^{207}Pb(p,p′) 1975Wa03,1983Ba44

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	F. G. Kondev, S. Lalkovski	NDS 112, 707 (2011)	1-Aug-2010

1975Wa03: Facility: Michigan State University cyclotron; Target: 100 μg/cm^2 and 3 mg/cm^2 enriched to 99.81% in ^{207}Pb; Detectors: 25 μm Kodak photo emulsion, wire proportional counter, Enge split-pole spectrograph, FWHM=5-10 keV, 50 keV; Measured: E, dσ/dΩ; Deduced: E, J^π, DWBA;

1983Ba44: Facility: Univ. of Washington Tandem; Beam: E(pol p)=14.25 to 18.0 MeV, I_c=45-85 nA; Target: 1.1 mg/cm^2 self-suppporting, enriched to 97.2% in ^{206}Pb; Detectors: helium polarimeter, two Si(Li); Measured: E, $\sigma(\theta)$, analyzing power; Isobaric Analog Resonances were also studied.

Others: 1995Ma44, 1994St03, 1982Ba38, 1981Sc11, 1977Sc26, 1974Ra19.

^{207}Pb Levels

Unresolved multiplet structure observed in the region 4700 to 4730 keV (1975Wa03).

E(level)[†]	J$^\pi$[‡]	L[#]	$\Gamma^\lambda_{lj}/\Gamma^{0,lj}_{sp}$[@]	Comments
0.0	1/2$^-$			J$^\pi$: From the Adopted Levels. configuration: $\nu(3p_{1/2})^{-1}$.
570.9[a]	5/2$^-$	2		J$^\pi$: From the Adopted Levels.
898.6[a]	3/2$^-$	2		J$^\pi$: From the Adopted Levels.
1633.7[a]	13/2$^+$	6,7		J$^\pi$: From the Adopted Levels.
2339.8[a]	7/2$^-$[c]	4	0.016	configuration: $\nu(2f_{7/2})^{-1}$ (1983Ba44).
2623.0[a]	5/2$^+$[c]	3	0.004	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44); Also: member of the $\nu(3p_{1/2})^{-1}\otimes 3^-_1$(208PB) doublet (1975Wa03).
2662.6[a]	5/2$^+$,7/2$^+$	3		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 3^-_1$(208PB) doublet (1975Wa03).
2702 *5*				
2727.6[a]	9/2$^+$[c]	5	0.866 *12*	configuration: $\nu(2g_{9/2})^{-1}$ (1983Ba44).
3200 *3*				
3223 *2*	9/2$^+$,11/2$^+$	5		
3384 *2*	(9/2$^+$,11/2$^+$)	(5)		
3413 *2*	7/2$^-$,9/2$^-$	4		
3429 *2*	9/2$^+$[c]	(5)	0.023	configuration: $\nu(2g_{9/2})^{-1}$ (1983Ba44).
3476 *3*	(9/2$^+$,11/2$^+$)	(5)		
3509 *2*	11/2$^+$[c]	(5)	0.51 *3*	configuration: $\nu(1i_{11/2})^{-1}$ (1983Ba44).
3583 *2*	9/2$^+$,11/2$^+$	5		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 5^-_2$(208PB) doublet (1975Wa03).
3620 *2*	11/2$^+$[c]	5	0.420	configuration: $\nu(1i_{11/2})^{-1}$ (1983Ba44); Also: member of the $\nu(3p_{1/2})^{-1}\otimes 5^-_2$(208PB) doublet (1975Wa03).
3634 *2*	5/2$^+$[c]	3	0.084 *4*	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
3650 *3*		≈9		
3672 *3*				
3709 *4*				
3726 *3*	5/2$^+$[c]		0.016	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
3829 *3*	9/2$^+$,11/2$^+$	5		
3857 *4*	13/2,15/2,17/2	7,8		
3869 *2*	(9/2$^+$,11/2$^+$)	(5)		
3887 *3*				
3901 *2*	13/2,15/2,17/2	7,8		
3925[b] *5*				
3986 *2*				
3999 *3*	5/2$^+$[c]		0.013	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
4017 *3*				
4034 *5*	(5/2$^+$,7/2$^+$)	(3)		
4062 *4*				

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^{207}Pb(p,p′) 1975Wa03,1983Ba44 (continued)

^{207}Pb Levels (continued)

E(level)[†]	Jπ[‡]	L[#]	$\Gamma_{lj}^{\lambda}/\Gamma_{sp}^{0,lj}$[@]	Comments
4088 *4*				
4103 *3*	3/2⁻,5/2⁻	2		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 2_1^+$(208PB) doublet (1975Wa03).
4115[&]	15/2⁻[c]		1.32 *18*	configuration: $\nu(1j_{15/2})^{-1}$ (1983Ba44).
4140 *3*	3/2⁻,5/2⁻	2		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 2_1^+$(208PB) doublet (1975Wa03).
4190 *3*	11/2,13/2,15/2	6,7		
4213 *3*	9/2⁺,11/2⁺	5		
4232 *5*				
4250 *4*				
4270 *4*	(11/2⁻,13/2⁻)	(6)		
4287 *6*	7/2⁻,9/2⁻	4		
4313 *4*	7/2⁻,9/2⁻	4		configuration: member of the $\nu(3p_{1/2})^{-}\otimes 4_1^+$(208PB) doublet; No experimental evidence for a doublet structure has been found in 1975Wa03. However, the strength of the transition is observed to be similar to the core excitation from which authors deduce a possible doublet structure.
4319[&]	5/2⁺[c]		0.126	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
4342 *6*	(5/2⁺,7/2⁺)	(3)		
4364 *3*	11/2⁻,13/2⁻	6		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 6_1^+$(208PB) doublet (1975Wa03).
4387 *4*	5/2⁺[c]		0.510 *11*	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
4404 *3*	11/2⁻,13/2⁻	6		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 6_1^+$(208PB) doublet (1975Wa03).
4422 *3*	(3/2⁻,5/2⁻)	(2)		
4465[b] *5*				
4479 *4*				
4494 *5*	(15/2⁻,17/2⁻)	(8)		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 8_1^+$(208PB) doublet (1975Wa03).
4514 *4*				
4527 *4*	(3/2⁻,5/2⁻)	(2)		
4538 *4*	1/2⁺[c]		0.071	configuration: $\nu(4s_{1/2})^{-1}$ (1983Ba44).
4558 *3*				
4581[&]	5/2⁺[c]		0.015	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
4592 *6*				
4612 *3*	5/2⁺[c]		0.011	configuration: $\nu(3d_{5/2})^{-1}$ (1983Ba44).
4627[&]	1/2⁺[c]		0.91 *3*	configuration: $\nu(4s_{1/2})^{-1}$ (1983Ba44).
4630 *3*	(15/2⁻,17/2⁻)	(8)		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 8_1^+$(208PB) doublet (1975Wa03).
4641[&]	1/2⁺[c]		0.064	configuration: $\nu(4s_{1/2})^{-1}$ (1983Ba44).
4656 *5*	3/2⁻,5/2⁻	2		
4671 *3*	(15/2⁻,17/2⁻)	(8)		configuration: member of the $\nu(3p_{1/2})^{-1}\otimes 8_1^+$(208PB) doublet (1975Wa03).
4733 *3*				
4745 *3*	(15/2⁻,17/2⁻)	(8)		L: However, (e,e′) results require L=10.
4761 *4*				
4785 *4*	≥13/2	≥7		
4806 *5*				
4835[b] *6*				
4870 *4*	7/2⁺[c]		0.052 *6*	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
4884 *3*				
4921 *4*				
4943 *4*				
4957 *4*				
4975 *6*				
4985[&]	1/2⁺[c]		0.079	configuration: $\nu(4s_{1/2})^{-1}$ (1983Ba44).
4987[b] *5*	5/2⁺,7/2⁺	3		
5018 *5*		≈9		
5039 *5*		≈9		
5053 *5*	7/2⁺[c]		0.040	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5072[&]	3/2⁺[c]		0.027	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).

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^{207}Pb(p,p′) 1975Wa03,1983Ba44 (continued)

^{207}Pb Levels (continued)

E(level)[†]	Jπ[‡]	L[#]	$\Gamma_{lj}^{\lambda}/\Gamma_{sp}^{0,lj}$[@]	Comments
5080[&]	3/2+[c]		0.036	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5081 *4*	5/2+,7/2+	3		
5117[b] *6*				
5129[b] *5*	3/2+[c]		0.108	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5156 *6*	(5/2+,7/2+)	(3)		
5177[b] *6*	5/2+,7/2+	3		
5181[&]	7/2+[c]		0.380 *18*	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5193 *5*				
5205[&]	3/2+[c]		0.083	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5217 *5*	3/2+[c]		0.631 *15*	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5245 *8*	5/2+,7/2+	3		
5267 *5*	7/2+[c]	3	0.027	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5290 *5*				
5310 *5*	7/2+[c]		0.120 *9*	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5321 *5*	5/2+,7/2+	3		
5336 *5*	5/2+,7/2+	3		
5352 *5*	5/2+,7/2+	3		
5369 *5*	(11/2−,13/2−)	(6)		
5370[&]	7/2+[c]		0.034	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5383 *5*				
5402 *6*				
5428 *5*	7/2+[c]	3	0.094	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5440 *5*	5/2+,7/2+	3		
5454 *5*				
5474 *4*				
5487 *6*				
5493[&]	3/2+[c]		0.020	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5501 *5*	7/2−,9/2−	4		
5503[&]	3/2+[c]		0.037	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5526[b] *4*	(13/2+,15/2+)	(7)		
5537 *5*				
5548 *6*				
5569 *5*	5/2+,7/2+	3		
5575[&]	3/2+[c]		0.045	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5584 *4*				
5598 *5*				
5614 *6*	7/2+[c]	(3)	0.027	configuration: $\nu(2g_{7/2})^{-1}$ (1983Ba44).
5648 *6*				
5668 *5*				
5689 *5*	3/2+[c]		0.018	configuration: $\nu(3d_{3/2})^{-1}$ (1983Ba44).
5702 *6*				
5735 *6*				
5765 *7*				
5803 *6*				
5822 *6*				
5840 *6*				
5868 *6*				
5897 *7*				
5915 *8*				
5934 *7*				
5952 *5*				
5959 *6*				
5998 *6*				
6010 *5*				

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^{207}Pb(p,p′) 1975Wa03,1983Ba44 (continued)

^{207}Pb Levels (continued)

E(level)[†]	Jπ[‡]	L[#]	E(level)[†]	Jπ[‡]	L[#]	E(level)[†]
6031 *6*			6262 *6*			6654 *8*
6041 *7*			6276 *6*	(5/2$^+$,7/2$^+$)	(3)	6670 *8*
6064 *7*			6310 *7*			6716[b] *7*
6073 *6*			6332 *7*			6762[b] *7*
6090 *7*			6360 *5*			6788 *9*
6105 *6*	(5/2$^+$,7/2$^+$)	(3)	6381 *7*			6864 *8*
6146[b] *5*			6402 *6*			6912[b] *8*
6170 *8*	(13/2$^+$,15/2$^+$)	(7)	6449 *7*			6939 *9*
6188[b] *7*	(13/2$^+$,15/2$^+$)	(7)	6483 *8*			6955 *9*
6228 *7*			6547 *8*			7048 *9*
6251 *6*			6627[b] *8*			

† From 1975Wa03, unless otherwise noted.
‡ From L, unless otherwise noted.
# Based on DWBA in 1975Wa03, unless otherwise noted.
@ From 1983Ba44. For β_L values see 1975Wa03.
& From 1983Ba44.
a Used for calibration in 1975Wa03.
b Unresolved multiplet.
c Based on σ and analysing power fits in 1983Ba44.