^{63}Cu(p,γ) E=2098 keV 1975Hs04

History

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

1975Hs04: E(p)=1.75-2.95 MeV. Measured primary and secondary γ rays.

^{64}Zn Levels

E(level)	J^{π}[†]	Comments
0	0^+	
992	2^+	
1799	2^+	
1909	0^+	
2308	4^+	
2610	0^+	
2736	4^+	
2794	2^+	
2980	3^+	
3004	3^-	
3092	$(3)^+$	
3188	1^+	
3206	$(3)^+$	
3263	1	
3300	$(2)^+$	
3368	1^+	
3428	1^+	
3458	(2,3)	
3549	4^+	
3602	$(1,2^+)$	
3797	1^+	
3880		
3900		
9772	(2^+)	E(level): from E(p)(lab)=2098 keV. J^{π}: γ rays to 0^+ and 4^+ levels.

[†] From the Adopted Levels for selected levels for which the the J^{π} assignments are limited to at the most two choices.

γ(^{64}Zn)

E_{γ}	I_{γ}	E_i(level)	J_i^{π}	E_f	J_f^{π}
807	116 *10*	1799	2^+	992	2^+
917	8.2 *7*	1909	0^+	992	2^+
937	4.2 *2*	2736	4^+	1799	2^+
992	362 *11*	992	2^+	0	0^+
1290	4.7 *2*	3092	$(3)^+$	1799	2^+
1316	13.2 *21*	2308	4^+	992	2^+
1498	3.1 *12*	3300	$(2)^+$	1799	2^+
1618	3.8 *3*	2610	0^+	992	2^+
1747	6.5[‡] *5*	2736	4^+	992	2^+
1798	49 *3*	1799	2^+	0	0^+
1988	10 *3*	2980	3^+	992	2^+
2008	27 *5*	3004	3^-	992	2^+
2103	11.9 *11*	3092	$(3)^+$	992	2^+
2195	8.0 *9*	3188	1^+	992	2^+
2215	3.6[†] *5*	3206	$(3)^+$	992	2^+

Continued on next page (footnotes at end of table)

^{63}Cu(p,γ) E=2098 keV 1975Hs04 (continued)

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

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
2271	5.8 *4*	3263	1	992	2^+	
2306	10.6 *15*	3300	$(2)^+$	992	2^+	
2380	4.2 *13*	3368	1^+	992	2^+	
2438	1.3 *5*	3428	1^+	992	2^+	
2468	2.5 *3*	3458	(2,3)	992	2^+	
2560	3.1 *12*	3549	4^+	992	2^+	
2805	2.5 *4*	3797	1^+	992	2^+	
[x]2982[#]	0.8 *3*					
3006[@]	3.0 *5*	3004	3^-	0	0^+	
3191	4.1[&] *8*	3188	1^+	0	0^+	
3205[b]	4.0[†] *11*	3206	$(3)^+$	0	0^+	Placement of 3205γ to 0^+ less likely as required mult=[M3].
3265	5.2[a] *6*	3263	1	0	0^+	
3299	4.5 *20*	3300	$(2)^+$	0	0^+	
3367	4.7 *4*	3368	1^+	0	0^+	
3428	9.9 *10*	3428	1^+	0	0^+	
3455	4.3 *20*	3458	(2,3)	0	0^+	Placement of 3455γ is questionable as not seen in other reactions.
3551	1.6 *6*	3549	4^+	0	0^+	Placement of 3551γ is questionable as required mult=[E4].
3602	2.0 *8*	3602	$(1,2^+)$	0	0^+	
3797	7.2 *21*	3797	1^+	0	0^+	
5873	5.2 *11*	9772	(2^+)	3900		
5892	7 *3*	9772	(2^+)	3880		
5975	7.7 *18*	9772	(2^+)	3797	1^+	
6172	8 *3*	9772	(2^+)	3602	$(1,2^+)$	
6224	12.2 *16*	9772	(2^+)	3549	4^+	
6313	8 *3*	9772	(2^+)	3458	(2,3)	
6344	8.6 *16*	9772	(2^+)	3428	1^+	
6407	8.0 *20*	9772	(2^+)	3368	1^+	
6469	11 *3*	9772	(2^+)	3300	$(2)^+$	
6514	5.8 *20*	9772	(2^+)	3263	1	
6569	13.7 *15*	9772	(2^+)	3206	$(3)^+$	
6585	8.7 *9*	9772	(2^+)	3188	1^+	
6681	15 *4*	9772	(2^+)	3092	$(3)^+$	
6768	14.5 *10*	9772	(2^+)	3004	3^-	
6795	14.6 *18*	9772	(2^+)	2980	3^+	
6977	12.0 *10*	9772	(2^+)	2794	2^+	
7040	6.8 *18*	9772	(2^+)	2736	4^+	
7162	5.5 *20*	9772	(2^+)	2610	0^+	
7464	11 *4*	9772	(2^+)	2308	4^+	
7861	7.0 *5*	9772	(2^+)	1909	0^+	
7972	65 *20*	9772	(2^+)	1799	2^+	
8782	70 *6*	9772	(2^+)	992	2^+	
9772	25 *5*	9772	(2^+)	0	0^+	

[†] Disagrees with that from other reactions. See Adopted Gammas for expected intensity.
[‡] From the Adopted Gammas, expected I$\gamma\approx$0.2.
[#] Suggested placement with 2980 level not correct.
[@] This γ probably deexcites a 3005 level (see Adopted Levels).
[&] From the Adopted Gammas, expected I$\gamma\approx$0.1.
[a] From the Adopted Gammas, expected I$\gamma\approx$0.3.
[b] Placement of transition in the level scheme is uncertain.
[x] γ ray not placed in level scheme.

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Level Scheme

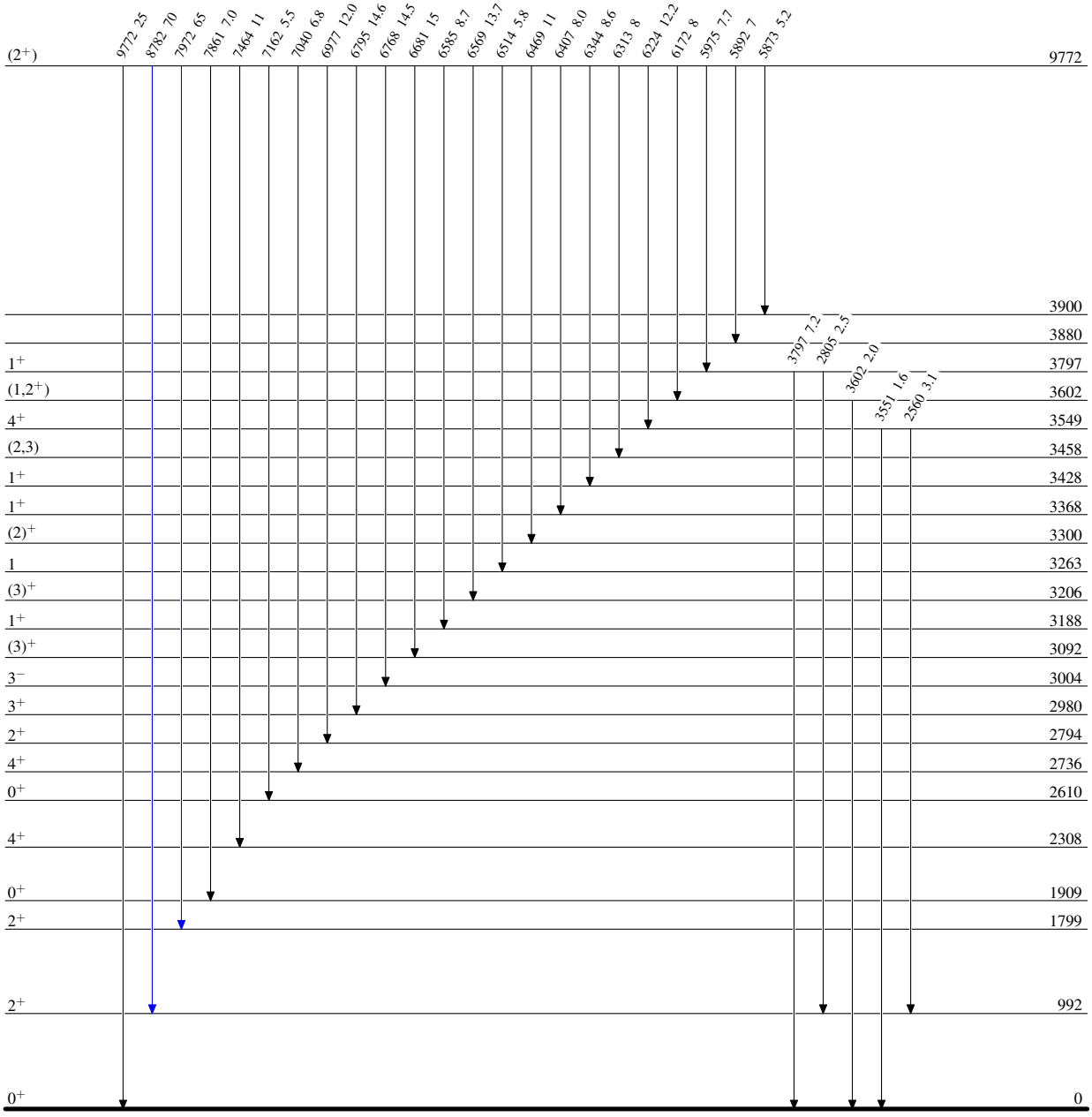
Intensities: Relative I_γ

Legend

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

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

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



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

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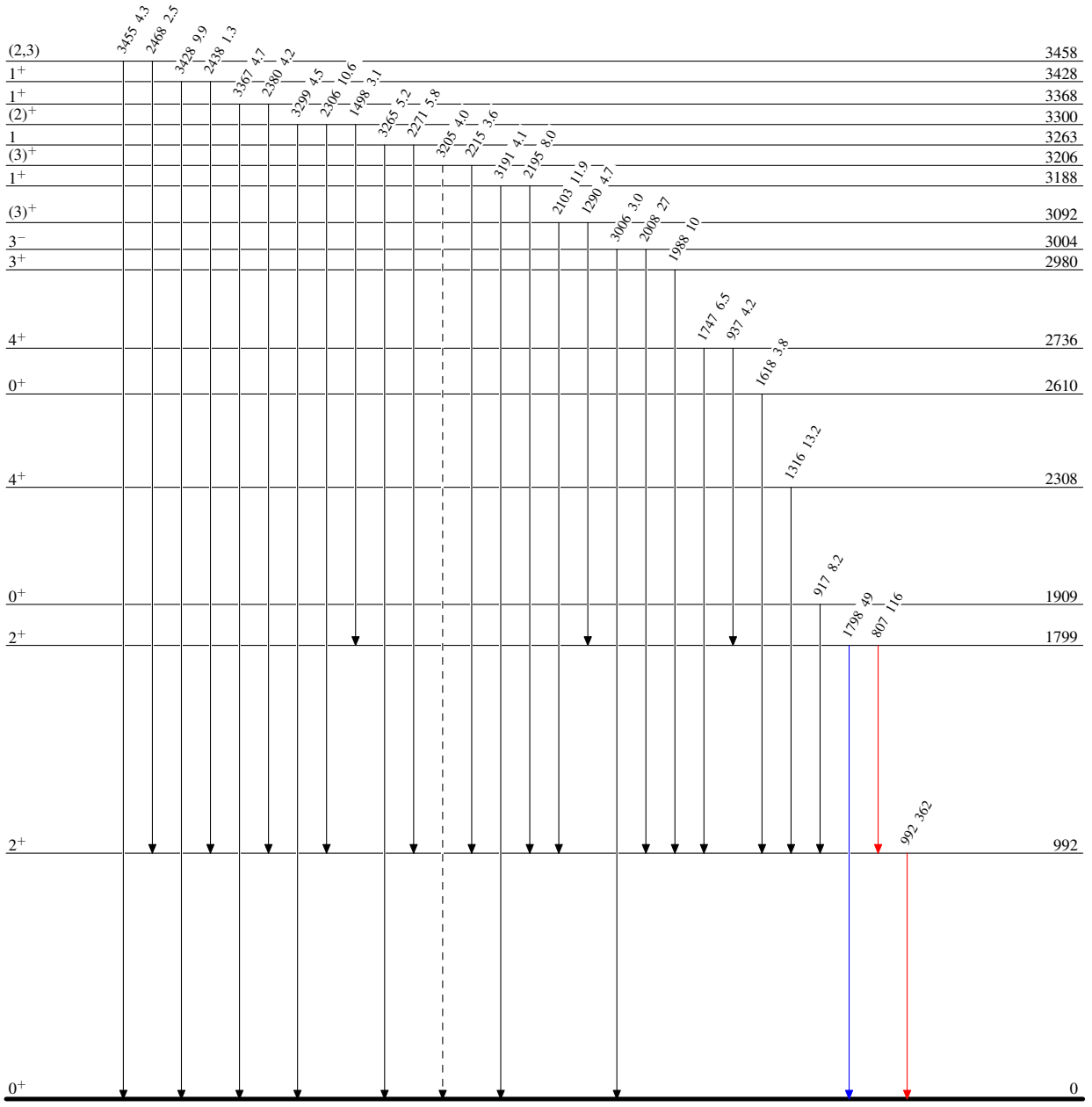
Level Scheme (continued)

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)



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