^{198}Pt(^{70}Zn,xγ) 2000Is01,2001Is02

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 207,1 (2026)	1-Apr-2023

Includes ^{198}Pt(^{76}Ge,Xγ), Ni(^{86}Kr,Xγ), ^{208}Pb,^{130}Te(^{64}Ni,Xγ) and ^{208}Pb(^{58}Ni,Xγ).

2000Is01: Deep inelastic collisions with ^{70}Zn beam at 566 MeV produced at the JAERI tandem booster facility on a ^{198}Pt target. Measured Eγ, γγ, Iγ, fragment-γ coin and deduced $T_{1/2}$ of isomeric states using improved isomer scope instrument consisting of Si and Ge detectors and γ-ray absorbers. Anisotropies γ(θ) of fragment-γ rays measured by Ge detectors placed in plane (θ=90°) and out of plane (θ=0°).

1998Gr14: Ni(^{86}Kr,Xγ). E(^{86}Kr)=60.3 MeV/nucleon on natural Ni target using Alpha and LISE3 spectrometers at GANIL. Measured Eγ, γγ, γ(t) fragment-γ coincidence with Si planar and HPGe detectors. Two isomeric states at E=321 keV and 2701 keV observed. Deduced $T_{1/2}$ of isomer.

1999BrZS (Supersedes 1998BrZU): ^{69}Cu produced by deep inelastic collision of 350 MeV ^{64}Ni and 345 MeV ^{58}Ni on ^{208}Pb target, and 275 MeV ^{64}Ni on ^{130}Te target. Measured Eγ, projectile-γγ coincidence and $T_{1/2}$.

2001Is02,1997Is13: Deep inelastic collisions with ^{76}Ge beam at E=635 MeV produced at the JAERI tandem booster facility on a ^{198}Pt target at $\theta_{grazing}$= 35°. Measured Eγ, γγ, fragment-γ coin and deduced $T_{1/2}$ of isomeric states using isomer scope instrument consisting of Si and Ge detectors and γ-ray absorbers.

^{69}Cu Levels

E(level)[†]	Jπ	$T_{1/2}$	Comments
0	$3/2^-$	2.85 min *15*	$T_{1/2}$: From Adopted Levels.
1212.8 *8*	$(5/2)^-$		
1710.7[‡] *9*	$7/2^-$		
1870.9[#] *7*	$7/2^-$		
2181.1[‡] *10*	$9/2^-$		
2551.4 *8*	$9/2^+$		
2667.3[‡] *9*	$11/2^-$		Jπ: Authors in 1997Is13 have assigned $9/2^+$ for this level in ^{198}Pt(^{76}Ge,Xγ).
2741.4 *9*	$13/2^+$	357 ns *2*	$T_{1/2}$: From Adopted Level. Others measured in this dataset: 330 ns *80* (1999BrZS), 0.36 μs *5* (1998Gr14), and 360 ns *30* (1997Is13). Configuration=$\pi(p_{3/2})\nu^2(g^{+1}_{9/2},p^{-1}_{1/2})_{13/2+}$.
2867.3[#] *10*	$11/2^-$		
3213.7[‡] *10*	$13/2^{(-)}$		
3482.6[#] *10*	$15/2^-$		
3691.4[#] *14*	$19/2^-$	22 ns *1*	Configuration=$\pi(p_{3/2})\nu^2(g^2_{9/2})(p^{-2}_{1/2})$. $T_{1/2}$: From 2000Is01. Other: 20 ns *6* (1999BrZS).
3827.3 *11*	$(17/2^+)$	39 ns *6*	Configuration=$\pi^3(p^{+1}_{3/2},g^{+1}_{9/2},f^{-1}_{7/2})_{17/2+}$ (2000Is01). $T_{1/2}$: From 2000Is01.

[†] From least-square fit to Eγ's.

[‡] Band(A): $\pi(p^2_{3/2},p_{3/2},f_{5/2},f^2_{5/2},f^{-1}_{7/2})$ configuration.

[#] Band(B): $\pi p_{3/2}\nu^2 g^2_{9/2}p^{-2}_{1/2}$ configuration.

γ(^{69}Cu)

E_γ[†]	I_γ	E_i(level)	J^π_i	E_f	J^π_f	Mult.[‡]
74.0	28	2741.4	$13/2^+$	2667.3	$11/2^-$	
189.9	100	2741.4	$13/2^+$	2551.4	$9/2^+$	Q[@]
208.8	100	3691.4	$19/2^-$	3482.6	$15/2^-$	
268.9	9	3482.6	$15/2^-$	3213.7	$13/2^{(-)}$	
470.4	74	2181.1	$9/2^-$	1710.7	$7/2^-$	D[#]

Continued on next page (footnotes at end of table)

^{198}Pt(^{70}Zn,xγ) 2000Is01,2001Is02 (continued)

$\gamma(^{69}Cu)$ (continued)

E_γ[†]	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[‡]
485.9	68	2667.3	$11/2^-$	2181.1	$9/2^-$	D[#]
546.2	21	3213.7	$13/2^{(-)}$	2667.3	$11/2^-$	D[#]
613.6	13	3827.3	$(17/2^+)$	3213.7	$13/2^{(-)}$	
615.3	39	3482.6	$15/2^-$	2867.3	$11/2^-$	Q[@]
657.8	6	1870.9	$7/2^-$	1212.8	$(5/2)^-$	
680.2	103	2551.4	$9/2^+$	1870.9	$7/2^-$	D[#]
741.1	38	3482.6	$15/2^-$	2741.4	$13/2^+$	D[#]
815.3	19	3482.6	$15/2^-$	2667.3	$11/2^-$	Q[@]
956.7	6	2667.3	$11/2^-$	1710.7	$7/2^-$	
996.3	36	2867.3	$11/2^-$	1870.9	$7/2^-$	Q[@]
1032.9	6	3213.7	$13/2^{(-)}$	2181.1	$9/2^-$	
1085.8	11	3827.3	$(17/2^+)$	2741.4	$13/2^+$	
1212.5	7	1212.8	$(5/2)^-$	0	$3/2^-$	
1710.8	75	1710.7	$7/2^-$	0	$3/2^-$	Q[@]
1870.9	139	1870.9	$7/2^-$	0	$3/2^-$	Q[@]
2551.6	2	2551.4	$9/2^+$	0	$3/2^-$	

[†] All data are from 2000Is01. No uncertainties are given by the authors.
[‡] From ratio of γ ray intensities measured at in plane (θ=90°)and out of plane (θ=0°). W(in)/W(out) < 1 suggests stretched dipole (ΔJ=1). W(in)/W(out)> 1 suggests stretched quadrupole (ΔJ=2).
[#] From W(in)/W(out) < 1.
[@] From W(in)/W(out) > 1.

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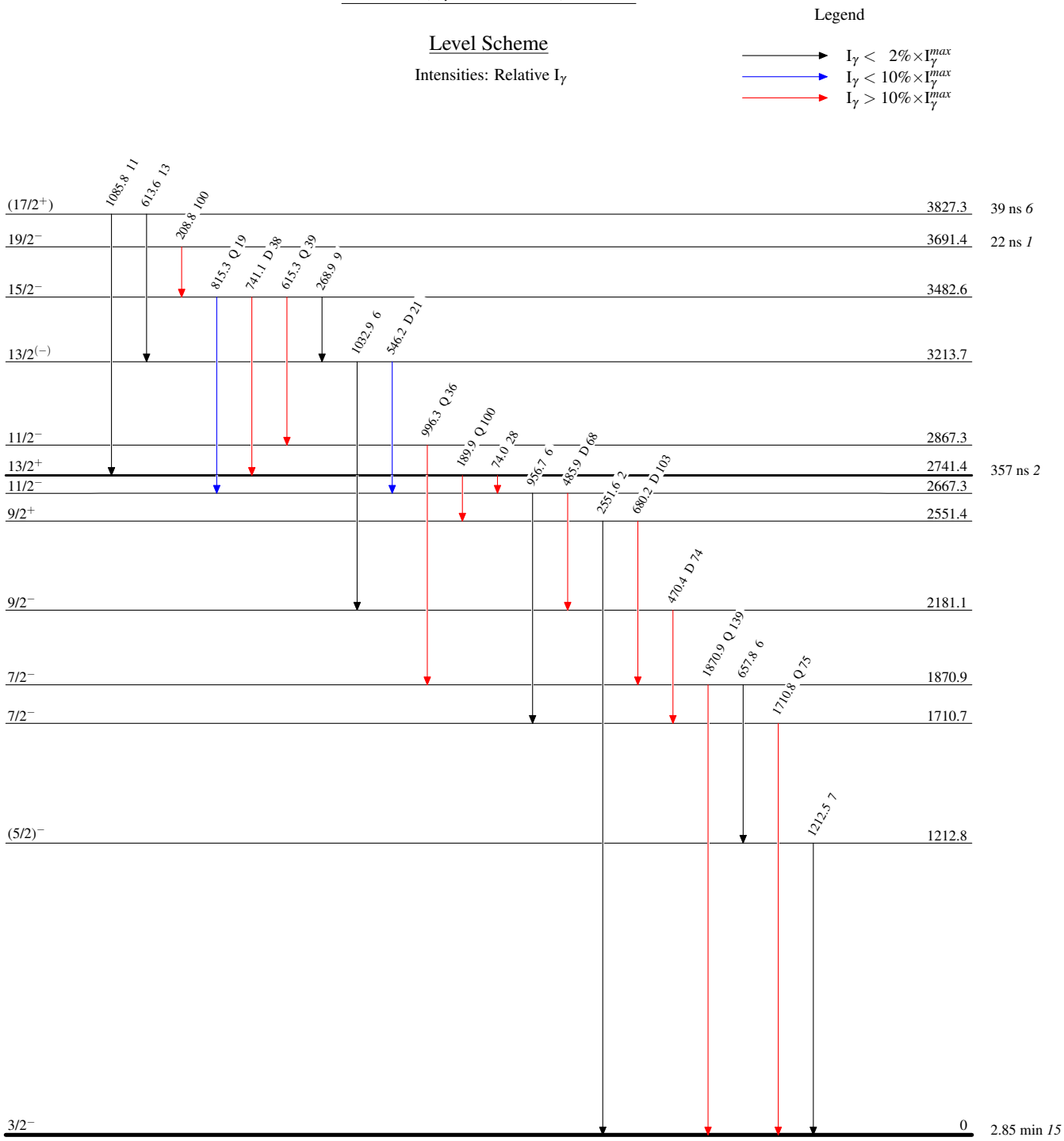
Level Scheme

Intensities: Relative I_γ



$^{69}_{29}Cu_{40}$

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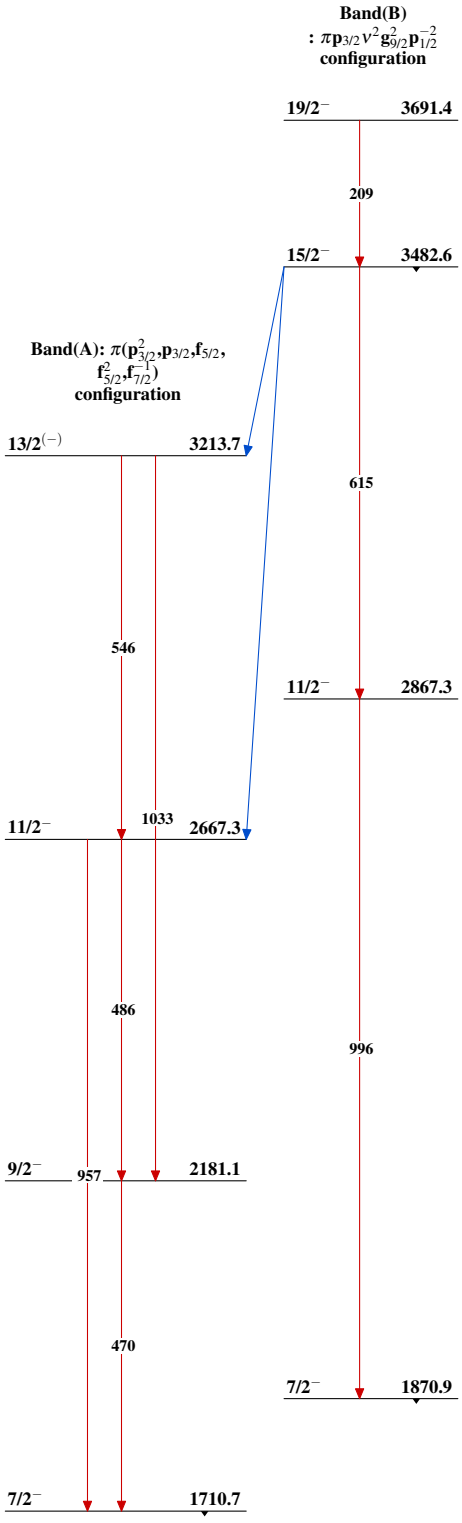

$^{69}_{29}Cu_{40}$