^{63}Cu(p,γ) E=3217,3251 keV 1976Fo06

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh and Jun Chen	NDS 178, 41 (2021).	12-Nov-2021

1976Fo06: E(p)=3.145-3.275 MeV. Measured primary γ. Deduced γ-ray transition strengths for both resonances.

^{64}Zn Levels

E(level)	J$^\pi$[†]	Comments
0	0^+	
992	2^+	
1800	2^+	
2305	4^+	
2739	4^+	
2793	2^+	
2982	3^+	
3002	3^-[‡]	
3074	4^+	
3199	(2,3)	
3285		
3360	1^+	
3415		
3681		
3760		
3845		
3855		
4154	5^-	
4305		
4365		
4684		
10872	(3^-)	E(level): from E(p)(lab)=3217 resonance, identified as $g_{9/2}$ IAR of 1546 level in ^{64}Cu. J$^\pi$: γ decay similar to the decay of 3251 keV resonance (1976Fo06).
10906	(3^-)	E(level): from E(p)(lab)=3251 resonance, identified as $g_{9/2}$ IAR of 1589 level in ^{64}Cu. J$^\pi$: from Iγ(90°)/Iγ(0°) of primary transitions. Parity from decay modes and lack of 3^+ in the parent nucleus ^{64}Cu.

[†] From the Adopted Levels for selected levels for which the the J^π assignments are limited to at the most two choices. Exceptions are noted.
[‡] Identified as the antianalog state (1976Fo06).

γ(^{64}Zn)

E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[‡]	E$_f$	J$_f^\pi$	E$_i$(level)	J$_i^\pi$	E$_\gamma$[†]	I$_\gamma$[‡]	E$_f$	J$_f^\pi$
10872	(3^-)	6568	5	4305		10872	(3^-)	8080	9	2793	2^+
		6719	3	4154	5^-			8134	8	2739	4^+
		7113	2	3760				8568	5	2305	4^+
		7192	3	3681				9073	9	1800	2^+
		7458	4	3415				9881	19	992	2^+
		7513	2	3360	1^+			10872[b]	1	0	0^+
		7588[b]		3285		10906	(3^-)	6222	2	4684	
		7674	5	3199	(2,3)			6541	3	4365	
		7799	6	3074	4^+			6601	4	4305	
		7871	14	3002	3^-			6752	5	4154	5^-
		7891	5	2982	3^+			7051	3	3855	

Continued on next page (footnotes at end of table)

^{63}Cu(p,γ) E=3217,3251 keV 1976Fo06 (continued)

$\gamma(^{64}Zn)$ (continued)

E_i(level)	E_γ[†]	I_γ[‡]	E_f	J^π_f	E_i(level)	J^π_i	E_γ[†]	I_γ[‡]	E_f	J^π_f
10906	7061	3	3845		10906	(3$^-$)	8113	5	2793	2$^+$
	7621	3	3285				8167	3	2739	4$^+$
	7707	4	3199	(2,3)			8601	4	2305	4$^+$
	7832	5	3074	4$^+$			9106	10[@]	1800	2$^+$
	7904	15[a]	3002	3$^-$			9914	26[#]	992	2$^+$
	7924	3[&]	2982	3$^+$			10906[b]	1	0	0$^+$

[†] From difference of level energies.
[‡] Branching ratio.
[#] Iγ(0°)/Iγ(90°)=1.39 *20*.
[@] Iγ(0°)/Iγ(90°)=1.33 *25*.
[&] Iγ(0°)/Iγ(90°)=0.82 *17*.
[a] Iγ(0°)/Iγ(90°)=0.84 *13*.
[b] Placement of transition in the level scheme is uncertain.

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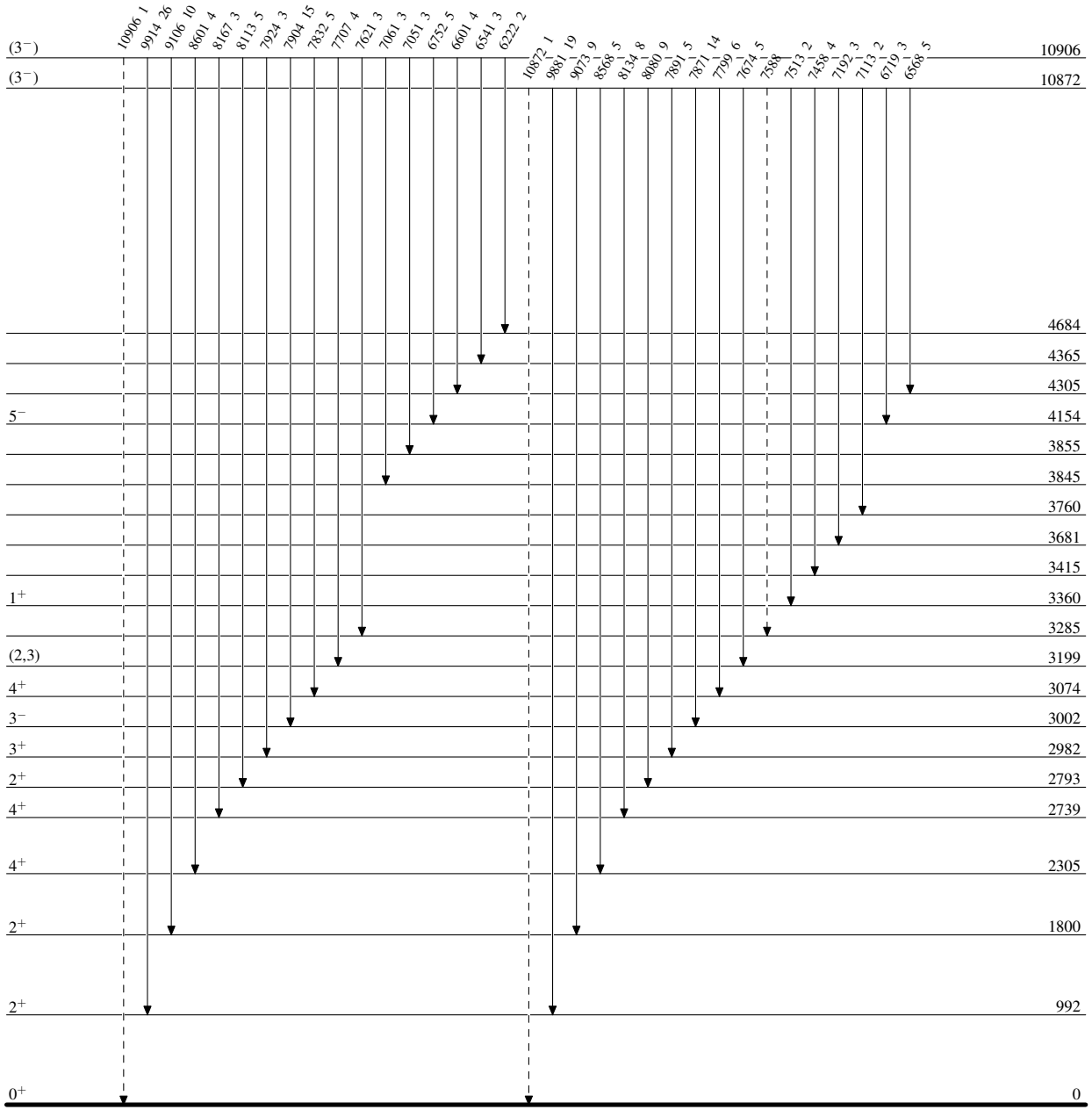
Legend

Level Scheme

Intensities: % photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{64}_{30}Zn_{34}$