^{208}Pb(^{18}O,Fγ) 2006Po09

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	T. D. Johnson and W. D. Kulp(a)	NDS 129, 1 (2015)	27-Jul-2015

^{208}Pb(^{18}O,Fγ) with beam energy E=85 MeV. Measured Eγ, Iγ, γγ, γγ(θ), using Euroball IV array.

^{87}Kr Levels

E(level)	Jπ‡	E(level)	Jπ‡	E(level)	Jπ‡	E(level)	Jπ‡
0†	5/2+	2258.4 *3*	(11/2−)	4357.6 *6*	(17/2−)	5519.6 *7*	(23/2−)
1419.80† *25*	(7/2+)	2614.2† *4*	(13/2+)	4372.1 *8*	(17/2+)	6300.6 *8*	
1577.53 *25*	(9/2+)	3525.0 *4*	(15/2−)	4529.9 *5*	(19/2−)		
1841.3† *3*	(9/2+)	3914.0† *4*	(15/2+)	5307.1 *13*			
2105.0† *3*	(11/2+)	4087.9 *4*	(17/2−)	5436.0 *7*	(21/2−)		

† Band(A): γ sequence.
‡ Suggested spins based on expected population of only yrast states in fusion-fission reaction and assuming increasing J with excitation energy.

γ(^{87}Kr)

Eγ	Iγ	Ei(level)	Jiπ	Ef	Jfπ	Mult.	α#	Comments
172.7@ *3*	0.4 *2*	4529.9	(19/2−)	4357.6	(17/2−)			
173.9 *2*	3.2 *9*	4087.9	(17/2−)	3914.0	(15/2+)			
263.6 *2*	27 *3*	2105.0	(11/2+)	1841.3	(9/2+)	[M1]‡	0.01005	(263.6γ)(1419.7γ)(θ): R(22°)=0.92 *6*, R(46°)=0.96 *4*, R(75°)=1.00 *4*, (263.6γ)(421.5γ)(θ): R(22°)=1.07 *5*, R(46°)=1.04 *4*, R(75°)=1.00 *4*.
417.1 *3*	2.6 *8*	2258.4	(11/2−)	1841.3	(9/2+)			
421.5 *2*	38 *4*	1841.3	(9/2+)	1419.80	(7/2+)	[M1]‡	0.00320	(421.5γ)(1419.7γ)(θ): R(22°)=0.95 *6*, R(46°)=0.98 *4*, R(75°)=1.00 *4*.
441.8 *3*	5.0 *15*	4529.9	(19/2−)	4087.9	(17/2−)			
509.1 *3*	16 *3*	2614.2	(13/2+)	2105.0	(11/2+)	[M1]‡	0.00205	(509.1γ)(263.6γ)(θ): R(22°)=1.04 *5*, R(46°)=1.02 *4*, R(75°)=1.00 *4*. (509.1γ)(421.5γ)(θ): R(22°)=1.11 *5*, R(46°)=1.05 *4*, R(75°)=1.00 *4*.
527.5 *3*	4.8 *14*	2105.0	(11/2+)	1577.53	(9/2+)			
562.9 *2*	19 *3*	4087.9	(17/2−)	3525.0	(15/2−)			
680.9 *2*	34 *3*	2258.4	(11/2−)	1577.53	(9/2+)	[E1]†	4.72×10^{-4}	(680.9γ)(1577.6γ)(θ): R(22°)=0.94 *6*, R(46°)=0.98 *4*, R(75°)=1.00 *4*.
832.6 *4*	4 *1*	4357.6	(17/2−)	3525.0	(15/2−)			
864.6@ *5*	1.5 *7*	6300.6		5436.0	(21/2−)			
910.8 *3*	8.0 *15*	3525.0	(15/2−)	2614.2	(13/2+)			
935@ *1*	0.4 *2*	5307.1		4372.1	(17/2+)			
989.7 *5*	3 *1*	5519.6	(23/2−)	4529.9	(19/2−)			
1005.2 *4*	5.0 *15*	4529.9	(19/2−)	3525.0	(15/2−)			
1266.6 *3*	23 *5*	3525.0	(15/2−)	2258.4	(11/2−)	[E2]†	3.13×10^{-4}	α(K)=0.000260 *4*; α(L)=2.76×10^{-5} *4*; α(M)=4.46×10^{-6} *7* α(N)=4.50×10^{-7} *7*; α(IPF)=2.03×10^{-5} *3* (1266.6γ)(680.9γ)(θ): R(22°)=0.95

Continued on next page (footnotes at end of table)

^{208}Pb(^{18}O,Fγ) 2006Po09 (continued)

$\gamma(^{87}Kr)$ (continued)

E_γ	I_γ	E_i(level)	J_i^π	E_f	J_f^π	Mult.	α[#]	Comments
								6, R(46°)=0.97 *4*, R(75°)=1.00 *4*. (1266.6γ)(1577.6γ)(θ): R(22°)=1.08 *6*, R(46°)=1.04 *4*, R(75°)=1.00 *4*.
1299.7 *4*	3.8 *9*	3914.0	(15/2$^+$)	2614.2	(13/2$^+$)			
1348.1 *5*	3.1 *9*	5436.0	(21/2$^-$)	4087.9	(17/2$^-$)			
1419.7 *3*	55 *4*	1419.80	(7/2$^+$)	0	5/2$^+$	[E2][‡]	2.88×10^{-4}	
1577.6 *3*	45 *3*	1577.53	(9/2$^+$)	0	5/2$^+$	[E2][†]	3.02×10^{-4}	
1757.9 *7*	1.3 *5*	4372.1	(17/2$^+$)	2614.2	(13/2$^+$)			

[†] From the angular distribution R values, 2006Po09 conclude that the 1578 and 1267 γ transitions have the same character (dipole, or quadrupole), whereas the 681γ has a different character. From its placement in the level scheme, the 681γ must have $\Delta\pi$=yes and is therefore [E1], and the 1578 and 1267γ's [E2].

[‡] From the angular distribution R values, 2006Po09 conclude that the 1420γ transition has different multipolarity than the 264, 421, and 509 γ's all of which have the same character. Based on the systematics of quadrupole transitions with lower energy being less likely close to shell closure, the 264, 421, and 509 γ's are assumed to be [M1], and thus the 1420γ is assumed to be [E2].

[#] Additional information 1.

[@] Placement of transition in the level scheme is uncertain.

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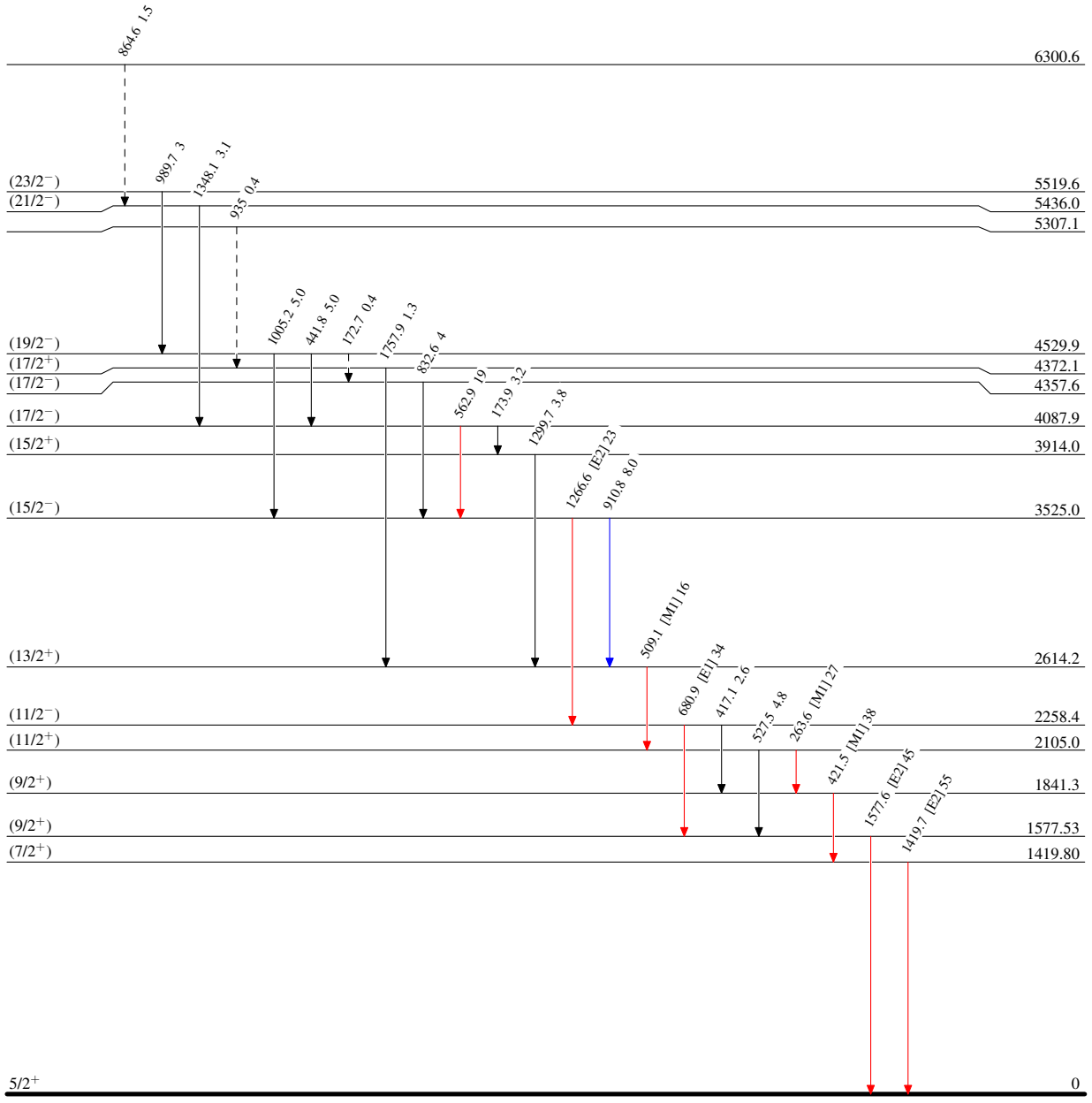
Level Scheme

Intensities: Relative I_γ

Legend

- $I_\gamma < 2\% \times I_\gamma^{max}$
- $I_\gamma < 10\% \times I_\gamma^{max}$
- $I_\gamma > 10\% \times I_\gamma^{max}$
- γ Decay (Uncertain)



$^{87}_{36}Kr_{51}$

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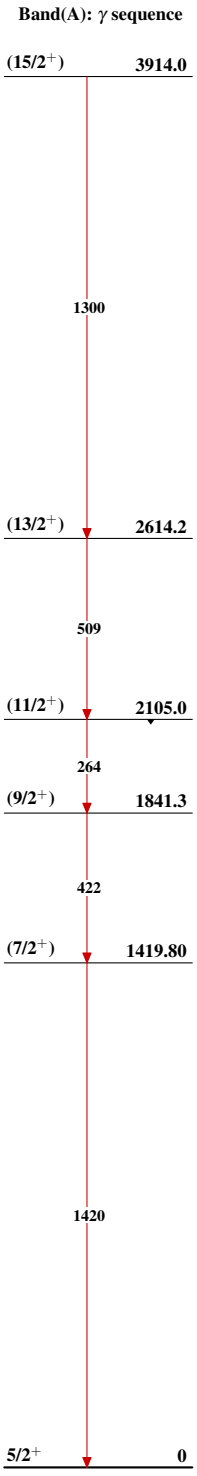

$^{87}_{36}Kr_{51}$