^{248}Cm(^{209}Bi,^{211}Biγ) 2019Sh34,2002AbZV

History			
Type	Author	Citation	Literature Cutoff Date
Full Evaluation	C. D. Nesaraja	NDS 198,449 (2024)	31-Jul-2022

2019Sh34: 2 neutron transfer reaction with heavy ion was used to populate the K isomer. E(^{209}Bi)=1450 MeV from the ATLAS superconducting heavy-ion accelerator at Argonne National Laboratory impinged a 200 μg/cm^2 ^{248}Cm target. Gamma rays were measured using the Gammasphere array consisting of 101 Compton-suppressed HPGe detectors. Measured Eγ, Iγ, $\gamma\gamma$, $\gamma\gamma$(t). Time distribution of γ rays depopulating the K=8$^-$ isomer was done by utilizing the different beam off time intervals. Deduced $T_{1/2}$ of the K=8$^-$ isomer.

2002AbZV: ^{209}Bi beam with E=1450 MeV which is about 10-15% above the Coulomb barrier was produced at the ATLAS superconducting linear accelerator at Argonne National Laboratory The ^{209}Bi beam was used to bombard the ^{248}Cm target Gammas were measured using the Gammasphere array of 101 Compton-suppressed Ge spectrometers.

^{246}Cm Levels

E(level)†	J$^\pi$‡	$T_{1/2}$	Comments
0.0#	0$^+$		
42.9# *10*	2$^+$		
142.1# *15*	4$^+$		
295.4# *16*	6$^+$		
500.4# *17*	8$^+$		
753.2# *20*	10$^+$		
923.3 *17*	4$^-$		
980.7 *16*	5$^-$		
1050.0# *23*	12$^+$		
1051.5 *17*	6$^-$		
1129.1 *17*	7$^-$		
1179.5 *18*	8$^-$	1.12 s *24*	$T_{1/2}$: from summed double coincidence intensities of 679γ, 153γ, 205γ(t) (2019Sh34). Configuration=7/2[624]⊗9/2[734] (2019Sh34).
1387.0# *25*	14$^+$		
1760# *3*	16$^+$		
2165# *3*	18$^+$		
2598# *3*	20$^+$		
3056# *4*	22$^+$		
3535# *4*	24$^+$		
4033# *4*	26$^+$		

† From least-squares fit to Eγ data by the evaluator. No uncertainties are available for the Eγ data. The least square fit is performed with the assumption that the uncertainties are the same for all the Eγ data.
‡ From rotational structure.
# Band(A): g.s. rotational band.

γ(^{246}Cm)

E$_\gamma$	E$_i$(level)	J$_i^\pi$	E$_f$	J$_f^\pi$
42.9†	42.9	2$^+$	0.0	0$^+$
99.2†	142.1	4$^+$	42.9	2$^+$
128.0†	1179.5	8$^-$	1051.5	6$^-$
128.2†	1051.5	6$^-$	923.3	4$^-$

Continued on next page (footnotes at end of table)

^{248}Cm(^{209}Bi,^{211}Biγ) 2019Sh34,2002AbZV (continued)

γ(^{246}Cm) (continued)

E_γ	E_i(level)	J_i^π	E_f	J_f^π	Comments
148.5†	1129.1	7^-	980.7	5^-	
153.4†	295.4	6^+	142.1	4^+	E_γ: Other: 153.1 (2002AbZV).
205.0†	500.4	8^+	295.4	6^+	E_γ: Other: 204.6 (2002AbZV).
252.8‡	753.2	10^+	500.4	8^+	
296.8‡	1050.0	12^+	753.2	10^+	
337.0‡	1387.0	14^+	1050.0	12^+	
373.1‡	1760	16^+	1387.0	14^+	
404.9‡	2165	18^+	1760	16^+	
433.0‡	2598	20^+	2165	18^+	
457.9‡	3056	22^+	2598	20^+	
479.1‡	3535	24^+	3056	22^+	
498.1	4033	26^+	3535	24^+	
628.8†	1129.1	7^-	500.4	8^+	
679.2†	1179.5	8^-	500.4	8^+	
685.3†	980.7	5^-	295.4	6^+	
756.0†	1051.5	6^-	295.4	6^+	
781.2†	923.3	4^-	142.1	4^+	
833.6†	1129.1	7^-	295.4	6^+	
838.5†	980.7	5^-	142.1	4^+	

† From 2019Sh34.
‡ From 2002AbZV.

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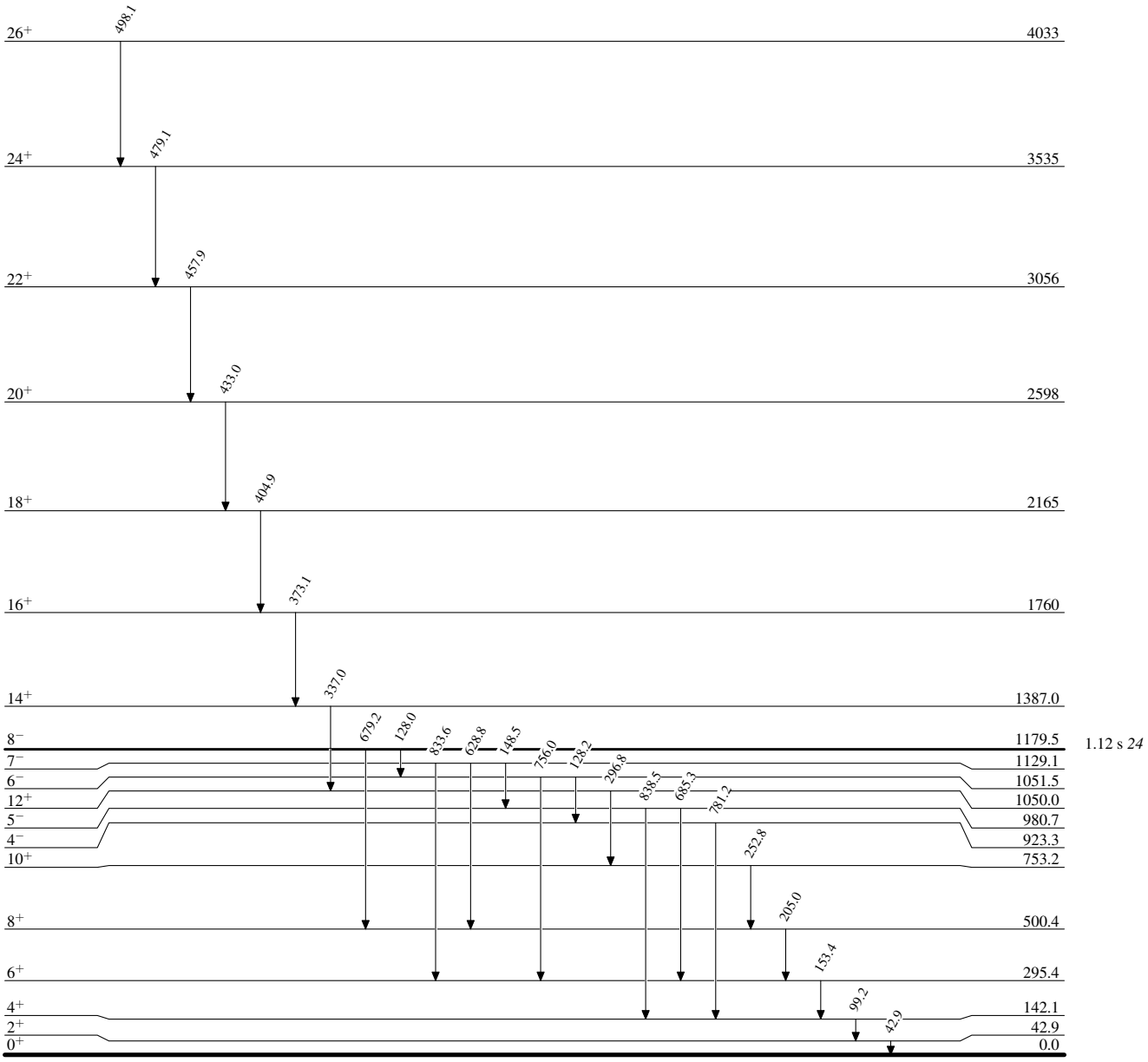
Level Scheme



$^{246}_{96}Cm_{150}$

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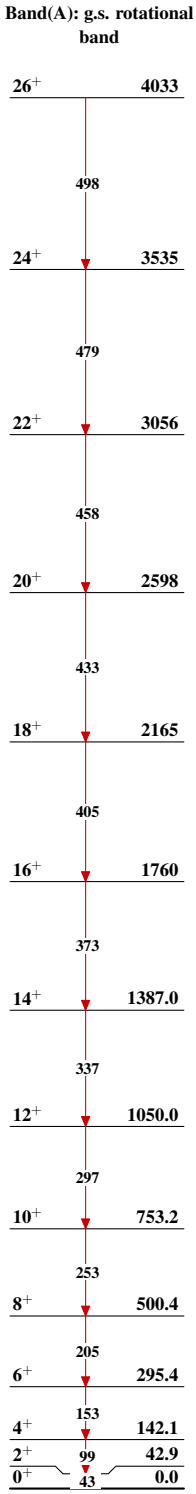

$^{246}_{96}Cm_{150}$