^{194}Pt(γ,γ') 2003Li02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 177, 1 (2021)	3-Sep-2021

2003Li02: E=4.5 MeV bremsstrahlung beam was produced from the superconducting Darmstadt electron linear accelerator S_DALINAC. Target was 3 g 99.0% enriched ^{194}Pt sandwiched between aluminum disks. γ rays were detected with the EUROBALL cluster detectors. Measured Eγ, Iγ, $\gamma\gamma(\theta)$, elastic scattering cross sections. Deduced levels, J, branching ratios, transition strengths. Comparisons with theoretical calculations.

^{194}Pt Levels

The B(M1)↑ value was determined assuming negligible transition to the 328.5 level (2003Li02).

E(level)[†]	J$^{\pi}$[‡]	σ (eV b)[#]	Comments
0.0	0^+		
328.5	2^+		
622.0	2^+		
2517.2 *4*	1	6.0 *8*	B(M1)↑=0.054 *7*
2577.3 *4*	1	7.5 *10*	B(M1)↑=0.065 *9*
2720.2 *5*	1	3.9 *5*	B(M1)↑=0.032 *4*
3000.1 *3*	1	16.2 *13*	B(M1)↑=0.122 *40*
3014.8 *3*	1	14.8 *9*	B(M1)↑=0.171 *13*
3078.8 *3*	1	12.0 *8*	B(M1)↑=0.087 *8*
3141.1 *4*	1	5.9 *6*	B(M1)↑=0.042 *5*
3351.3 *3*	1	8.5 *6*	B(M1)↑=0.073 *11*
3375.2 *2*	1	7.9 *6*	B(M1)↑=0.118 *12*
3383.0 *4*	1	6.1 *6*	B(M1)↑=0.041 *8*
3417.1 *3*	1	29.8 *20*	B(M1)↑=0.196 *34*
3421.4 *5*	1	7.4 *12*	B(M1)↑=0.049 *11*
3427.7 *4*	1	5.8 *6*	B(M1)↑=0.038 *7*
3459.3 *4*	1	9.8 *7*	B(M1)↑=0.064 *11*
3465.2 *7*	1	2.3 *4*	B(M1)↑=0.015 *4*
3477.0 *4*	1	4.6 *5*	B(M1)↑=0.030 *6*
3497.9 *6*	1	2.3 *4*	B(M1)↑=0.015 *4*
3545.3 *5*	1	4.8 *6*	B(M1)↑=0.030 *6*
3697.4 *5*	1	3.1 *6*	B(M1)↑=0.019 *5*
3703.3 *4*	1	7.7 *8*	B(M1)↑=0.047 *9*
3717.0 *4*	1	4.4 *6*	B(M1)↑=0.027 *6*
3726.8 *4*	1	4.1 *7*	B(M1)↑=0.025 *6*
3747.1 *6*	1	6.5 *7*	B(M1)↑=0.039 *8*
3813.6 *4*	1	10.5 *10*	B(M1)↑=0.062 *12*
3890.2 *4*	1	6.5 *8*	B(M1)↑=0.038 *8*

[†] From a least-squares fit to γ-ray energies.
[‡] Spin from $\gamma\gamma(\theta)$ in 2003Li02.
[#] Elastic scattering cross section.

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$\gamma(^{194}Pt)$

E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π	E_i(level)	J_i^π	E_γ	I_γ	E_f	J_f^π
2517.2	1	2188.7†	<35	328.5	2^+	3427.7	1	3099.2†	<25	328.5	2^+
		2517.2 *4*	100	0.0	0^+			3427.7 *4*	100	0.0	0^+
2577.3	1	2248.8†	<28	328.5	2^+	3459.3	1	3130.8†	<16	328.5	2^+
		2577.3 *4*	100	0.0	0^+			3459.3 *4*	100	0.0	0^+
2720.2	1	2391.7†	<52	328.5	2^+	3465.2	1	3136.7†	<72	328.5	2^+
		2720.2 *5*	100	0.0	0^+			3465.2 *7*	100	0.0	0^+
3000.1	1	2671.6†	<10	328.5	2^+	3477.0	1	3148.5†	<36	328.5	2^+
		3000.1 *3*	100	0.0	0^+			3477.0 *4*	100	0.0	0^+
3014.8	1	2686.3	55 *8*	328.5	2^+	3497.9	1	3169.4†	<64	328.5	2^+
		3014.8 *3*	100	0.0	0^+			3497.9 *6*	100	0.0	0^+
3078.8	1	2750.3†	<15	328.5	2^+	3545.3	1	3216.8†	<33	328.5	2^+
		3078.8 *3*	100	0.0	0^+			3545.3 *5*	100	0.0	0^+
3141.1	1	2812.6†	<26	328.5	2^+	3697.4	1	3369.0†	<52	328.5	2^+
		3141.1 *4*	100	0.0	0^+			3697.4 *5*	100	0.0	0^+
3351.3	1	3022.8	27 *17*	328.5	2^+	3703.3	1	3703.3 *4*		0.0	0^+
		3351.3 *3*	100	0.0	0^+	3717.0	1	3388.5†	<36	328.5	2^+
3375.2	1	2753.2	128 *16*	622.0	2^+			3717.0 *4*	100	0.0	0^+
		3375.2 *3*	100	0.0	0^+	3726.8	1	3726.8 *4*		0.0	0^+
3383.0	1	3054.5†	<23	328.5	2^+	3747.1	1	3418.6†	<26	328.5	2^+
		3383.0 *4*	100	0.0	0^+			3747.1 *6*	100	0.0	0^+
3417.1	1	3088.6†	<6	328.5	2^+	3813.6	1	3485.1†	<16	328.5	2^+
		3417.1 *3*	100	0.0	0^+			3813.6 *4*	100	0.0	0^+
3421.4	1	3092.9†	<18	328.5	2^+	3890.2	1	3561.7†	<30	328.5	2^+
		3421.4 *5*	100	0.0	0^+			3890.2 *4*	100	0.0	0^+

† Placement of transition in the level scheme is uncertain.

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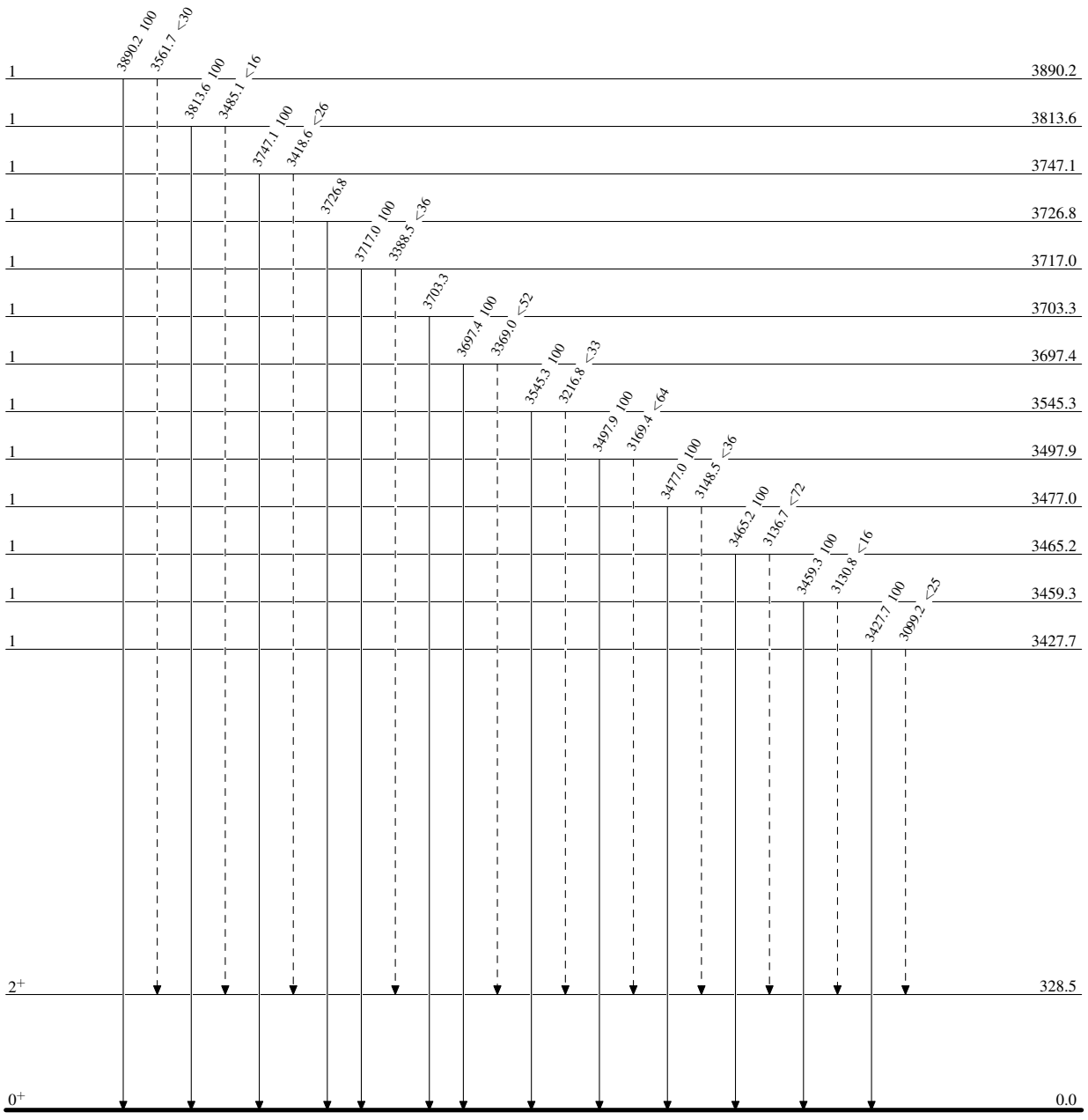
Legend

Level Scheme

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



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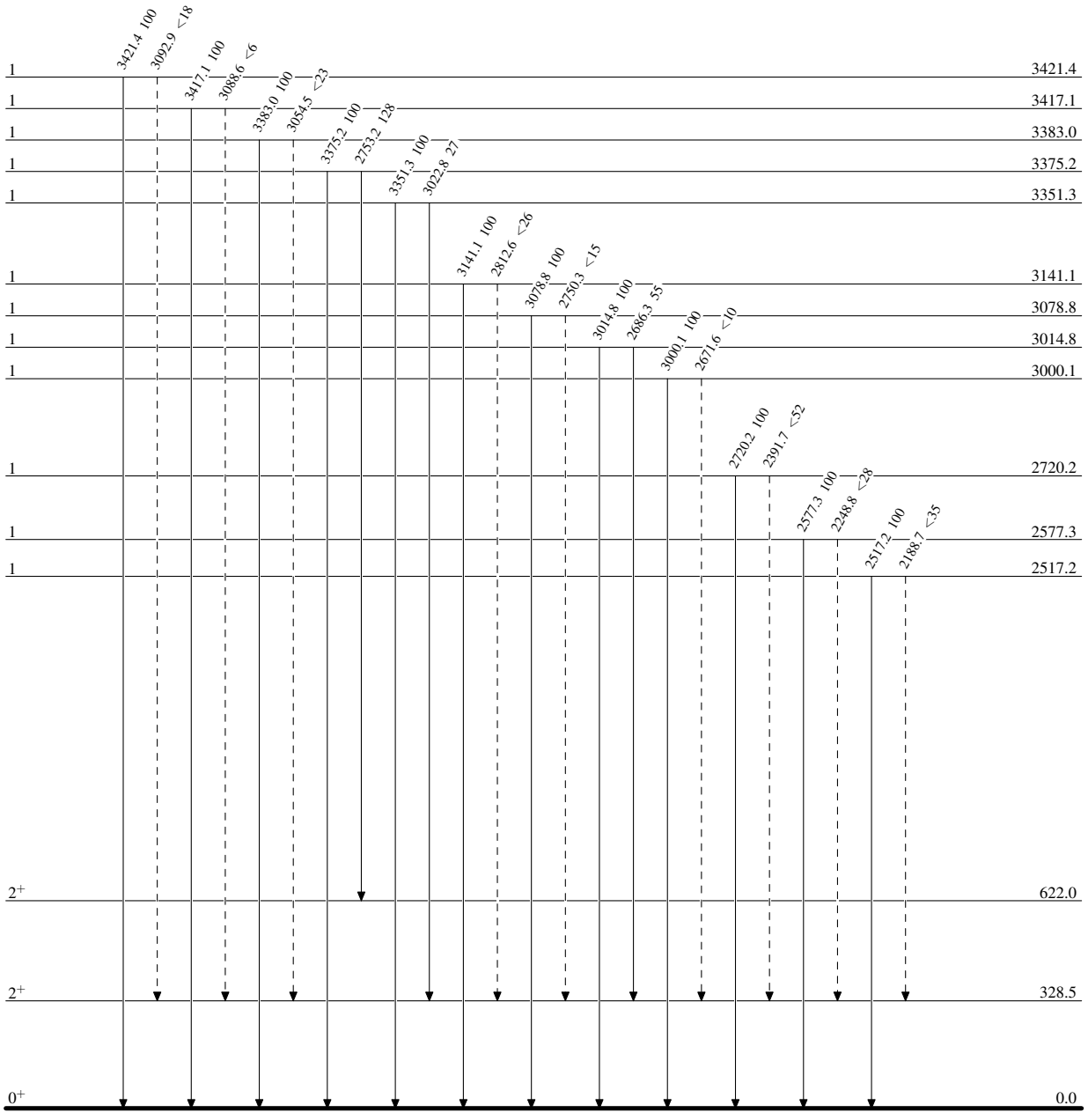
Legend

Level Scheme (continued)

Intensities: Relative photon branching from each level

– – – – – – ► γ Decay (Uncertain)



$^{194}_{78}Pt_{116}$