^{196}Pt(^{11}B,5nγ) 1993Cl02

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 196,342 (2024)	1-Sep-2023

1993Cl02: E(^{11}B)=75 MeV. Gammas detected in an array of 16 escape-suppressed Ge(Li) detectors and 50 element BGO ball. Three bands of stretched M1 transitions were found, two of these bands were assigned firmly to ^{202}Bi based on coincidences with well known ^{202}Bi transitions. The third band is tentatively assigned to ^{202}Bi. The transition intensities of bands 1, 2 and 3 relative to Iγ(866) (the 12^- to 10^- transition) were 15%, 4%, and 3%, respectively.

^{202}Bi Levels

E(level)†	J$^\pi$‡	T$_{1/2}$‡	Comments
0	5^+	1.71 h *4*	
7‡ *5*	(7^+)		Additional information 1.
605‡ *5*	(8^-)		
605+x‡	(10^-)	3.04 μs *6*	Additional information 2.
1229.0+x *8*	(11^-)		
1471.0+x *8*	(12^-)		
1793.0+x *13*	(12)		
1796.7+x *9*	(13^-)		
1834.1+x *11*	(14^-)		
1842.0+x *13*	(13^-)		
2026.5+x *12*	(14^+)		
2193.1+x *11*	(12^-)		
2193.1+y#			Additional information 3.
2329.1+x *10*	(13^-)		
2329.1+z@			Additional information 4.
2357.1+y# *10*			
2509.1+z@ *10*			
2546.2+x *11*	(15^-)	2.0 ns *2*	
2597+x *25*	(17^+)	310 ns *50*	
2616.1+y# *14*			
2723.1+z@ *14*			
2968.1+y# *17*			
2988.1+z@ *17*			
3050.2+x *15*	(16^-)		
3151+x *26*	(18^+)		
3313.1+z@ *20*			
3392.1+y# *20*			
3703.1+z@ *22*			
3744+x *26*	(18)		
3873.1+y# *22*			
4403.1+y# *25*			
4973.1+y# *27*			
4973.1+w&			Additional information 5.
5223.1+w& *10*			
5523.1+w& *14*			
5880.1+w& *17*			
6293.1+w& *20*			
6758.1+w& *22*			
7275.1+w& *25*			

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^{196}Pt(^{11}B,5nγ) 1993Cl02 (continued)

^{202}Bi Levels (continued)

† From a least-squares fit to Eγ, by assuming ΔEγ=1 keV.
‡ From Adopted Levels.
# Band(A): Band 1.
@ Band(B): Band 2.
& Band(C): Band 3.

γ(^{202}Bi)

E$_\gamma$ †	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$	Mult. #	α @	Comments
136	2329.1+x	(13$^-$)	2193.1+x	(12$^-$)			
164	2357.1+y		2193.1+y		M1	2.49	α(K)=2.03 *3*; α(L)=0.354 *5*; α(M)=0.0833 *12*; α(N+..)=0.0262 *4* α(N)=0.0213 *3*; α(O)=0.00435 *6*; α(P)=0.000518 *8*
180	2509.1+z		2329.1+z		M1	1.92	α(K)=1.561 *22*; α(L)=0.272 *4*; α(M)=0.0640 *9*; α(N+..)=0.0201 *3* α(N)=0.01636 *23*; α(O)=0.00334 *5*; α(P)=0.000398 *6*
214	2723.1+z		2509.1+z		M1	1.180	α(K)=0.961 *14*; α(L)=0.1671 *24*; α(M)=0.0393 *6*; α(N+..)=0.01235 *18* α(N)=0.01005 *14*; α(O)=0.00205 *3*; α(P)=0.000244 *4*
217	2546.2+x	(15$^-$)	2329.1+x	(13$^-$)			
230	2026.5+x	(14$^+$)	1796.7+x	(13$^-$)			
242	1471.0+x	(12$^-$)	1229.0+x	(11$^-$)			
250	5223.1+w		4973.1+w		M1	0.766	α(K)=0.624 *9*; α(L)=0.1083 *16*; α(M)=0.0254 *4*; α(N+..)=0.00800 *12* α(N)=0.00651 *10*; α(O)=0.001330 *19*; α(P)=0.0001583 *23*
259	2616.1+y		2357.1+y		M1	0.695	α(K)=0.566 *8*; α(L)=0.0981 *14*; α(M)=0.0231 *4*; α(N+..)=0.00725 *11* α(N)=0.00590 *9*; α(O)=0.001205 *17*; α(P)=0.0001435 *20*
265	2988.1+z		2723.1+z		M1	0.652	α(K)=0.532 *8*; α(L)=0.0921 *13*; α(M)=0.0216 *3*; α(N+..)=0.00680 *10* α(N)=0.00554 *8*; α(O)=0.001131 *16*; α(P)=0.0001347 *19*
300	5523.1+w		5223.1+w		M1	0.464	α(K)=0.378 *6*; α(L)=0.0654 *10*; α(M)=0.01536 *22*; α(N+..)=0.00483 *7* α(N)=0.00393 *6*; α(O)=0.000803 *12*; α(P)=9.56×10^{-5} *14*
325	3313.1+z		2988.1+z		M1	0.373	α(K)=0.304 *5*; α(L)=0.0525 *8*; α(M)=0.01232 *18*; α(N+..)=0.00387 *6* α(N)=0.00315 *5*; α(O)=0.000644 *9*; α(P)=7.67×10^{-5} *11*
325.8	1796.7+x	(13$^-$)	1471.0+x	(12$^-$)			E$_\gamma$: From adopted gammas.
352	2968.1+y		2616.1+y		M1	0.300	α(K)=0.245 *4*; α(L)=0.0422 *6*; α(M)=0.00990 *14*; α(N+..)=0.00311 *5* α(N)=0.00253 *4*; α(O)=0.000518 *8*; α(P)=6.17×10^{-5} *9*
357	5880.1+w		5523.1+w		M1	0.289	α(K)=0.236 *4*; α(L)=0.0406 *6*; α(M)=0.00953 *14*; α(N+..)=0.00300 *5* α(N)=0.00244 *4*; α(O)=0.000498 *7*; α(P)=5.93×10^{-5} *9*
363	1834.1+x	(14$^-$)	1471.0+x	(12$^-$)			
371	1842.0+x	(13$^-$)	1471.0+x	(12$^-$)			
390	3703.1+z		3313.1+z		M1	0.228	α(K)=0.186 *3*; α(L)=0.0319 *5*; α(M)=0.00749 *11*; α(N+..)=0.00235 *4* α(N)=0.00192 *3*; α(O)=0.000392 *6*; α(P)=4.67×10^{-5} *7*
413	6293.1+w		5880.1+w		M1	0.195	α(K)=0.1594 *23*; α(L)=0.0273 *4*; α(M)=0.00641 *9*; α(N+..)=0.00202 *3* α(N)=0.001640 *23*; α(O)=0.000335 *5*; α(P)=4.00×10^{-5} *6*
424	3392.1+y		2968.1+y		M1	0.182	α(K)=0.1486 *21*; α(L)=0.0255 *4*; α(M)=0.00597 *9*; α(N+..)=0.00188 *3* α(N)=0.001528 *22*; α(O)=0.000312 *5*; α(P)=3.72×10^{-5} *6*

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^{196}Pt(^{11}B,5nγ) 1993Cl02 (continued)

$\gamma(^{202}Bi)$ (continued)

E_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.[#]	α[@]	Comments
465	6758.1+w		6293.1+w		M1	0.1422	α(K)=0.1162 *17*; α(L)=0.0199 *3*; α(M)=0.00466 *7*; α(N+..)=0.001463 *21* α(N)=0.001191 *17*; α(O)=0.000243 *4*; α(P)=2.90×10^{-5} *4*
481	3873.1+y		3392.1+y		M1	0.1299	α(K)=0.1062 *15*; α(L)=0.0181 *3*; α(M)=0.00425 *6*; α(N+..)=0.001336 *19* α(N)=0.001087 *16*; α(O)=0.000222 *4*; α(P)=2.65×10^{-5} *4*
504	3050.2+x	(16$^-$)	2546.2+x	(15$^-$)			
517	7275.1+w		6758.1+w		M1	0.1073	α(K)=0.0877 *13*; α(L)=0.01494 *21*; α(M)=0.00350 *5*; α(N+..)=0.001101 *16* α(N)=0.000896 *13*; α(O)=0.000183 *3*; α(P)=2.18×10^{-5} *3*
520	2546.2+x	(15$^-$)	2026.5+x	(14$^+$)			
530	4403.1+y		3873.1+y		M1	0.1005	α(K)=0.0822 *12*; α(L)=0.01398 *20*; α(M)=0.00328 *5*; α(N+..)=0.001030 *15* α(N)=0.000839 *12*; α(O)=0.0001714 *24*; α(P)=2.04×10^{-5} *3*
554	3151+x	(18$^+$)	2597+x	(17$^+$)			
564	1793.0+x	(12)	1229.0+x	(11$^-$)			
570	4973.1+y		4403.1+y		M1	0.0829	α(K)=0.0678 *10*; α(L)=0.01152 *17*; α(M)=0.00270 *4*; α(N+..)=0.000849 *12* α(N)=0.000691 *10*; α(O)=0.0001412 *20*; α(P)=1.685×10^{-5} *24*
593	3744+x	(18)	3151+x	(18$^+$)			
597.8[‡] *1*	605	(8$^-$)	7	(7$^+$)			
624	1229.0+x	(11$^-$)	605+x	(10$^-$)			
712	2546.2+x	(15$^-$)	1834.1+x	(14$^-$)			
858	2329.1+x	(13$^-$)	1471.0+x	(12$^-$)			
866	1471.0+x	(12$^-$)	605+x	(10$^-$)			
964	2193.1+x	(12$^-$)	1229.0+x	(11$^-$)			

[†] From 1993Cl02, but uncertainties were not given by authors.

[‡] From adopted gammas.

[#] From 1993Cl02 based on $\gamma\gamma(\theta)$. From intensity balances considerations when gating on transitions at the top of each band, the multipolarities are M1 rather than E1. No connecting E2 transitions were observed.

[@] Total theoretical internal conversion coefficients, calculated using the BrIcc code (2008Ki07) with Frozen orbital approximation based on γ-ray energies, assigned multipolarities, and mixing ratios, unless otherwise specified.

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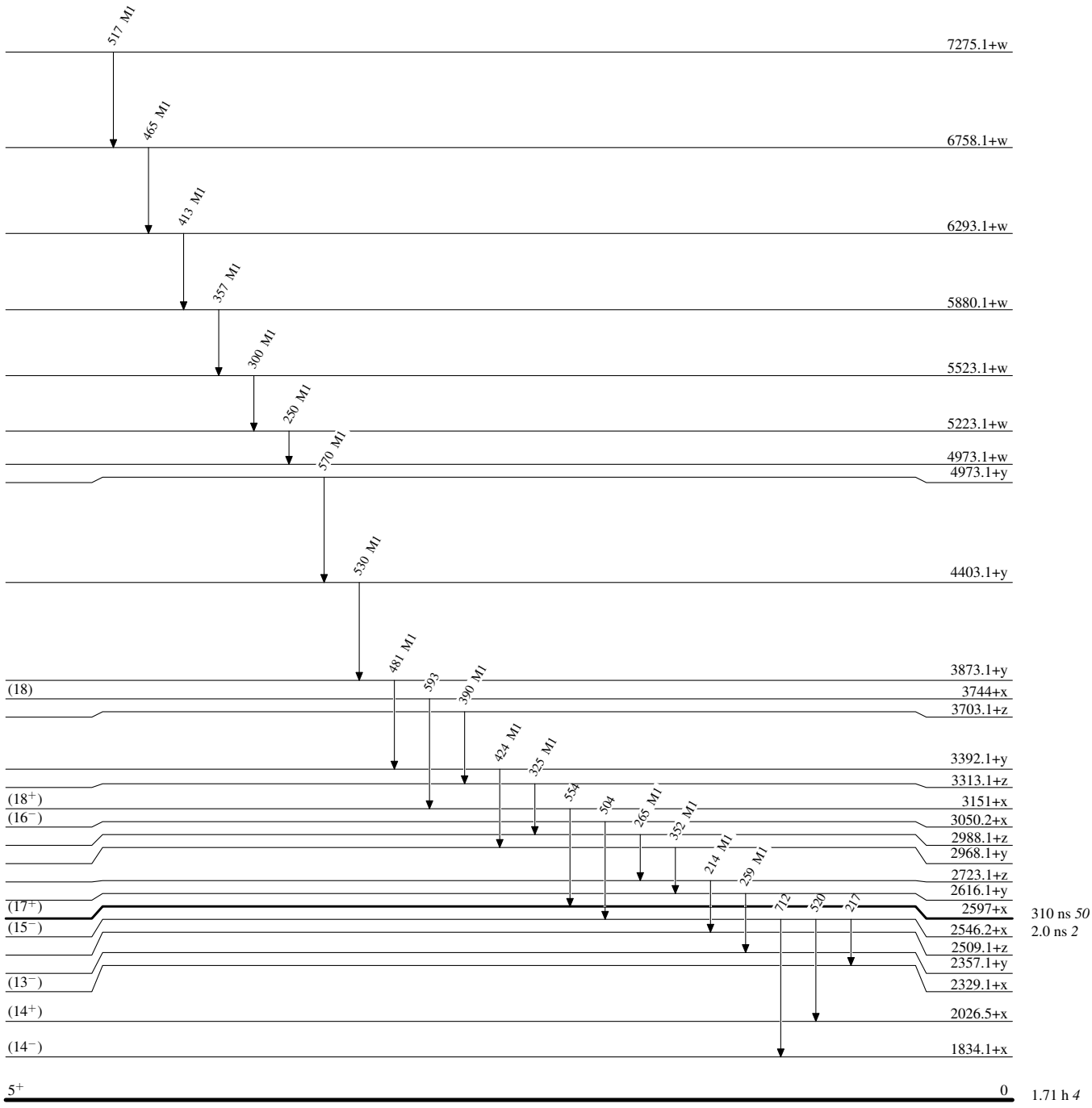
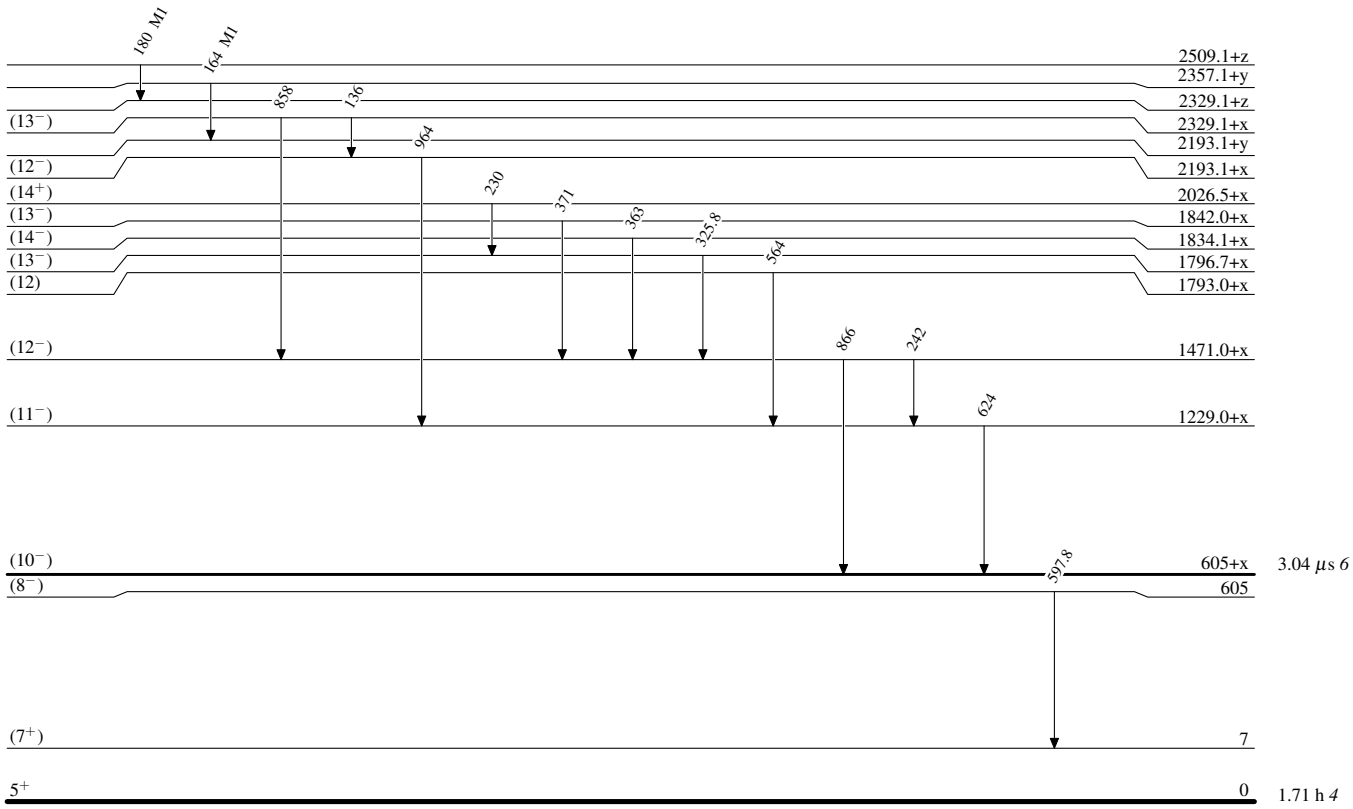
Level Scheme



$^{202}_{83}Bi_{119}$

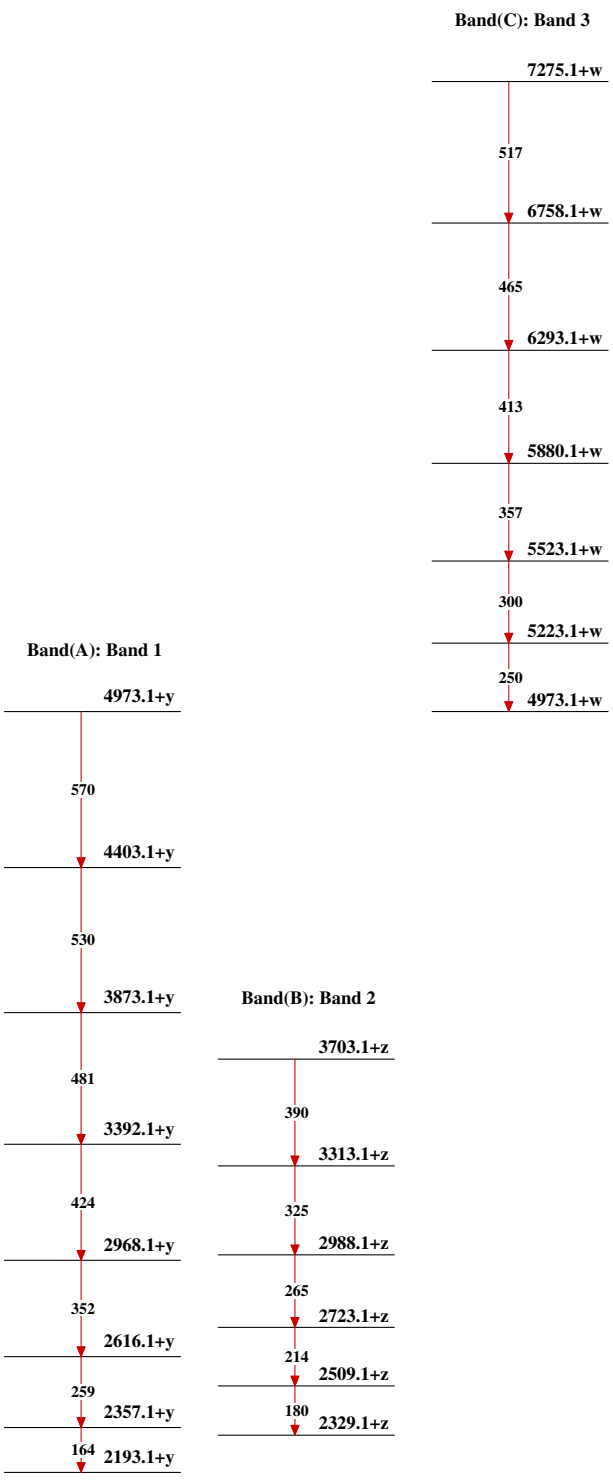
^{196}Pt(^{11}B,5nγ) 1993Cl02

Level Scheme (continued)



$^{202}_{83}Bi_{119}$

$^{196}Pt(^{11}B,5n\gamma)$ 1993Cl02



$^{202}_{83}Bi_{119}$