^{50}Cr(d,p),(pol d,p) 1977Ch12,1977Ba14,1972Ma39

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Wang Jimin and Huang Xiaolong	NDS 144, 1 (2017)	1-Mar-2016

Other: 1968Ro09.
1977Ch12: E=12 MeV, FWHM≈13 keV estimated by the evaluators, measured σ(E(p),θ), analyzed with DWBA.
1977Ba14: E=12.3 MeV, FWHM≈100 keV, polarized beam, measured analyzing powers.
1972Ma39: E=8, 10 MeV, FWHM≈26 keV estimated by the evaluators, measured σ(E(p),θ), DWBA analysis.
1968Ro09: E=7.5 MeV, FWHM≈10 keV estimated by the evaluators, measured σ(E(p),θ), DWBA analysis.

^{51}Cr Levels

E(level)[†]	J$^\pi$[@]	L[#]	C^{2}S′[#]	Comments
0.0	7/2$^-$[&]	3	2.1	
748 *8*	3/2$^-$[a]	1	1.2	
775 *8*	1/2$^-$[a]	1	0.50	
1159 *8*				
1346 *8*	5/2$^-$[&]	3	1.0	
1476 *8*				
1552 *8*	7/2$^-$[&]	3	0.56	
1895 *8*	3/2$^-$[&]	1	0.54	
1998 *8*				
2313 *8*	(7/2)$^-$[b]	3	0.07	
2382 *8*				
2705 *8*				
2761 *8*	1/2$^+$	0	0.03	C^{2}S′: from 1972Ma39 and 1968Ro09.
2825 *8*				
2887 *8*	3/2$^-$[&]	1	0.34	
2907 *8*	(5/2)$^-$[b]	3	0.35	
2946 *8*	(5/2)$^-$[a]	3	0.26	
2970 *8*	(3/2)$^+$[b]	2	0.06	
3004[‡]				E(level),J$^\pi$,C^{2}S′: 1968Ro09 report L=3 for 3002 level and do not give L for the 3016 level. 1977Ch12 report L=(2) with C^{2}S′=0.08 (1d3/2), 0.023 (2d5/2) for the doublet. In Adopted Levels, there is a 3001.7 level with J^π=5/2$^-$ and a 3004.3 level with J^π=3/2$^+$. The 3016 level is resolved only in this reaction.
3016 *8*				E(level),J$^\pi$,C^{2}S′: see comment on 3004 level.
3054 *8*	(1/2)$^-$[a]	1	0.09	
3108 *8*				
3124 *8*	3/2$^-$[&]	1	0.59	
3204 *8*	(7/2)$^-$[a]	3	0.14	J$^\pi$: from 1977Ch12. 5/2$^-$ favored by 1972Ma39 on the basis of the decrease in σ between E(d)=7.5 and E(d)=10 MeV.
3261 *8*				
3352 *8*	5/2$^-$[&]	3	0.44	
3719 *8*	1/2$^+$	0	0.01	
3767 *8*	(3/2)$^-$[a]	1	0.30	E(level): possible doublet (1977Ba14). Authors note that the small magnitude of the vector-analyzing power can be accounted for by the assumption that the peak consists of two states with 1/2$^-$ and 3/2$^-$ configurations.
3827 *8*				
3863 *8*				
3897 *8*				
3926 *8*				
3947 *10*				
3979 *10*	(5/2)$^+$[b]	2	0.18	
4000 *10*	(5/2)$^-$[b]	3	0.17	

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^{50}Cr(d,p),(pol d,p) 1977Ch12,1977Ba14,1972Ma39 (continued)

^{51}Cr Levels (continued)

E(level)†	Jπ@	L#	C²S′#	Comments
4036 *10*	(1/2)⁻[a]	1	0.40	
4070 *10*	(5/2)⁺[b]	2	0.27	
4099 *10*	(9/2)⁺[b]	4	0.98	
4135 *10*				
4158 *10*	(9/2)⁺[b]	4	3.2	
4178 *10*				
4192 *10*	(5/2)⁺[b]	2	0.12	
4215‡				
4234 *10*				
4283 *10*	1/2⁺	0	0.010	
4318 *10*				
4351 *10*	(1/2⁻)[b]	(1)	0.007	
4403 *10*				
4426 *10*	(1/2)⁻[b]	1	0.069	
4439 *10*	(5/2)⁺[b]	2	0.098	L: 1968Ro09 report L=(1) and 1972Ma39 report L=(2).
4508 *10*				
4533 *10*				
4560 *10*	(5/2)⁻[b]	3	0.28	
4577 *10*	(1/2)⁻[b]	1	0.032	
4609 *10*	1/2⁺	0	0.076	
4647 *10*				
4669 *10*	(1/2⁻)[b]	(1)	0.017	
4684 *10*	(5/2)⁺[b]	2	0.05	L: 1968Ro09 report L=(1). 1972Ma39 report L=2.
4707 *15*				
4730 *10*				
4742 *10*				
4769 *10*	(1/2)⁻[a]	1	0.24	Jπ: 3/2⁻ favored by 1972Ma39.
4823 *10*				
4849 *15*	(1/2)⁻[b]	1	0.02	
4874 *15*	(1/2⁻)[b]	(1)	0.01	
4930‡				
4950 *15*				E(level): 4913 (1977Ch12), 4936 (1966Ma42), 4950 (1968Ro09).
4964 *10*				E(level): 4969 (1977Ch12).
5002‡				
5078 *15*				
5113 *15*	1/2⁺	0	>0.03	
5145 *15*	(5/2⁻)[a]	(3)	0.14	C²S′: from 1972Ma39. L from 1972Ma39,1968Ro09. Spectrum of 1977Ch12 is contaminated at forward angles.
5177 *15*				
5202 *15*	(1/2)⁻[a]	1	0.18	
5249 *15*	(5/2)⁺[b]	2	0.038	
5270‡				
5284 *15*	(5/2)⁺[b]	2	0.031	
5332 *15*	(5/2)⁺[b]	2	0.081	
5357 *15*				L: 1968Ro09 report L=(0), 1972Ma39 report L=1, and 1977Ch12 report L=(2) with C²S′=0.04.
5396 *15*	(1/2)⁻[b]	1	0.023	
5447‡	(1/2⁻)[b]	(1)	0.024	
5464 *15*				
5495 *15*	(1/2)⁻[b]	1	0.021	L: 1968Ro09 report L=2, 1972Ma39 report L=1.

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^{50}Cr(d,p),(pol d,p) 1977Ch12,1977Ba14,1972Ma39 (continued)

^{51}Cr Levels (continued)

E(level)[†]	Jπ[@]	L[#]	C²S′[#]	Comments
5532[‡]	(5/2⁺)[b]	(2)	0.022	
5580 *15*				
5605 *15*				
5630 *15*	(1/2⁻)	(1)	0.014	
5663 *15*	(1/2)⁻[a]	1	0.25	
5699 *15*				
5725 *15*				
5741 *15*	(1/2)⁻[b]	1	0.12	
5769 *15*				L,C²S′: from 1972Ma39, 1968Ro09 report L=(1), with C²S′=0.04, 1972Ma39 report L=2 with C²S′=0.10, and 1977Ch12 report L=(1,2) with C²S′=0.03,0.05.
5812 *15*				
5850 *15*				
5928 *15*				
5952 *15*	(1/2)⁻[b]	1	0.058	
5970[‡]				
5991 *15*	1/2⁺	0	0.017	
6034 *15*	(1/2)⁻[b]	1	0.067	
6075 *15*				L: 1968Ro09 report L=(3,2), 1977Ch12 report a non-stripping $\sigma(\theta)$.
6107 *15*				
6122 *15*	(1/2⁻)[b]	(1)	0.032	
6136[‡]				
6157 *15*				
6184 *15*	1/2⁺	0	0.014	
6219 *15*				
6236 *15*	(1/2)⁻[b]	1	0.030	
6254 *15*	1/2⁺	0	0.022	
6285[‡]				
6306 *15*	(5/2⁺)[b]	(2)	0.023	
6332 *15*	(1/2⁻)[b]	(1)	0.043	
6360 *15*	1/2⁺	0	0.027	L: 1968Ro09 report L=(1).
6377 *15*				
6413 *15*				
6438 *15*	1/2⁺	0	0.029	
6478 *15*				Jπ,L,C²S′: L=(0) with C²S′=0.021 for E=6478+6485 peaks (1977Ch12).
6485 *15*				Jπ,L,C²S′: see comment on 6478 level.
6518 *15*				E(level),L,C²S′: L=2 with C²S′=0.13 for 6511+6523 peaks (1977Ch12).
6523[‡]				E(level),L,C²S′: see comment on 6523 level.
6564[‡]				
6604 *15*	(5/2)⁺[b]	2	0.053	
6660 *15*	(5/2⁺)[b]	(2)	0.018	E(level): 6649 (1977Ch12).
6680 *15*				
6693 *15*				
6718 *15*				
6723 *15*				
6741 *15*				
6760 *15*				
6775 *15*	(5/2)⁺[b]	2	0.072	
6803 *15*	(5/2)⁺[b]	2	0.11	
6820[‡]				
6866 *15*	(5/2)⁺[b]	2	0.036	
6879 *15*				

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^{50}Cr(d,p),(pol d,p) 1977Ch12,1977Ba14,1972Ma39 (continued)

^{51}Cr Levels (continued)

E(level)†	Jπ@	L#	C²S′#	Comments
6896 *15*	(1/2)−b	1	0.039	
6920 *15*				
6979 *15*				
6995 *15*	(1/2⁻)b	(1)	0.037	
7018 *15*	1/2+	0	0.013	
7038 *15*	(1/2)−b	1	0.046	
7078‡				E(level),L,C²S′: L=(2) with C²S′=0.060 for 7078+7088 peaks (1977Ch12).
7088‡				E(level),L,C²S′: see comment on 7078 level.
7130 *15*	(5/2)−b	3	0.13	
7141 *15*				
7167 *15*	(5/2+)b	(2)	0.031	
7206 *15*	(1/2)−b	1	0.043	
7240 *15*				L: 1968Ro09 report L=3, 1977Ch12 report a non-stripping $\sigma(\theta)$.
7271 *15*				E(level),L,C²S′: L=(0) with C²S′=0.067 for 7268+7278 peaks (1977Ch12).
7282 *15*				E(level),L,C²S′: see comment on 7271 level.
7305 *15*	1/2+	0	0.089	
7342 *15*	1/2+	0	0.057	
7388 *15*	(5/2)+b	2	0.033	
7426 *15*	(5/2)+b	2	0.024	
7445 *15*				
7479 *15*				
7504 *15*				
7555 *15*	(5/2)+b	2	0.085	
7590 *15*	1/2+	0	0.017	
7628‡				E(level),L,C²S′: L=2 with C²S′=0.12 for 7628+7648 peaks (1977Ch12).
7643‡				E(level),L,C²S′: see comment on 7628 level.
7674 *15*	1/2+	0	0.029	
7689‡				E(level),L,C²S′: L=2 with C²S′=0.11 for 7689+7703 peaks (1977Ch12).
7703‡				E(level),L,C²S′: see comment on 7703 level.
7721 *15*				
7758 *15*				
7787 *15*	(5/2)+	2	0.042	
7818 *15*				E(level),L,C²S′: L=2 with C²S′=0.068 for 7820+7834 peaks (1977Ch12).
7835 *15*				E(level),L,C²S′: see comment on 7819 level.
7855 *15*				
7874 *15*	(5/2+)b	(2)	0.034	
7901 *15*	1/2+	0	0.058	
7932 *15*	(5/2)+b	2	0.044	
7954‡	1/2+	0	0.045	
8003‡	1/2+	0	0.055	
8024‡				
8047‡	1/2+	0	0.060	
8078‡	1/2+	0	0.061	
8124‡	(5/2)+b	2	0.10	

† From 1968Ro09, which only give uncertainties and have best resolution, except as noted.
‡ From 1977Ch12. No uncertainty given by authors.

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^{50}Cr(d,p),(pol d,p) 1977Ch12,1977Ba14,1972Ma39 (continued)

^{51}Cr Levels (continued)

From 1977Ch12, except as noted.
@ Based on L value, except as noted. Values agree with those 1968Ro09 and 1972Ma39, except where noted.
& From 1977Ba14, vector and tensor analyzing power.
a From J dependence in $\sigma(\theta)$, 1972Ma39, 1969De17, 1977Ch12.
b From 1977Ch12, assumed for DWBA calculation and S extraction.