6^+		
124.9 *5*	4^-	18.81 s *6*	$T_{1/2}$: from the Adopted Levels.
171.1 *1*	7^+	<1 μs	$T_{1/2}$: from absence of delayed γ (1981Fi02).
285.5 *2*	5^+		
328.0 *6*	4^+		
362.6 *5*	5^-		
651.0 *6*	3^+		
812.9 *1*	9^+		
854.0 *12*	2^+		
1809.1 *2*	9^-		
1880.2 *2*	11^-	0.44 μs *2*	$T_{1/2}$: from delayed $\gamma\gamma$ coin (1981Fi02).
1985.6 *3*	10^+		
2487.3 *3*	(12^-)		
3071.8 *6*			

[†] From a least-squares fit to Eγ, by evaluators.
[‡] As given by 1981Fi02 from $\gamma(\theta)$, lifetimes and previous work.

$\gamma(^{90}Nb)$

E$_\gamma$	I$_\gamma$[†]	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.[‡]	Comments
(2.3 *4*)		124.9	4^-	122.6	6^+		E$_\gamma$: from the Adopted Levels.
42.5 *5*	0.7 *4*	328.0	4^+	285.5	5^+	D	I$_\gamma$: from authors' I(γ+ce)=2 *1* and α value. Mult.: A_2=−0.05 *2*, A_4=−0.02 *3* (1981Fi02).
71.1 *2*	1.8 *5*	1880.2	11^-	1809.1	9^-	Q	Mult.: A_2=+0.25 *2*, A_4=−0.03 *2* (1981Fi02). I$_\gamma$: from authors' I(γ+ce)=10 *3* and α value.
122.6 *1*	51 *3*	122.6	6^+	0	8^+		
162.9 *1*	20 *1*	285.5	5^+	122.6	6^+	D	Mult.: A_2=−0.08 *1*, A_4=+0.00 *1* (1981Fi02).
171.1 *1*	22 *1*	171.1	7^+	0	8^+	D	Mult.: A_2=−0.12 *1*, A_4=+0.03 *2* (1981Fi02).
203.0 *10*	1.2 *8*	854.0	2^+	651.0	3^+		A_2=−0.01 *7*, A_4=−0.1 *1* (1981Fi02).
237.7 *1*	22 *1*	362.6	5^-	124.9	4^-	D	Mult.: A_2=−0.26 *2*, A_4=+0.03 *2* (1981Fi02).
323.0 *2*	6.6 *4*	651.0	3^+	328.0	4^+		A_2=+0.03 *3*, A_4=+0.01 *4* (1981Fi02).
584.5 *5*	≈3	3071.8		2487.3	(12^-)		
607.1 *2*	12 *2*	2487.3	(12^-)	1880.2	11^-	D	Mult.: A_2=−0.71 *7*, A_4=+0.2 *2* (1981Fi02).
812.9 *1*	100	812.9	9^+	0	8^+	D	Mult.: A_2=−0.47 *1*, A_4=+0.03 *1* (1981Fi02).
996.2 *2*	21 *1*	1809.1	9^-	812.9	9^+		A_2=+0.29 *6*, A_4=−0.12 *7* (1981Fi02).
1067.3 *2*	27 *1*	1880.2	11^-	812.9	9^+	Q	Mult.: A_2=+0.33 *3*, A_4=−0.08 *5* (1981Fi02).
1172.7 *2*	9 *1*	1985.6	10^+	812.9	9^+	D	Mult.: A_2=−0.23 *7*, A_4=−0.1 *1* (1981Fi02).

[†] Deduced from $\gamma(\theta)$ data following (α,3nγ) reaction at 35 MeV.
[‡] From $\gamma(\theta)$ measurements in 1981Fi02.

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Level Scheme

Intensities: Relative I_γ

Legend

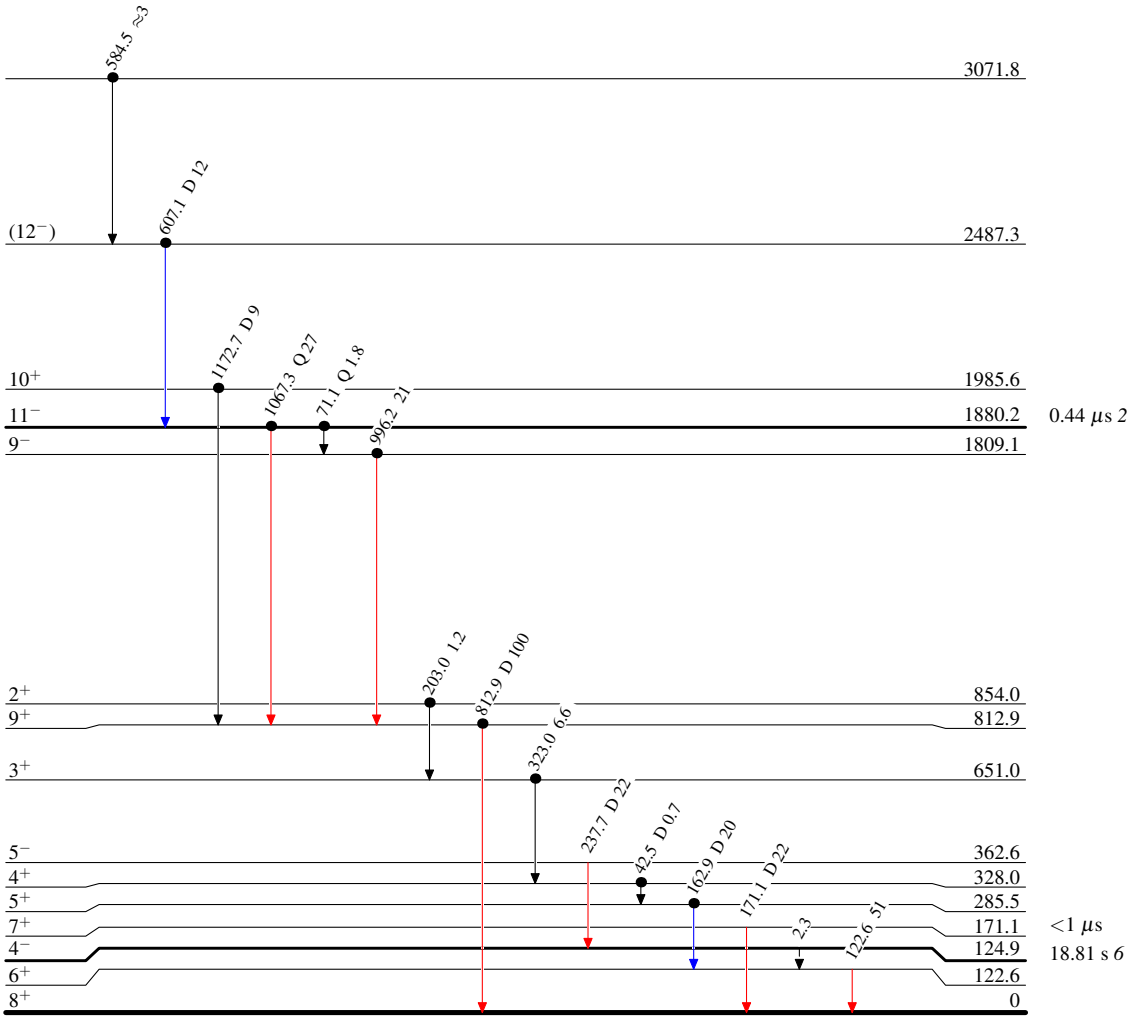
$I_\gamma < 2\% \times I_\gamma^{max}$

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

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

γ Decay (Uncertain)

Coincidence



$^{90}_{41}Nb_{49}$