^{208}Pb(^{9}Be,αnγ) 1987Po14

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Auranen and E. A. Mccutchan	NDS 168, 117 (2020)	1-Aug-2020

E(^{9}Be)=45-57 MeV. Measured excitation function, Eγ, Iγ, Ice, $\gamma\gamma$, γ(t), $\gamma\gamma$(t), and $\gamma(\theta)$.

^{212}Po Levels

E(level)[†]	J$^{\pi}$[‡]	T$_{1/2}$[@]	Comments
0.0	0^{+}[#]		
727.20 *10*	2^{+}[#]		
1132.40 *14*	4^{+}[#]		
1355.40 *17*	6^{+}[#]	0.76 ns *21*	
1476.30 *20*	8^{+}[#]	17.1 ns *2*	
1536.70 *14*	3		
1752.80 *22*	(8^{-})		
1788.00 *20*	(6^{-})		
1833.80 *22*	10^{+}	0.55 ns *14*	
1945.70 *17*	(4)		
1987.50 *22*	(8)		
2016.90 *20*	(6)		
2102.50 *17*	5		
2228.60 *20*	7		
2411.20 *24*	(11^{-})		J$^{\pi}$: $\gamma(\theta)$ rules out ΔJ=2 Q transition to 10^{+} level.
2471.40 *24*	(9^{-})		
2583.2 *3*			
2702.10 *24*	(12^{+})		
2771.7 *4*	(13^{-})		
2885.4 *4*	(14^{+})		J$^{\pi}$: $\gamma(\theta)$ rules out ΔJ=2 Q transition to (13^{-}) level.

[†] From a least-squares fit to Eγ data.
[‡] From the Adopted Levels.
[#] Probable configuration=((π h$_{9/2}$)$^{+2}$(ν g$_{9/2}$)$^{+2}$) with leading component configuration=((π h$_{9/2}$)$^{+2}_{0+}$(ν g$_{9/2}$)$^{+2}_{J+}$).
[@] From γ(t) (1987Po14).

γ(^{212}Po)

The conversion coefficients were measured from intensity balances using data from coincidence or delayed γ-ray spectra.

E$_{\gamma}$	I$_{\gamma}$[†]	E$_i$(level)	J$_i^{\pi}$	E$_f$	J$_f^{\pi}$	Mult.	Comments
113.7 *1*	0.5 *2*	2885.4	(14^{+})	2771.7	(13^{-})	(E1)	Mult.: from intensity balance in level scheme.
120.9 *1*	7.8 *3*	1476.30	8^{+}	1355.40	6^{+}	E2	Mult.: from $\gamma(\theta)$; α(exp)=3.1 *1*.
172.0 *1*	0.4 *1*	2583.2		2411.20	(11^{-})		
223.0 *1*	40.4 *6*	1355.40	6^{+}	1132.40	4^{+}	E2	Mult.: from $\gamma(\theta)$; α(exp)=0.30 *1*.
276.5 *1*	5.2 *3*	1752.80	(8^{-})	1476.30	8^{+}		
357.5 *1*	14.9 *8*	1833.80	10^{+}	1476.30	8^{+}	E2	Mult.: from $\gamma(\theta)$ J to J-2 transition; α(exp)<0.12, α(L)exp<0.16.
360.5 *3*	1.3 *3*	2771.7	(13^{-})	2411.20	(11^{-})		
405.2 *1*	70.3 *15*	1132.40	4^{+}	727.20	2^{+}	E2	Mult.: from $\gamma(\theta)$; α(exp)=0.08 *3*, α(K)exp=0.033 *4*, α(L)exp=0.011 *3*.
432.6 *1*	4.5 *3*	1788.00	(6^{-})	1355.40	6^{+}		
511.2 *1*	2.8 *3*	1987.50	(8)	1476.30	8^{+}		

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^{208}Pb(^{9}Be,αnγ) 1987Po14 (continued)

$\gamma(^{212}Po)$ (continued)

E_γ	I_γ [†]	E_i(level)	J_i^π	E_f	J_f^π	Mult.	Comments
577.4 *1*	5.0 *5*	2411.20	(11^-)	1833.80	10^+	D	Mult.: from $\gamma(\theta)$.
661.5 *1*	3.0 *3*	2016.90	(6)	1355.40	6^+		
718.6 *1*	1.1 *3*	2471.40	(9^-)	1752.80	(8^-)		
727.2 *1*	100	727.20	2^+	0.0	0^+	E2	Mult.: from $\gamma(\theta)$; α(K)exp=0.012 *1*, α(L)exp=0.003 *1*.
809.5 *1*	5.1 *4*	1536.70	3	727.20	2^+		
813.3 *1*	2.3 *3*	1945.70	(4)	1132.40	4^+		
868.3 *1*	2.8 *3*	2702.10	(12^+)	1833.80	10^+		
873.2 *1*	1.5 *2*	2228.60	7	1355.40	6^+		
970.1 *1*	2.4 *4*	2102.50	5	1132.40	4^+		

[†] Relative intensities at E(^{9}Be)=48 MeV, normalized to Iγ(727.2γ)=100.

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Level Scheme

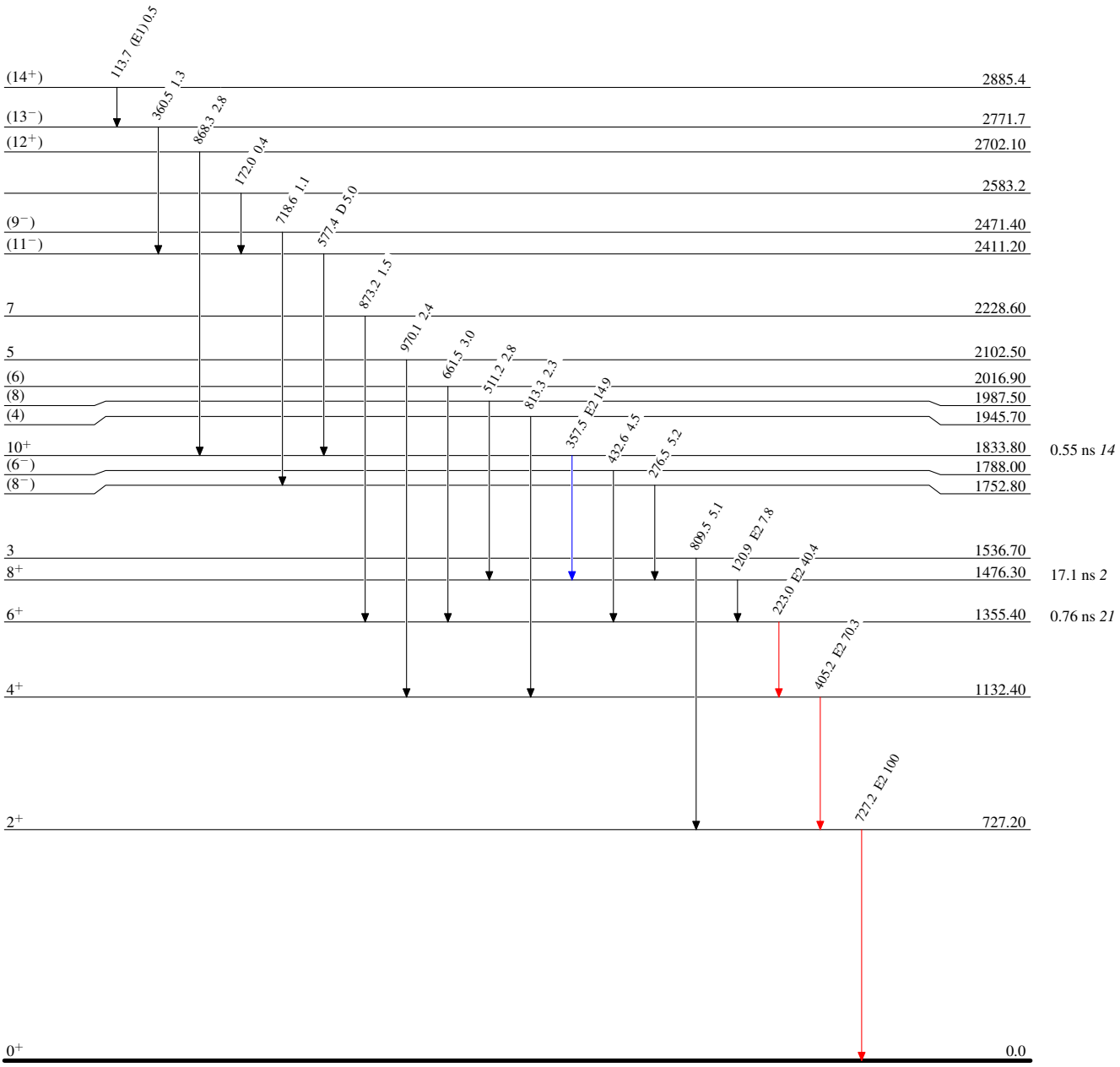
Intensities: Relative I_γ

Legend

$I_\gamma < 2\% \times I_\gamma^{max}$

$I_\gamma < 10\% \times I_\gamma^{max}$

$I_\gamma > 10\% \times I_\gamma^{max}$



$^{212}_{84}Po_{128}$