^{62}Ni(^{13}C,p2nγ) 1998Do01

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	D. Abriola(a), A. A. Sonzogni	NDS 111,1 (2010)	1-May-2009

E=48.5 MeV. Target: 98.3% enriched ^{62}Ni. Measured Eγ, Iγ, $\gamma(\theta)$, Linear Polarization of γ rays. Deduced multipolarities and mixing ratios. Detectors: Compton-suppressed Ge, and a four-Ge crystal Compton polarimeter.

^{72}As Levels

E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ	E(level)†	Jπ
0.0	2$^-$	828.2# *10*	6$^+$	1875.0# *10*	10$^+$	3151.2# *11*	(12$^+$)
46.00 *13*	1$^+$	834.0‡ *10*	6$^-$	2133.8‡ *10*	9$^-$	3445.7‡ *11*	12$^-$
213.60 *8*	3$^+$	981.1# *10*	8$^+$	2307.6# *10*	11$^+$	3504.6# *11*	13$^+$
309.70 *8*	4$^-$	1179.0 *10*	7	2326.4 *11*	10$^{(-)}$	4777.6# *15*	(15$^+$)
362.8 *10*	5$^-$	1346.3‡ *10*	7$^-$	2516.8‡ *10*	10$^-$	6087.8# *18*	(17$^+$)
562.8 *10*	7$^-$	1401.8# *10*	9$^+$	2925.0 *15*	(11$^-$)		
662.7 *10*	6$^-$	1665.6‡ *10*	8$^-$	3043.8‡ *11*	11$^{(-)}$		

† From least-squares fit to γ-ray energies, assuming $\Delta E\gamma$=1 keV if unknown.
‡ Band(A): Based on 6$^-$.
# Band(B): Based on 6$^+$. Probable configuration=πg9/2νg9/2.

γ(^{72}As)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.†	δ†	Comments
45.9		46.00	1$^+$	0.0	2$^-$			
53.1		362.8	5$^-$	309.70	4$^-$			
96.1 *1*		309.70	4$^-$	213.60	3$^+$	E1		A$_2$=−0.01 *2*, A$_4$=−0.10 *2*.
152.7 *2*		981.1	8$^+$	828.2	6$^+$	E2		A$_2$=+0.21 *5*, A$_4$=−0.06 *6*.
167.6 *1*	59 *1*	213.60	3$^+$	46.00	1$^+$	E2		A$_2$=+0.02 *1*, A$_4$=−0.01 *1*.
200.0 *1*	100 *2*	562.8	7$^-$	362.8	5$^-$	E2		A$_2$=+0.03 *1*, A$_4$=0.00 *1*. pol=+0.04 *2*.
213.6 *1*	47 *1*	213.60	3$^+$	0.0	2$^-$	E1		A$_2$=−0.03 *1*, A$_4$=0.00 *1*. pol=+0.02 *2*.
265.2 *2*	3.3 *3*	828.2	6$^+$	562.8	7$^-$	E1		A$_2$=−0.07 *8*, A$_4$=0.00 *10*. pol=+0.31 *13*.
271.1 *2*	7.1 *3*	834.0	6$^-$	562.8	7$^-$	M1		A$_2$=−0.20 *3*, A$_4$=−0.01 *4*. pol=−0.23 *12*.
299.9 *2*	18 *1*	662.7	6$^-$	362.8	5$^-$	M1		A$_2$=−0.33 *4*, A$_4$=+0.12 *5*. pol=−0.39 *5*. δ: 0.0.
309.7 *1*	46 *1*	309.70	4$^-$	0.0	2$^-$	E2		A$_2$=+0.08 *1*, A$_4$=−0.02 *1*. pol=+0.19 *3*.
319.3 *2*	3.9 *3*	1665.6	8$^-$	1346.3	7$^-$	M1+E2		A$_2$=−0.24 *4*, A$_4$=+0.10 *5*.
350.8 *2*	6.5 *3*	1179.0	7	828.2	6$^+$			A$_2$=−0.49 *4*, A$_4$=+0.06 *5*.
353.7		3504.6	13$^+$	3151.2	(12$^+$)			
383.0 *3*	1.9 *2*	2516.8	10$^-$	2133.8	9$^-$	M1+E2		A$_2$=−0.49 *10*, A$_4$=+0.05 *12*.
418.3 *1*	66 *2*	981.1	8$^+$	562.8	7$^-$	E1		A$_2$=−0.25 *1*, A$_4$=+0.01 *1*. pol=+0.34 *3*.
420.7 *2*	23 *1*	1401.8	9$^+$	981.1	8$^+$	M1+E2	−0.12	A$_2$=−0.46 *3*, A$_4$=+0.04 *4*. pol=−0.25 *7*.
432.6 *2*	17 *1*	2307.6	11$^+$	1875.0	10$^+$	M1+E2	−0.08	A$_2$=−0.55 *4*, A$_4$=+0.12 *5*. pol=−0.30 *4*.
465.5 *2*	12 *1*	828.2	6$^+$	362.8	5$^-$	E1		A$_2$=−0.24 *3*, A$_4$=+0.04 *3*. pol=+0.27 *7*.
468.2 *3*	4.3 *4*	2133.8	9$^-$	1665.6	8$^-$	M1+E2		A$_2$=−0.55 *7*, A$_4$=+0.07 *9*.
471.2 *2*	8.2 *4*	834.0	6$^-$	362.8	5$^-$	M1		A$_2$=−0.33 *3*, A$_4$=+0.09 *4*. pol=−0.32 *12*.
473.6		1875.0	10$^+$	1401.8	9$^+$			
512‡		1346.3	7$^-$	834.0	6$^-$			
526.9 *3*	3.9 *3*	3043.8	11$^{(-)}$	2516.8	10$^-$	(M1+E2)		A$_2$=−0.38 *7*, A$_4$=+0.03 *8*.
598.6		2925.0	(11$^-$)	2326.4	10$^{(-)}$			
783.5 *2*	5.3 *4*	1346.3	7$^-$	562.8	7$^-$	M1+E2	+0.2	A$_2$=+0.48 *6*, A$_4$=−0.07 *7*. pol=+0.76 *23*.
787.4 *2*	5.6 *4*	2133.8	9$^-$	1346.3	7$^-$	E2		A$_2$=+0.33 *6*, A$_4$=−0.08 *7*. pol=+0.32 *15*.
831.5		1665.6	8$^-$	834.0	6$^-$			

Continued on next page (footnotes at end of table)

^{62}Ni(^{13}C,p2nγ) 1998Do01 (continued)

$\gamma(^{72}As)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	Comments
843.7		3151.2	(12^+)	2307.6	11^+		
851.3 *2*	8.3 *4*	2516.8	10^-	1665.6	8^-	E2	A_2=+0.26 *5*, A_4=−0.26 *6*. pol=+0.25 *13*.
893.9 *2*	43 *1*	1875.0	10^+	981.1	8^+	E2	A_2=+0.19 *3*, A_4=−0.04 *3*. pol=+0.33 *5*.
905.7 *2*	18 *2*	2307.6	11^+	1401.8	9^+	E2	A_2=+0.15 *3*, A_4=+0.01 *4*. pol=+0.24 *7*.
910.2		3043.8	$11^{(-)}$	2133.8	9^-		
924.6 *3*	4.3 *5*	2326.4	$10^{(-)}$	1401.8	9^+	(E1)	A_2=−1.11 *14*, A_4=+0.48 *17*.
928.8 *3*	6.1 *7*	3445.7	12^-	2516.8	10^-	E2	A_2=+0.19 *9*, A_4=−0.16 *12*.
1197.0 *3*	9.0 *7*	3504.6	13^+	2307.6	11^+	E2	
1273 *1*	25 *2*	4777.6	(15^+)	3504.6	13^+	(E2)	A_2=+0.25 *5*, A_4=−0.17 *7*, pol=+0.27 *10* for unresolved lines: 1273γ and 1276.3γ. I_γ: Composite value for unresolved lines: 1273γ and 1276.3$\gamma\gamma$.
1276.3 *4*		3151.2	(12^+)	1875.0	10^+	(E2)	I_γ: See comment for 1273γ.
1310.2		6087.8	(17^+)	4777.6	(15^+)		

[†] From $\gamma(\theta)$ and polarization data.
[‡] Placement of transition in the level scheme is uncertain.

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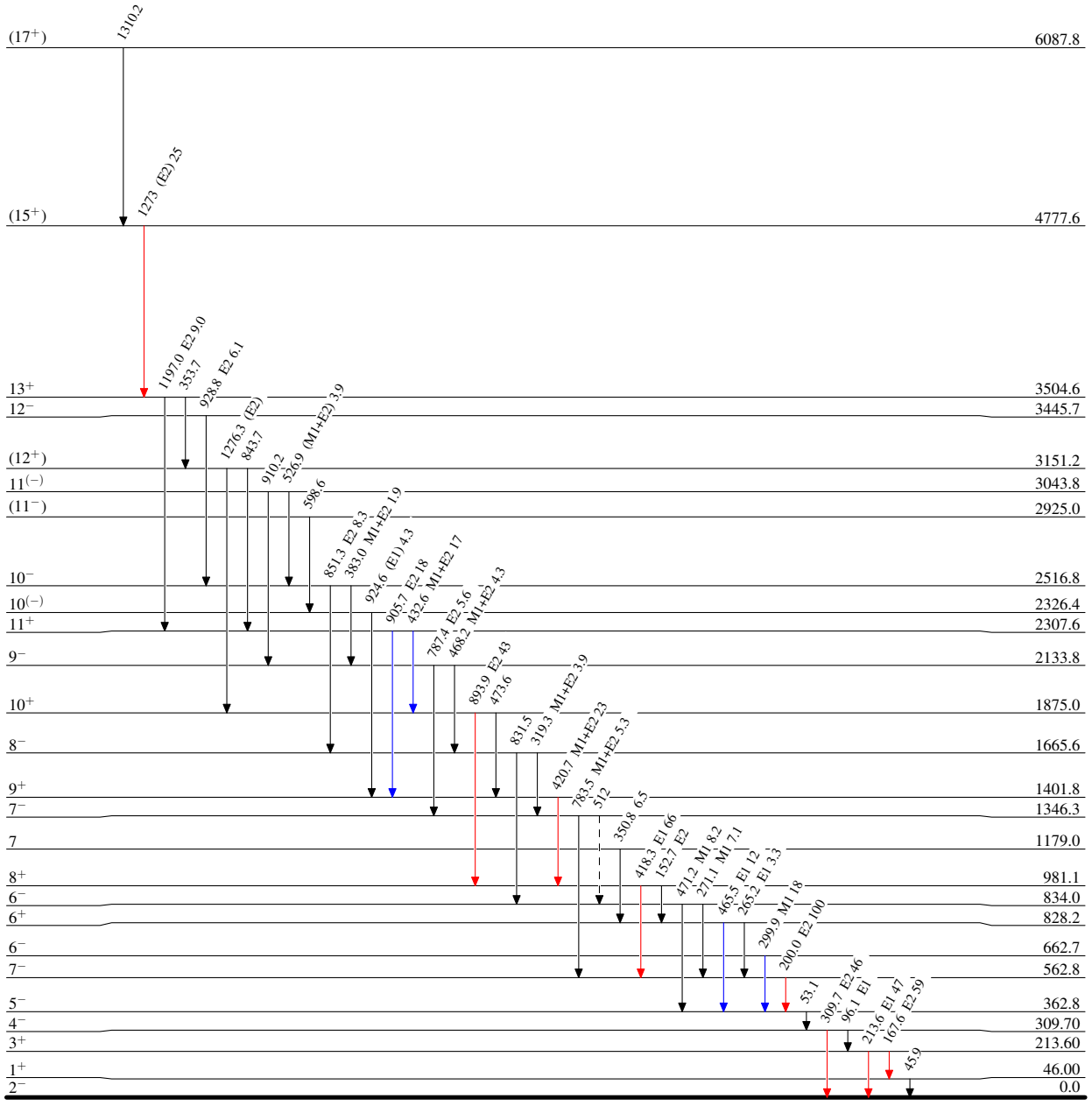
Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{72}_{33}As_{39}$

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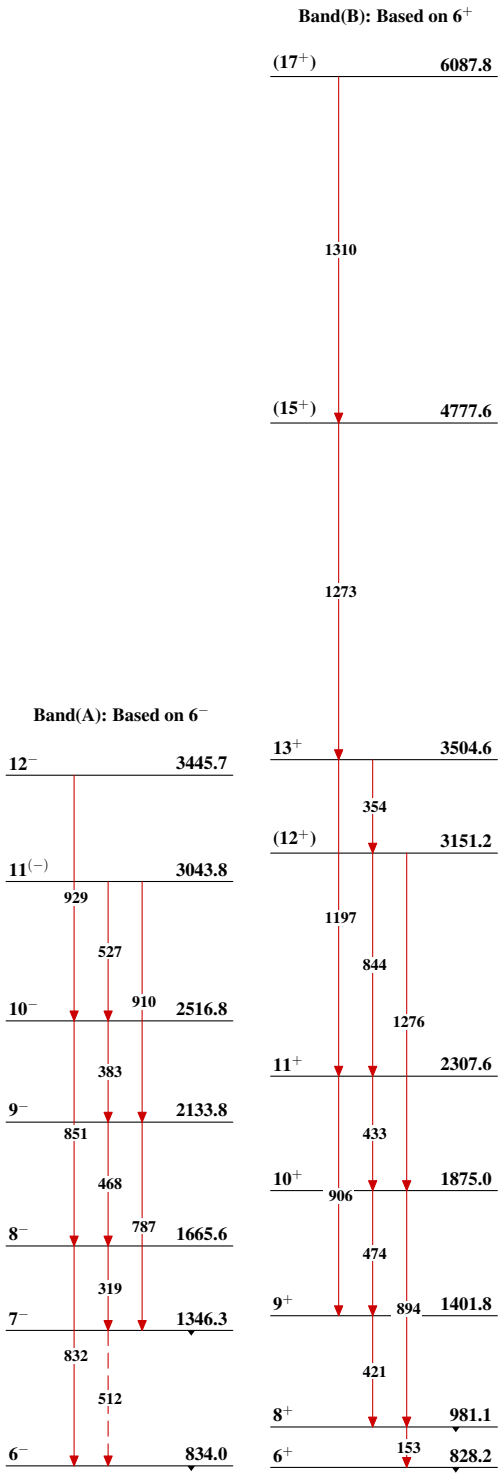

$^{72}_{33}As_{39}$