^{65}Cu(α,pγ) 1976Br23

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	E. A. Mccutchan	NDS 113, 1735 (2012)	1-Mar-2012

1976Br23: Eα=12-21 MeV. Measured Eγ, Iγ(Eα), $\gamma(\theta)$, $\gamma\gamma$ coincidences, $\gamma\gamma$(t) using Ge(Li) detectors.
1974Iv01: Eα=13 MeV. Measured Eγ, γ-p coincidences, DSAM for $T_{1/2}$ of 1883 level.
All data are from 1976Br23, except where noted.

^{68}Zn Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0#	0^+		
1077.4# *4*	2^+		
1883.4 *4*	2^+	>110 fs	$T_{1/2}$: from DSAM (1974Iv01).
2417.7# *7*	4^+		
3458.3 *9*	5^-		J$^\pi$: D+Q 1041γ to 4^+; agrees with $J^\pi=5^-$ from other data.
3610.3 *10*	$(6)^-$	<2.5 ns	J$^\pi$: D(+Q) 152γ to 5^- and the yield function of the 152γ favor J=6. $T_{1/2}$: Upper limit from $\gamma\gamma$(t) measurement of 152γ in 1976Br23.
3687.8# *9*	(6^+)		J$^\pi$: Q+O 1270γ to 4^+ and the yield function of the 1270γ favor J=6.
3942.4 *11*	(7^-)	<6 ns	J$^\pi$: 1976Br23 assign (8^-) based on (Q) 332γ to $(6)^-$ and the yield function of the 332γ. $T_{1/2}$: Upper limit from $\gamma\gamma$(t) measurement of 332γ in 1976Br23.
4397.1 *10*	(8^+)		J$^\pi$: Q(+O) 709γ to (6^+) and the yield function of the 709γ favor J=8.

† From least-squares fit to Eγ's by evaluator.
‡ From the Adopted Levels. Contributing arguments for J^π assignments from this reaction are indicated.
# Yrast band.

$\gamma(^{68}Zn)$

E$_\gamma$†	I$_\gamma$‡	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.#	δ#	Comments
152.0 *5*	23 *2*	3610.3	$(6)^-$	3458.3	5^-	D(+Q)	−0.05 *+8−6*	
332.1 *5*	<10	3942.4	(7^-)	3610.3	$(6)^-$	(Q)		I$_\gamma$: includes also the weak 334γ. Mult.: large statistical errors in $\gamma(\theta)$ fit make Q characterization tentative.
x334								
709.3 *5*	17 *2*	4397.1	(8^+)	3687.8	(6^+)	Q(+O)	+0.05 *+2−8*	
805.8 *5*	10 *1*	1883.4	2^+	1077.4	2^+			
1040.6 *5*	47 *5*	3458.3	5^-	2417.7	4^+	D+Q	+0.07 *5*	
1077.3 *5*	100 *10*	1077.4	2^+	0	0^+	Q		
1270.1 *5*	23 *2*	3687.8	(6^+)	2417.7	4^+	Q+O	+0.14 *5*	
1340.2 *5*	80 *8*	2417.7	4^+	1077.4	2^+	Q(+O)	+0.02 *+5−2*	
1883.5 *5*	16 *2*	1883.4	2^+	0	0^+			

† Average of γ energies obtained at Eα=18 and 21 MeV (1976Br23).
‡ At Eα=18 MeV, θ=55°, relative to Iγ(1077γ)=100 (1976Br23).
# From $\gamma(\theta)$.
x γ ray not placed in level scheme.

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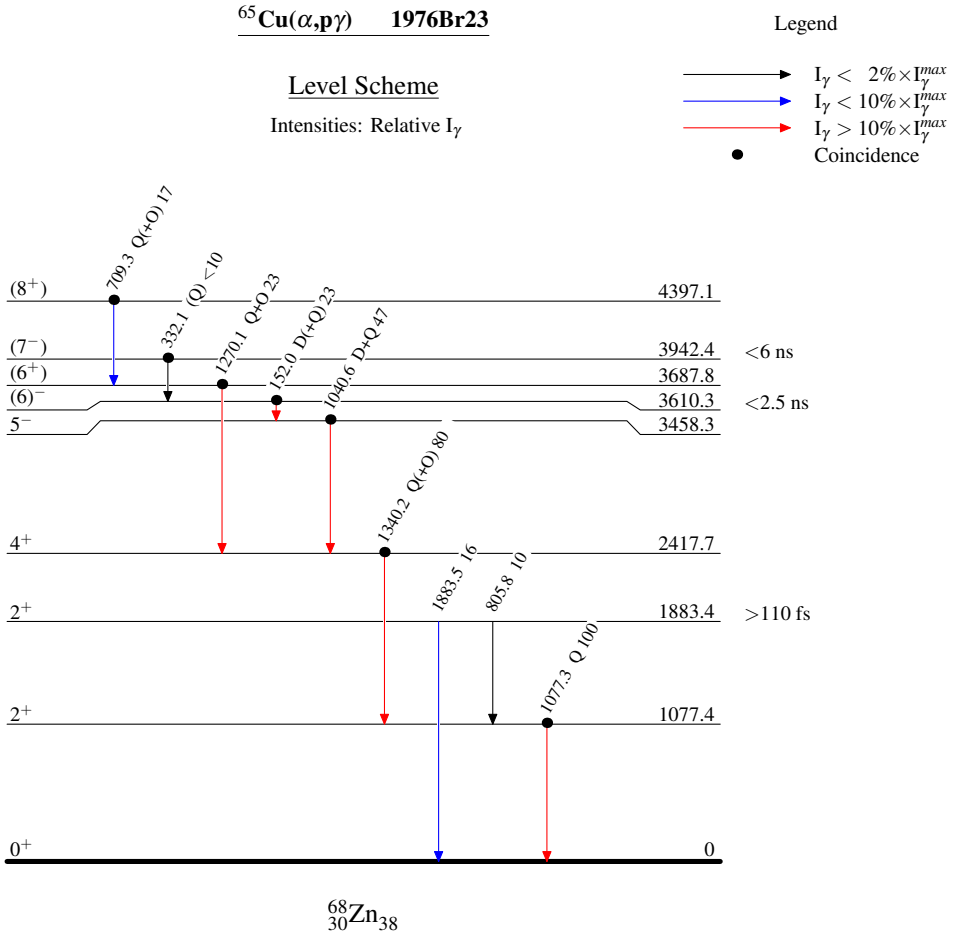
Level Scheme

Intensities: Relative I_γ



$^{68}_{30}Zn_{38}$