^{114}Cd(pol d,t) 2005Bu20

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jean Blachot	NDS 111, 1471 (2010)	1-May-2009

Vector polarization P_3 of beam was ≈60% and obtained with an atomic beam source.

E=25.0 MeV. Measured ΔE-E_{rest}, $\sigma(\theta)$, $d\sigma/d\Omega$ with the Munich Q3D spectrograph, a 1.8-meter long focal plane detector and a Faraday cup placed behind the ^{114}Cd target. FWHM≈5 keV. Spectra measured twice at 11 angles from 8°−45° for antiparallel spin orientations of the polarized deuteron projectile beam and covered an energy range of ≈2.7 MeV for one magnetic setting of the spectrograph. DWBA analysis.

^{113}Cd Levels

$d\sigma/d\Omega=[(d\sigma/d\Omega)^+ + (d\sigma/d\Omega)^-]/2$, where $(d\sigma/d\Omega)^+$ and $(d\sigma/d\Omega)^-$ are the differential cross sections measured for the two antiparallel spin orientations. Quoted values in 2005Bu20 represent maximum differential cross sections.

for detailed configurations of levels in ^{113}Cd, refer to discussion by 2005Bu20.

E(level)†	Jπ‡	L	10(G_{lj})	Comments
0.0	$1/2^+$	0	2.45	$d\sigma/d\Omega$=3.135 mb/sr.
262.5 *14*	$11/2^-$	5	9.46	$d\sigma/d\Omega$=563 μb/sr.
297.7 *14*	$3/2^+$	2	2.51	$d\sigma/d\Omega$=2.304 mb/sr.
315.5 *14*	$5/2^+$	2	6.18	$d\sigma/d\Omega$=6.153 mb/sr.
458.6 *14*	$7/2^+$	4	11.96	$d\sigma/d\Omega$=783 μb/sr.
522.3 *14*	$7/2^-$	3	1.36	$d\sigma/d\Omega$=314 μb/sr.
584.8 *14*	$5/2^+$	2	1.01	$d\sigma/d\Omega$=1090 μb/sr.
638.2 *14*	$(9/2^-)$	(5)	0.15	$d\sigma/d\Omega$=5 μb/sr.
681.5 *14*	$3/2^+$	2	0.77	$d\sigma/d\Omega$=748 μb/sr.
709.5 *14*	$5/2^+$	2	0.33	$d\sigma/d\Omega$=346 μb/sr.
817.4 *14*	$7/2^+$	4	2.98	$d\sigma/d\Omega$=195 μb/sr.
879.8 *14*	$3/2^+$	2	0.38	$d\sigma/d\Omega$=374 μb/sr.
884.8 *14*	$1/2^+$	0	0.063	$d\sigma/d\Omega$=98 μb/sr.
898.4 *14*	$(3/2^+)$	(2)	0.031	$d\sigma/d\Omega$=19 μb/sr.
940.4 *14*	$9/2^+$	4	0.20	$d\sigma/d\Omega$=21 μb/sr.
989.0 *14*	$1/2^+$	0	0.28	$d\sigma/d\Omega$=665 μb/sr.
1008.2 *14*	$5/2^+$	2	0.41	$d\sigma/d\Omega$=534 μb/sr.
1033.5 *14*	$(3/2^+)$	2	0.015	$d\sigma/d\Omega$=187 μb/sr.
1050.7 *14*	$1/2^+$	0	0.033	$d\sigma/d\Omega$=67 μb/sr.
1108.4 *14*		#		$d\sigma/d\Omega$=1 μb/sr.
1125.9 *14*	$(3/2^+)$	2	0.04	$d\sigma/d\Omega$=14 μb/sr.
1178.3 *14*	$5/2^+$	2	0.077	$d\sigma/d\Omega$=114 μb/sr.
1196.1 *14*	$5/2^+$	2	1.75	$d\sigma/d\Omega$=2560 μb/sr.
1262.5 *14*	$7/2^+$	4	0.72	$d\sigma/d\Omega$=59 μb/sr.
1302.2 *14*	$3/2^+$	2	0.014	$d\sigma/d\Omega$=16 μb/sr.
1314.4 *14*	$(9/2^+)$	(4)	0.36	$d\sigma/d\Omega$=26 μb/sr.
1329.8 *14*	$7/2^+$	4	0.12	$d\sigma/d\Omega$=8 μb/sr.
1348.3 *14*	$11/2^-$	5	0.044	$d\sigma/d\Omega$=4 μb/sr.
1366.2 *14*	$5/2^+$	2	0.0067	$d\sigma/d\Omega$=9 μb/sr.
1396.5 *14*	$9/2^+$	4	0.26	$d\sigma/d\Omega$=31 μb/sr.
1406.0 *14*	$5/2^+$	2	0.18	$d\sigma/d\Omega$=262 μb/sr.
1433.0 *14*	$7/2^+$	4	0.18	$d\sigma/d\Omega$=14 μb/sr.
1452.3 *14*		#		$d\sigma/d\Omega$=2 μb/sr.
1473.4 *14*		#		$d\sigma/d\Omega$=10 μb/sr.
1493.9 *14*	$3/2^+$	2	0.057	$d\sigma/d\Omega$=80 μb/sr.
1579.2 *14*	$(5/2^+)$	2	0.164	$d\sigma/d\Omega$=267 μb/sr.
1607.6 *14*	$5/2^+$	2	0.36	$d\sigma/d\Omega$=571 μb/sr.

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^{114}Cd(pol d,t) 2005Bu20 (continued)

^{113}Cd Levels (continued)

E(level)†	Jπ‡	L	10(G$_{lj}$)	Comments
1662.2 *14*	(3/2$^+$)	(2)	0.033	dσ/dΩ=69 μb/sr.
1689.6 *14*		#		dσ/dΩ=39 μb/sr.
1700.1 *14*	(11/2$^-$)	(5)	0.34	dσ/dΩ=18 μb/sr.
1713.0 *14*	(3/2$^-$)	(1)	0.010	dσ/dΩ=35 μb/sr.
1744.1 *14*	(5/2$^+$)	2	0.032	dσ/dΩ=66 μb/sr.
1769.4 *14*	(3/2$^+$)	2	0.010	dσ/dΩ=13 μb/sr.
1781.4 *14*	(3/2$^+$)	2	0.088	dσ/dΩ=95 μb/sr.
1786.5 *14*	(3/2$^+$)	2	0.079	dσ/dΩ=66 μb/sr.
1813.1 *14*	(7/2$^+$)	4	0.54	dσ/dΩ=46 μb/sr.
1825.1 *14*	5/2$^+$	2	0.057	dσ/dΩ=90 μb/sr.
1833.5 *14*	3/2$^+$	2	0.050	dσ/dΩ=61 μb/sr.
1852.3 *14*	1/2$^+$	0	0.094	dσ/dΩ=243 μb/sr.
1873.4 *14*	3/2$^+$	2	0.13	dσ/dΩ=164 μb/sr.
1889.0 *14*	5/2$^+$	2	0.154	dσ/dΩ=250 μb/sr.
1905.0 *14*	(7/2$^-$)	(3)	0.042	dσ/dΩ=12 μb/sr.
1911.4 *14*	(5/2$^+$)	(2)	0.011	dσ/dΩ=11 μb/sr.
1923.3 *14*	5/2$^+$	2	0.016	dσ/dΩ=25 μb/sr.
1943.0 *14*	(3/2$^+$)	2	0.026	dσ/dΩ=32 μb/sr.
1969.8 *14*	7/2$^+$	4	0.22	dσ/dΩ=18 μb/sr.
1998.8 *14*	(11/2$^-$)	(5)	0.28	dσ/dΩ=15 μb/sr.
2005.3 *25*		#		dσ/dΩ=7 μb/sr.
2015.6 *25*	1/2$^+$	0	0.007	dσ/dΩ=22 μb/sr.
2027.7 *25*		#		dσ/dΩ=2 μb/sr.
2044.9 *25*	1/2$^-$	1	0.089	dσ/dΩ=225 μb/sr.
2062.9 *25*		#		dσ/dΩ=2 μb/sr.
2072.7 *25*	5/2$^+$	2	0.056	dσ/dΩ=38 μb/sr.
2080.9 *25*	1/2$^+$	0	0.023	dσ/dΩ=64 μb/sr.
2099.2 *25*	5/2$^+$	2	0.017	dσ/dΩ=28 μb/sr.
2127.6 *25*		#		dσ/dΩ=9 μb/sr.
2135.0 *25*	1/2$^+$	0	0.013	dσ/dΩ=42 μb/sr.
2145.1 *25*	(7/2$^-$)	(3)	0.0058	dσ/dΩ=5 μb/sr.
2155.7 *25*	3/2$^+$	2	0.032	dσ/dΩ=46 μb/sr.
2172.2 *25*	3/2$^-$	1	0.028	dσ/dΩ=83 μb/sr.
2179.9 *25*	5/2$^+$	2	0.017	dσ/dΩ=31 μb/sr.
2195.6 *25*	1/2$^-$,3/2$^-$	1	0.019	dσ/dΩ=43 μb/sr.
2203.5 *25*	7/2$^+$	4	0.10	dσ/dΩ=9 μb/sr.
2213.8 *25*	(7/2$^-$)	(3)	0.020	dσ/dΩ=5 μb/sr.
2229.0 *25*	(3/2$^+$)	(2)	0.028	dσ/dΩ=49 μb/sr.
2241.1 *25*	5/2$^+$	2	0.062	dσ/dΩ=115 μb/sr.
2267.6 *25*	5/2$^-$,7/2$^-$	3	0.019	dσ/dΩ=4 μb/sr.
2278.3 *25*	1/2$^+$	0	0.014	dσ/dΩ=49 μb/sr.
2292.9 *25*	7/2$^+$	4	0.159	dσ/dΩ=12 μb/sr.
2313.5 *25*		(2)		dσ/dΩ=12 μb/sr.
2336.4 *25*		#		dσ/dΩ=13 μb/sr.
2352.0 *25*	3/2$^+$	2	0.012	dσ/dΩ=16 μb/sr.
2361.9 *25*	5/2$^+$	2	0.045	dσ/dΩ=13 μb/sr.
2381.1 *25*	(3/2$^-$)	1	0.020	dσ/dΩ=48 μb/sr.
2396.6 *25*	5/2$^+$	2	0.049	dσ/dΩ=91 μb/sr.
2413.3 *25*	(3/2$^+$)	2	0.024	dσ/dΩ=37 μb/sr.
2425.1 *25*		#		dσ/dΩ=5 μb/sr.
2438.9 *25*	(3/2$^+$)	2	0.017	dσ/dΩ=27 μb/sr.
2448.4 *25*	3/2$^+$,5/2	2	0.027	dσ/dΩ=39 μb/sr.
2472.3 *25*	3/2$^+$,5/2	2	0.017	dσ/dΩ=27 μb/sr.
2480.8 *25*		#		dσ/dΩ=14 μb/sr.

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^{114}Cd(pol d,t) 2005Bu20 (continued)

^{113}Cd Levels (continued)

E(level)[†]	J$^{\pi}$[‡]	L	10(G$_{lj}$)	Comments
2499.6 *25*	1/2$^+$	0	0.0029	dσ/dΩ=15 μb/sr.
2533.7 *25*		(2)	0.022	dσ/dΩ=44 μb/sr.
2548.3 *25*	3/2$^+$,5/2	2	0.015	dσ/dΩ=26 μb/sr.
2575.4 *25*		[#]		dσ/dΩ=17 μb/sr.
2586.6 *25*	1/2$^+$	0	0.024	dσ/dΩ=94 μb/sr.
2599.1 *25*	(5/2$^+$)	2	0.017	dσ/dΩ=34 μb/sr.
2612.2 *25*	3/2$^+$,5/2	2	0.039	dσ/dΩ=69 μb/sr.
2627.1 *25*	1/2$^+$	0	0.0041	dσ/dΩ=19 μb/sr.

[†] Comparison of sum rules for spectroscopic strengths from experiment with IBFM and QPM calculations indicate that not all states up to 2.5 MeV associated with the $3s_{1/2}$, $2d_{3/2}$, $2d_{5/2}$ and $1g_{7/2}$ shells were observed by 2005Bu20.

[‡] Assignments based upon comparison of t(θ) data with DWBA calculations. The distinction between two possible *j*-values for any given level (i.e. j=l+1/2 or j=l−1/2) were made on basis of deduced analyzing power for level.

[#] $\sigma(\theta)$ data not characteristic of an L-value; level may be populated by multi-step processes or part of an unresolved doublet.