^{63}Cu(p,2nγ) 1976Br33

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Balraj Singh, Huang Xiaolong, and Wang Xianghan	NDS 204,1 (2025)	30-Jun-2023

1976Br33: E=22-31 MeV, measured Eγ, Iγ, γγ, γ(θ).
1973Ku05: E=17.0-32.5 MeV, measured Eγ, Iγ, excitation functions. This work mainly concerns (p,t) experiment.

^{62}Zn Levels

E(level)	Jπ†
0.0	0+
954.0 *4*	2+
1804.6 *4*	2+
2185.8 *6*	4+
2384.6 *6*	3+
2743.3 *12*	(4+)
3586.3? *12*	
3707.3 *8*	6(+)
4042.8 *12*	
4903.3 *13*	(7)

† As proposed in 1976Br33, based on previous assignments for low-lying levels, and multipolarities for selected transitions from γ(θ) data.

γ(^{62}Zn)

Eγ†	Iγ†	Ei(level)	J^π_i	Ef	J^π_f	Mult.‡	δ‡	Comments
557.4 *5*	10 *2*	2743.3	(4+)	2185.8	4+			Eγ: doublet. Contribution of 557γ in ^{62}Cu has been estimated and subtracted. ΔIγ=±25%.
580.0 *5*	6 *1*	2384.6	3+	1804.6	2+	(M1+E2)[a]	−0.5 *1*	A2=−0.42 *10*; A4=0.0 *1*
843 *1*		3586.3?		2743.3	(4+)			Eγ: unresolved from the 844γ in ^{27}Al.
850.5 *5*	14 *2*	1804.6	2+	954.0	2+	(M1+E2)[a]	−1.2 *+4−5*	A2=−0.13 *3*; A4=0.00 *4* Additional information 2.
859.2@	8.0@ *7*	4903.3	(7)	4042.8				
x925.2#&	40.7# *9*							
939 *1*		2743.3	(4+)	1804.6	2+			Eγ: weak multiplet γ.
953.9 *5*	100 *10*	954.0	2+	0.0	0+	(Q)		A2=+0.08 *3*; A4=0.00 *3* Additional information 1.
x998.7#	18.9# *8*							
1196 *1*	<2	4903.3	(7)	3707.3	6(+)			Eγ,Iγ: unresolved from 1194-keV γ in ^{62}Cu. ΔIγ=±20%.
1231.7 *5*	42 *4*	2185.8	4+	954.0	2+	(Q)		A2=+0.21 *3*; A4=−0.03 *5* δ(O/Q)=0.00 *5*. Additional information 4.
x1285.6#	15.5# *9*							
x1427.7#	≈14.9#							
1431 *1*		2384.6	3+	954.0	2+			Additional information 5. Eγ: unresolved from 1428γ in ^{59}Ni and 1430γ in ^{62}Cu.

Continued on next page (footnotes at end of table)

^{63}Cu(p,2nγ) 1976Br33 (continued)

$\gamma(^{62}Zn)$ (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	Mult.‡	Comments
1521.5 *5*	8 *1*	3707.3	$6^{(+)}$	2185.8	4^+	Q	A_2=+0.29 *3*; A_4=−0.12 *5* δ(O/Q)=−0.05 *+3−4*.
1804.6 *5*	9 *1*	1804.6	2^+	0.0	0^+		E_γ: weakly influenced by the presence of 1808γ from ^{26}Mg. I_γ: other: Iγ(1805)/Iγ(851)=0.67 *10* (1973Ku05). Additional information 3.
1857 *1*	<3	4042.8		2185.8	4^+		E_γ,I_γ: unresolved from 1861-keV γ in ^{62}Cu. $\Delta I\gamma$=±20%.

† From 1976Br33, at 55°, E=26 MeV, $\Delta I\gamma$=±10%, except as noted.
‡ From $\gamma(\theta)$ data (1976Br33). Mult=Q is most likely E2.
# Unplaced γ reported by 1973Ku05, probably contributed by an impurity.
@ γ reported by 1973Ku05, tentative placement by evaluator.
& Uncertain γ ray.
a $\gamma(\theta)$ data give ΔJ=1, D+Q; large mixing ratio consistent with M1+E2 from RUL.
x γ ray not placed in level scheme.

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Level Scheme

Intensities: Relative I_γ

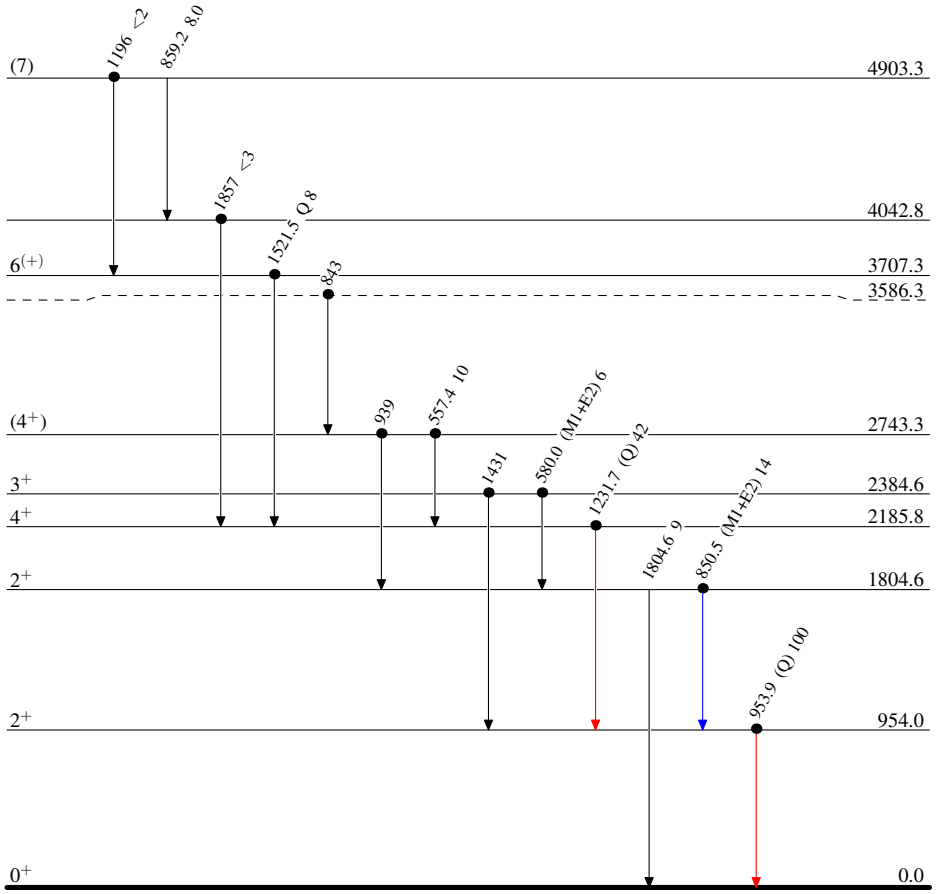
Legend

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

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

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

Coincidence



$^{62}_{30}Zn_{32}$