^{204}Pb(d,pγ) 1997Ra17

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev	NDS 166, 1 (2020)	20-Apr-2020

1997Ra17: E(d)=10 MeV; Target: ^{204}Pb, enriched to 51%; Detectors: five Ge detectors and a single Euroball Cluster detector all with BGO shields. Measured: Eγ, Iγ.

^{205}Pb Levels

E(level)[†]	J$^\pi$[‡]	Comments
0.0[#]	5/2$^-$	
2.96[@] *15*	1/2$^-$	
263.59[&] *13*	3/2$^-$	
576.72[a] *13*	3/2$^-$	
703.67[a] *10*	7/2$^-$	
761.97[a] *14*	5/2$^-$	
803.35[a] *13*	(1/2,3/2)$^-$	
986.84[a] *18*	9/2$^-$	
1044.12 *20*	7/2$^-$	
1265.61 *18*	5/2$^-$	
1576.24 *13*	9/2$^-$	J$^\pi$: From Adopted Levels. J^π=(7/2)$^-$ in 1997Ra17.
1594.3 *4*	9/2$^+$	
1705.48 *22*	(7/2,9/2)$^-$	
1776.78 *22*	7/2$^-$	
1919.8 *4*	(1/2$^-$,3/2$^-$)	
2252.5 *6*	(7/2,9/2)$^+$	
2565.58 *22*	9/2$^+$	
2607.18 *14*	9/2$^+$	
2707.96 *14*	(9/2)$^+$	
3482.01 *24*		
4116.73 *16*		
4320.54 *23*		
4338.01 *16*		
4447.4 *4*		
4490.85 *18*		
4533.09 *16*		
4552.36 *21*		
4583.93 *22*		
4995.5 *4*		
5076.64 *24*		
5173.0 *20*		
5204.48 *17*		
5256.7 *6*		

[†] From a least-squares fit to Eγ.
[‡] From 1997Ra17, unless otherwise stated.
[#] configuration=$\nu(f_{5/2}^{-1})$.
[@] configuration=$\nu(p_{1/2}^{-1})$.
[&] configuration=$\nu(p_{3/2}^{-1})$.
[a] Dominant configuration=$\nu(f_{5/2}^{-1})\otimes 2^+$.

^{204}Pb(d,pγ) 1997Ra17 (continued)

$\gamma(^{205}Pb)$

E_γ[†]	I_γ[†]	E_i(level)	J_i^π	E_f	J_f^π	Comments
185.2 *1*	10.6 *21*	761.97	$5/2^-$	576.72	$3/2^-$	
227.0[‡] *1*	10[‡] *4*	803.35	$(1/2,3/2)^-$	576.72	$3/2^-$	
260.6[‡] *1*	100[‡] *30*	263.59	$3/2^-$	2.96	$1/2^-$	I_γ: Branching ratio, as given by 1997Ra17.
263.3[‡] *3*	35[‡] *11*	263.59	$3/2^-$	0.0	$5/2^-$	I_γ: Branching ratio, as given by 1997Ra17.
282.6[‡] *2*	24[‡] *9*	986.84	$9/2^-$	703.67	$7/2^-$	
314.2[‡] *2*	33[‡] *12*	576.72	$3/2^-$	263.59	$3/2^-$	
539.6 *1*	42 *8*	803.35	$(1/2,3/2)^-$	263.59	$3/2^-$	
550.2 *3*	170 *17*	1594.3	$9/2^+$	1044.12	$7/2^-$	
574.2[‡] *3*	0.333×10^3[‡] *12*	576.72	$3/2^-$	2.96	$1/2^-$	
576.8[‡] *5*	103[‡] *39*	576.72	$3/2^-$	0.0	$5/2^-$	
689.3 *3*	65 *7*	1265.61	$5/2^-$	576.72	$3/2^-$	
703.6[‡] *1*	0.669×10^3[‡] *13*	703.67	$7/2^-$	0.0	$5/2^-$	
759.1[‡] *2*	177[‡] *56*	761.97	$5/2^-$	2.96	$1/2^-$	
762.1[‡] *4*	83[‡] *30*	761.97	$5/2^-$	0.0	$5/2^-$	
778	37 *5*	1044.12	$7/2^-$	263.59	$3/2^-$	
803.4[‡] *2*	<41[‡]	803.35	$(1/2,3/2)^-$	0.0	$5/2^-$	
813.9 *3*	17.7 *18*	1576.24	$9/2^-$	761.97	$5/2^-$	
872.6 *1*	5.3 *18*	1576.24	$9/2^-$	703.67	$7/2^-$	
988.1 *3*	294 *33*	986.84	$9/2^-$	0.0	$5/2^-$	
1001.8[‡] *2*	66[‡] *21*	1265.61	$5/2^-$	263.59	$3/2^-$	
1001.8[‡] *2*	22[‡] *7*	1705.48	$(7/2,9/2)^-$	703.67	$7/2^-$	
1014.9 *2*	15 *3*	1776.78	$7/2^-$	761.97	$5/2^-$	
1044.1 *2*	370 *44*	1044.12	$7/2^-$	0.0	$5/2^-$	
1208.4 *5*	17 *6*	2252.5	$(7/2,9/2)^+$	1044.12	$7/2^-$	
1265.7 *3*	40 *5*	1265.61	$5/2^-$	0.0	$5/2^-$	
1656.2[‡] *3*	30[‡] *10*	1919.8	$(1/2^-,3/2^-)$	263.59	$3/2^-$	
1661[‡]	32[‡] *13*	2707.96	$(9/2)^+$	1044.12	$7/2^-$	
1776.2 *5*	146 *30*	1776.78	$7/2^-$	0.0	$5/2^-$	
1861.9 *2*	56 *6*	2565.58	$9/2^+$	703.67	$7/2^-$	
1903.5 *1*	51 *17*	2607.18	$9/2^+$	703.67	$7/2^-$	
2004.3 *1*	112 *23*	2707.96	$(9/2)^+$	703.67	$7/2^-$	
3218.4 *2*	55 *6*	3482.01		263.59	$3/2^-$	
3403.3 *3*	17 *2*	4447.4		1044.12	$7/2^-$	
3684[‡]	153[‡] *15*	4490.85		803.35	$(1/2,3/2)^-$	
3730.7[‡] *2*	138[‡] *28*	4533.09		803.35	$(1/2,3/2)^-$	
3760.2 *3*	44 *5*	4338.01		576.72	$3/2^-$	
3853.1 *1*	50 *17*	4116.73		263.59	$3/2^-$	
3914.5 *3*	24 *5*	4490.85		576.72	$3/2^-$	
3975.8 *3*	41 *8*	4552.36		576.72	$3/2^-$	
4057.3 *3*	29 *10*	4320.54		263.59	$3/2^-$	
4074.5 *1*	292 *33*	4338.01		263.59	$3/2^-$	
4192.1 *3*	60 *6*	4995.5		803.35	$(1/2,3/2)^-$	
4227.4[‡] *2*	0.345×10^3[‡] *11*	4490.85		263.59	$3/2^-$	
4269.2 *1*	64 *13*	4533.09		263.59	$3/2^-$	
4287.7 *10*	46 *10*	4552.36		263.59	$3/2^-$	
4320.1[‡] *3*	62[‡] *28*	4320.54		0.0	$5/2^-$	
4320.1[‡] *3*	112[‡] *40*	4583.93		263.59	$3/2^-$	
4369.6 *20*	27 *3*	5173.0		803.35	$(1/2,3/2)^-$	
4487.6 *2*	479 *54*	4490.85		2.96	$1/2^-$	
4498 *3*	68 *21*	5076.64		576.72	$3/2^-$	

Continued on next page (footnotes at end of table)

^{204}Pb(d,pγ) 1997Ra17 (continued)

$\gamma(^{205}Pb)$ (continued)

E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π	E_γ †	I_γ †	E_i(level)	J_i^π	E_f	J_f^π
4531.7 *20*	237 *49*	4533.09		2.96	1/2$^-$	4813.0 *2*	71 *22*	5076.64		263.59	3/2$^-$
4549.3 *2*	140 *29*	4552.36		2.96	1/2$^-$	4940.9 *10*	65 *20*	5204.48		263.59	3/2$^-$
4581.0 *2*	237 *27*	4583.93		2.96	1/2$^-$	4993.0 *5*	71 *21*	5256.7		263.59	3/2$^-$
4627.7 *1*	67 *21*	5204.48		576.72	3/2$^-$						

† From 1997Ra17. Iγ is from the branching ratios and the level population intensity.
‡ Multiplet. Eγ and Iγ are approximate.

^{204}Pb(d,pγ) 1997Ra17

Level Scheme

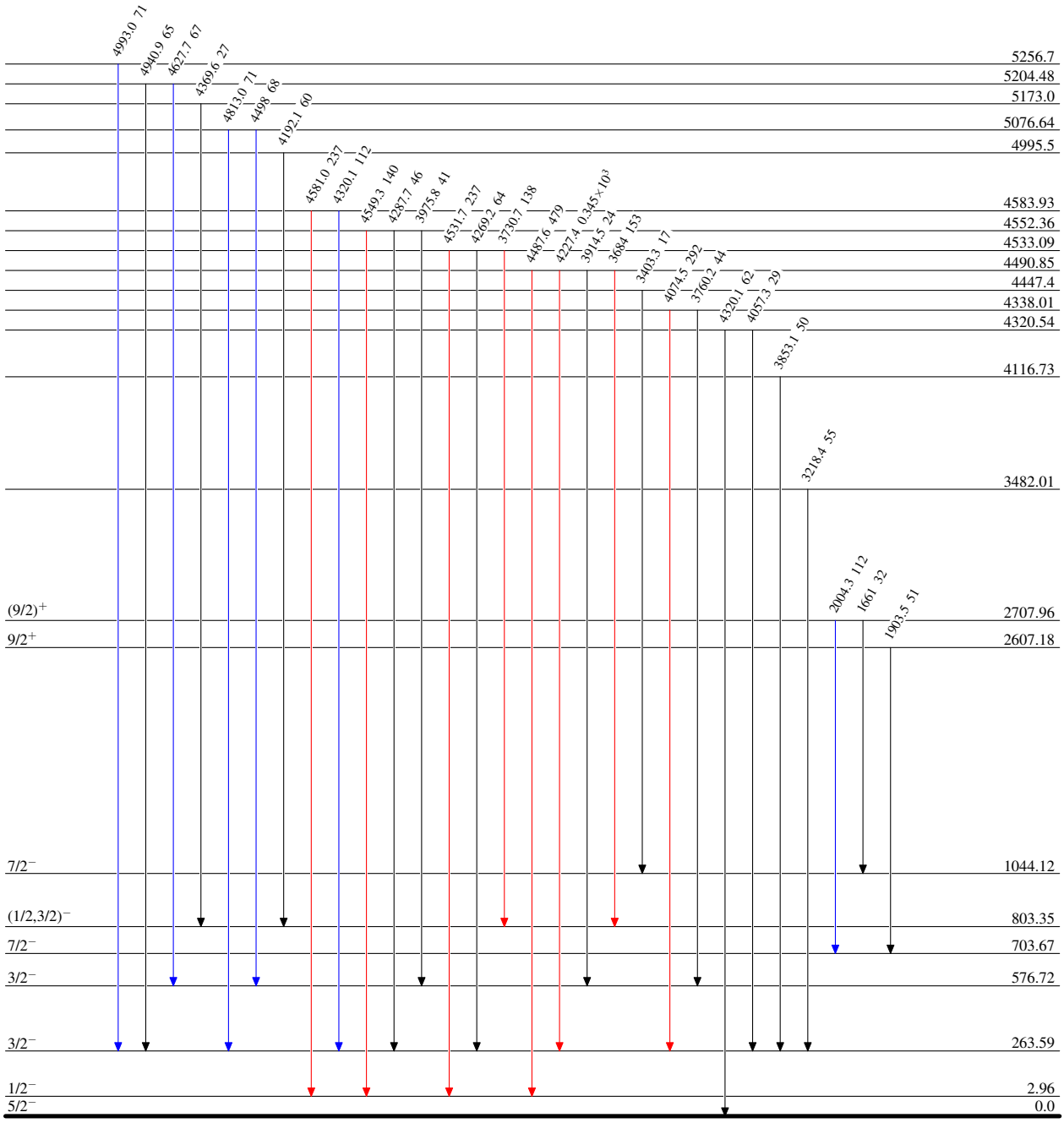
Intensities: Type not specified

Legend

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

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

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

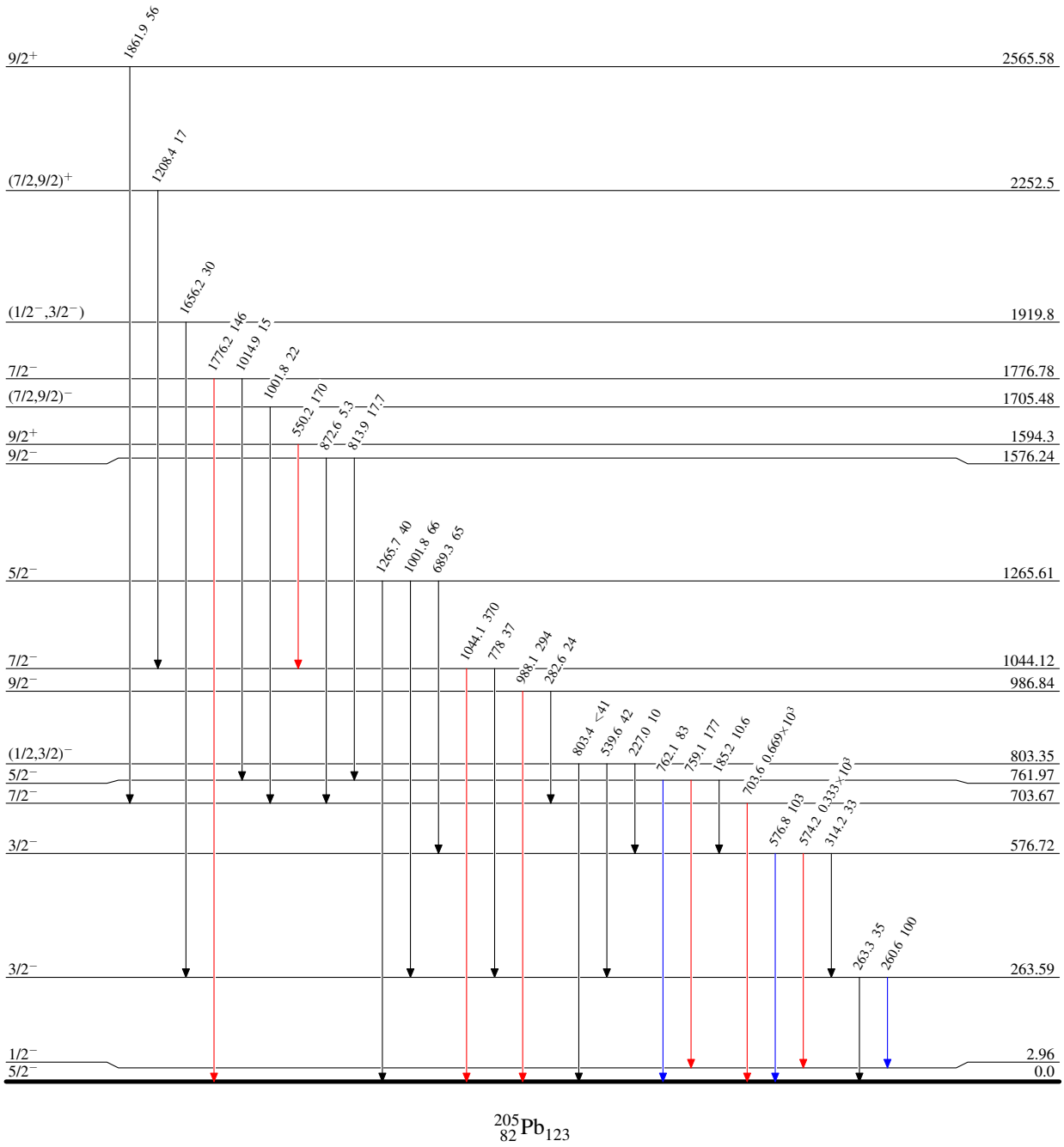


$^{205}_{82}Pb_{123}$

^{204}Pb(d,pγ) 1997Ra17

Level Scheme (continued)

Intensities: Type not specified



$^{205}_{82}Pb_{123}$