^{94}Zr(^{13}C,3nγ) 1976Gr12

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 108,2035 (2007)	30-Mar-2007

Measured Iγ, $\gamma\gamma$, $\gamma(\theta)$, γ-ray linear pol, $\gamma\gamma(\theta)$ from aligned states.
See 1976Gr12 for excitations in ^{102}Pd, ^{106}Pd following (^{13}C,3nγ) reactions.
A_2, A_4 coefficients deduced from $\gamma(\theta)$ spectra at 9 angles by 1976Gr12.
Other: 1976St03 measured γ-ray linear polarization at E(^{13}C)=42 MeV.

^{104}Pd Levels

E(level)	J$^\pi$†	E(level)	J$^\pi$†	E(level)	J$^\pi$†	E(level)	J$^\pi$†
0‡	0$^+$	2264.9 *2*	4$^+$	3220.7‡ *2*	8$^+$	4635.0& *3*	12$^+$
555.8‡ *1*	2$^+$	2298.0 *2*	4$^-$	3368.1# *2*	9$^-$	4648.5@ *3*	12$^-$
1323.6‡ *1*	4$^+$	2491.4 *1*	5$^-$	3421.8& *2*	8$^+$	4963.1# *3*	13$^-$
1341.7 *2*	2$^+$	2667.7 *2*	5$^-$	3501.8 *3*	9$^-$	5432.1 *3*	14$^+$
1820.9 *2*	3$^+$	2900.8 *2*	6$^-$	3769.5@ *3*	10$^-$	5681.2@ *4*	14$^-$
2082.4 *2*	4$^+$	2958.9 *3*	6$^-$	4023.1& *3*	10$^+$	6021.8# *4*	15$^-$
2181.7 *2*	4$^+$	2988.4 *2*	7$^-$	4047.9# *3*	11$^-$	6358.3& *6*	16$^+$
2249.8‡ *1*	6$^+$	3151.8@ *2*	8$^-$	4202.4 *4*	11$^-$	7422.4& *6*	18$^+$

† From $\gamma(\theta)$ and γ-ray linear polarization compared with γ-ray polarization calculated from A_2, A_4 in $\gamma(\theta)$. Strongly polarized γ rays leave highly-aligned states resulting from (HI,xn)I reactions.
‡ Band(A): ΔJ=2 sequence. up to 8$^+$ built on g.s.
# Band(B): ΔJ=2 sequence. up to 15$^-$ built on 9$^-$.
@ Band(C): ΔJ=2 sequence. up to 14$^-$ built on 8$^-$ level.
& Band(D): ΔJ=2 sequence. up to 18$^+$ built on 10$^+$ level.

γ(^{104}Pd)

E$_\gamma$	I$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult.†	δ†	Comments
116.3 *2*	1.6 *6*	2298.0	4$^-$	2181.7	4$^+$	E1+M2	0.50 *5*	
163.40 *15*	4.4 *1*	3151.8	8$^-$	2988.4	7$^-$	M1+E2	−0.58 *20*	δ: −0.58 *20* or −1.3.
193.37 *20*	1.9 *1*	2491.4	5$^-$	2298.0	4$^-$	M1+E2	0.44 *5*	
201.08 *20*	1.4 *1*	3421.8	8$^+$	3220.7	8$^+$	M1+E2	−0.15 *15*	
215.6 *3*	2.2 *6*	2298.0	4$^-$	2082.4	4$^+$	E1+M2		
216.3 *3*	3.0 *4*	3368.1	9$^-$	3151.8	8$^-$	M1		
233.2 *3*	1.2 *3*	2900.8	6$^-$	2667.7	5$^-$	M1+E2	−0.02 *3*	
250.97 *5*	14.2 *3*	3151.8	8$^-$	2900.8	6$^-$	E2		
309.7 *3*	1.1 *3*	2491.4	5$^-$	2181.7	4$^+$			
320.7 *3*	1.0 *2*	2988.4	7$^-$	2667.7	5$^-$	E2		
350.0 *2*	1.9 *3*	3501.8	9$^-$	3151.8	8$^-$	M1+E2	0.22 *3*	
379.70 *5*	20.8 *7*	3368.1	9$^-$	2988.4	7$^-$	E2		
401.44 *15*	1.4 *1*	3769.5	10$^-$	3368.1	9$^-$	M1+E2	−1.0 *5*	δ: 0.70 *8* or 1.9 *3*.
409.0 *2*	0.5 *2*	2491.4	5$^-$	2082.4	4$^+$			
409.46 *10*	7.5 *5*	2900.8	6$^-$	2491.4	5$^-$	M1+E2	0.70 *8*	
467.5 *2*	1.6 *3*	2958.9	6$^-$	2491.4	5$^-$	M1+E2	0.28 *5*	
497.05 *10*	2.9 *1*	2988.4	7$^-$	2491.4	5$^-$	E2		
555.79 *5*	100.	555.8	2$^+$	0	0$^+$	E2		
601.3 *2*	3.2 *2*	4023.1	10$^+$	3421.8	8$^+$	E2		
602.8 *2*	3.5 *2*	2900.8	6$^-$	2298.0	4$^-$	E2		
611.89 *5*	15.8 *3*	4635.0	12$^+$	4023.1	10$^+$	E2		

Continued on next page (footnotes at end of table)

^{94}Zr(^{13}C,3nγ) 1976Gr12 (continued)

$\gamma(^{104}Pd)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.[†]	δ[†]
617.73 *5*	11.8 *3*	3769.5	10^-	3151.8	8^-	E2	
651.04 *15*	3.1 *1*	2900.8	6^-	2249.8	6^+	E1+M2	0.18 *8*
679.76 *5*	18.9 *4*	4047.9	11^-	3368.1	9^-	E2	
700.6 *2*	1.4 *3*	4202.4	11^-	3501.8	9^-		
738.61 *5*	27.5 *6*	2988.4	7^-	2249.8	6^+	E1(+M2)	−0.04 *2*
740.7 *3*	1.7 *8*	2082.4	4^+	1341.7	2^+	E2	
758.83 *20*	1.4 *1*	2082.4	4^+	1323.6	4^+	M1+E2	−0.84 *24*
767.80 *5*	90.6 *18*	1323.6	4^+	555.8	2^+	E2	
785.92 *20*	1.9 *1*	1341.7	2^+	555.8	2^+	M1+E2	−4.8 *42*
797.04 *10*	11.8 *7*	5432.1	14^+	4635.0	12^+	E2	
802.46 *5*	18.8 *5*	4023.1	10^+	3220.7	8^+	E2	
858.08 *15*	1.6 *1*	2181.7	4^+	1323.6	4^+	M1+E2	0.45 *30*
879.01 *15*	6.8 *2*	4648.5	12^-	3769.5	10^-	E2	
915.25 *10*	10.3 *3*	4963.1	13^-	4047.9	11^-	E2	
926.2 *4*	5.4 *5*	6358.3	16^+	5432.1	14^+		
926.21 *10*	63.2 *12*	2249.8	6^+	1323.6	4^+	E2	
941.3 *2*	2.7 *9*	2264.9	4^+	1323.6	4^+	M1+E2	−0.64 *14*
970.88 *10*	23.2 *10*	3220.7	8^+	2249.8	6^+	E2	
974.38 *20*	2.3 *3*	2298.0	4^-	1323.6	4^+	E1+M2	0.5 *6*
1032.70 *15*	2.4 *1*	5681.2	14^-	4648.5	12^-	E2	
1058.71 *15*	4.8 *2*	6021.8	15^-	4963.1	13^-	E2	
1064.15 *20*	2.1 *1*	7422.4	18^+	6358.3	16^+	E2	
1167.79 *5*	14.5 *4*	2491.4	5^-	1323.6	4^+	E1(+M2)	0.00 *2*
1172.04 *20*	4.2 *2*	3421.8	8^+	2249.8	6^+	E2	
1265.08 *20*	2.5 *2*	1820.9	3^+	555.8	2^+	M1+E2	0.23 *7*
1341.7 *2*	1.7 *1*	1341.7	2^+	0	0^+		
1344.1 *2*	2.9 *2*	2667.7	5^-	1323.6	4^+	E1+M2	−0.06 *5*
1526.5 *2*	1.7 *1*	2082.4	4^+	555.8	2^+	E2	
1625.8 *4*	0.8 *5*	2181.7	4^+	555.8	2^+	E2	

[†] From γ-rays linear polarization (1976St03) and $\gamma\gamma(\theta)$ from oriented nuclei (1976Gr12).

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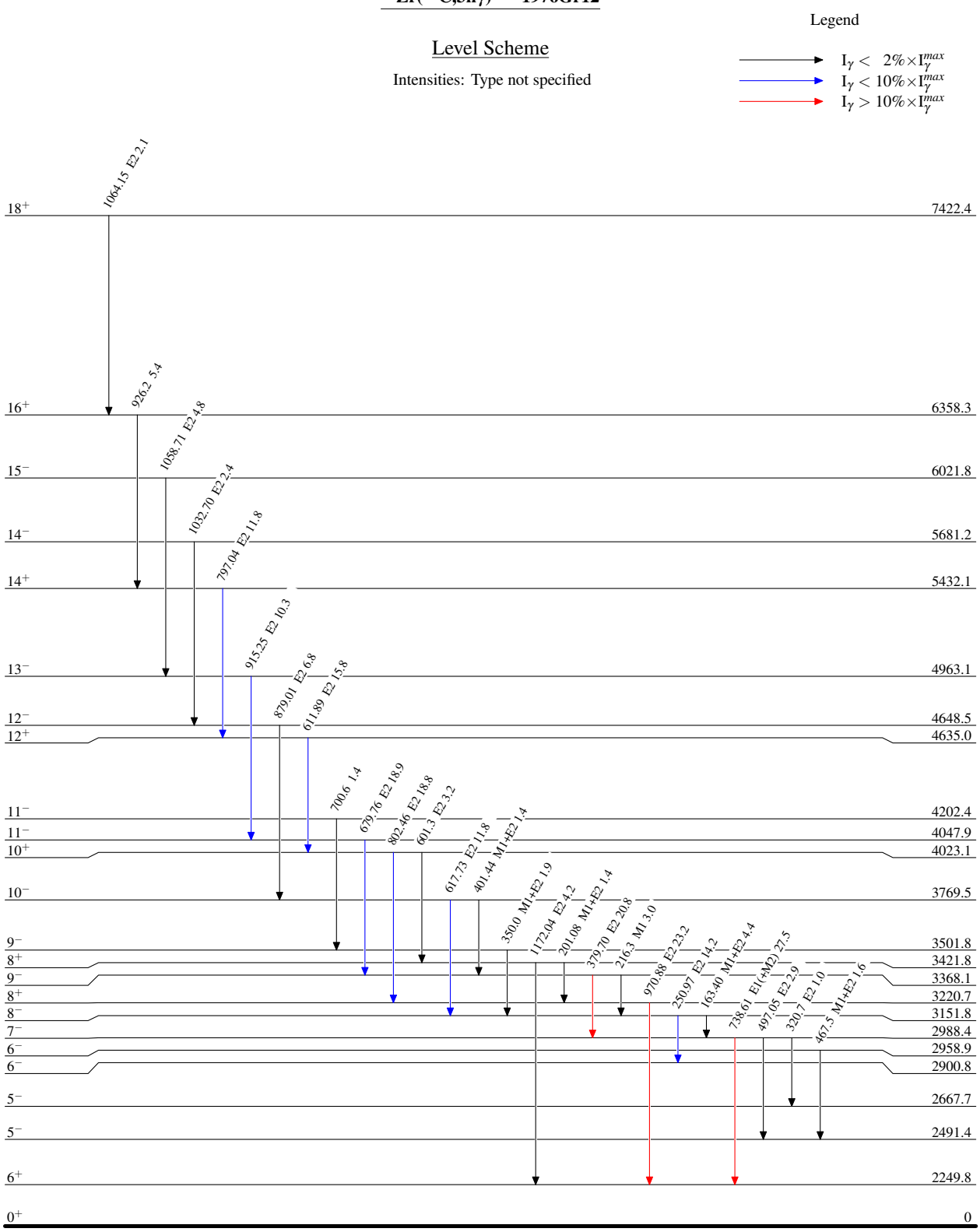
Level Scheme

Intensities: Type not specified



$^{104}_{46}Pd_{58}$

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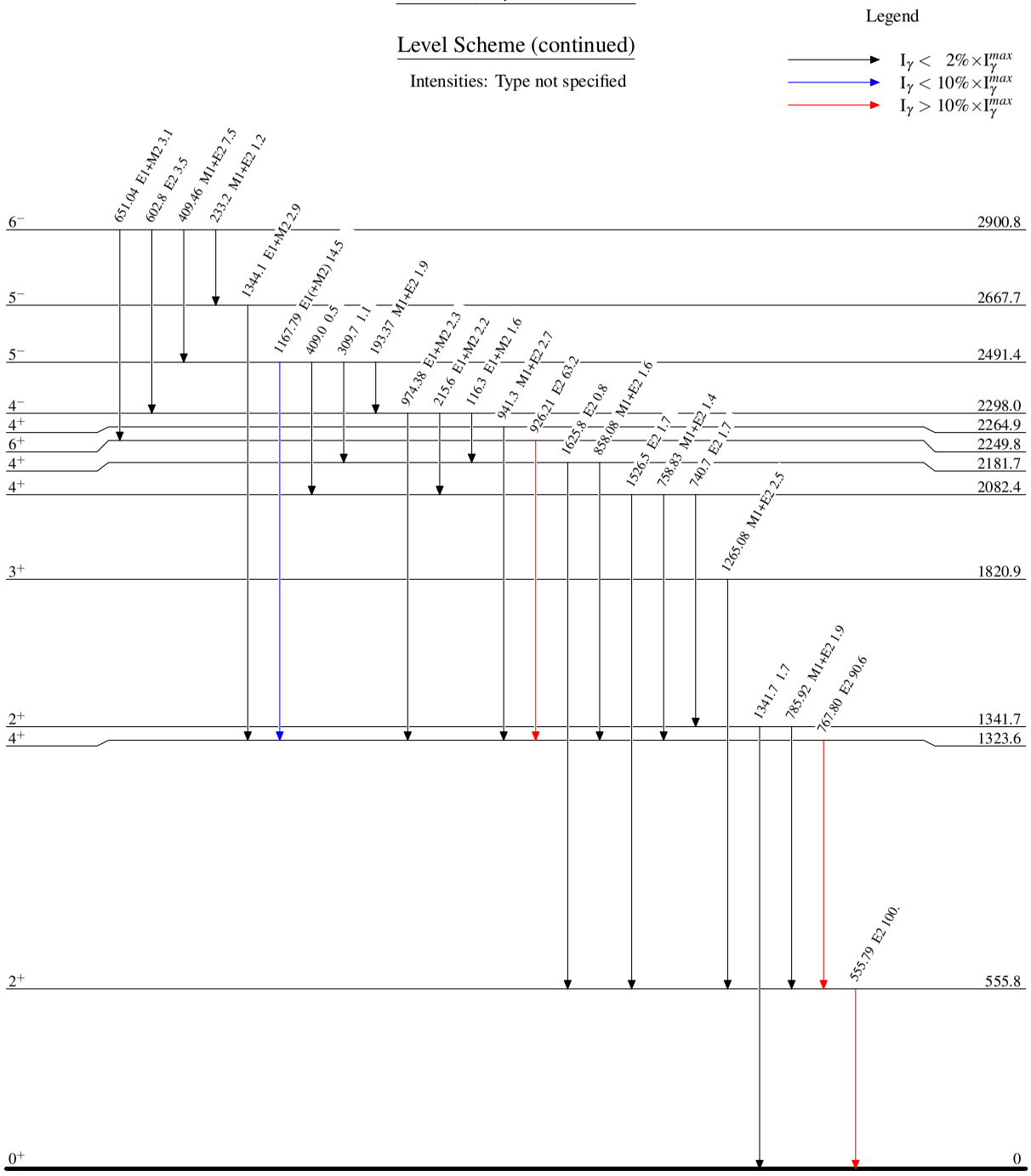
Level Scheme (continued)

Intensities: Type not specified



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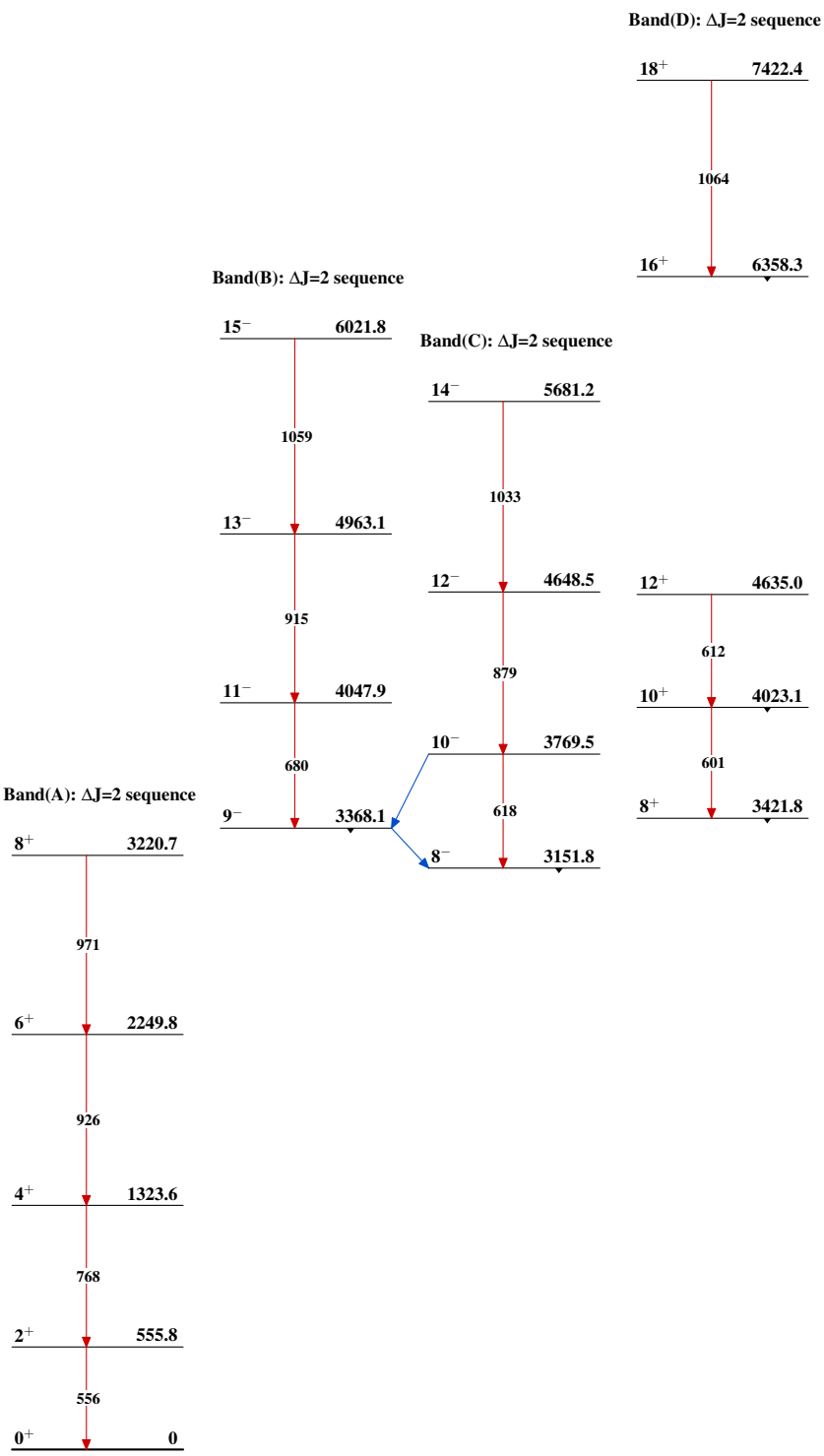

$^{104}_{46}Pd_{58}$