^{195}Pt(p,d) 1981Be20

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 177, 1 (2021)	3-Sep-2021

$J^{\pi}(^{195}Pt$ g.s. target)=1/2$^-$.

1981Be20: E=25 MeV proton beam was produced from the Orsay tandem. Target was 97.3% enriched ^{195}Pt. Reaction products were momentum analyzed with a split-pole magnetic spectrograph (FWHM=12 keV) and detected with 8 position-sensitive detectors. Measured $\sigma(\theta)$ from 5° to 55° (c.m.) in steps of 5°. Deduced levels, L-transfers, spectroscopic factors from DWBA analysis.

All data are from 1981Be20.

^{194}Pt Levels

Cross sections summed over the first six angles are given under comments. Uncertainty in cross sections is ≈18% (1981Be20). Spectroscopic factor C^2S is defined by $d\sigma/d\Omega(exp)=2.29\times C^2S\times d\sigma/d\Omega(DWBA)$ (1981Be20).

E(level)	L‡	C^2S†	Comments
0	1	0.430	C^2S: for $p_{1/2}$. $d\sigma/d\Omega$=5866 μb/sr.
328 *3*	1	0.051	$d\sigma/d\Omega$=719 μb/sr.
622 *3*	1	0.134	$d\sigma/d\Omega$=1678 μb/sr.
811 *3*	(3)	0.004	L: data consistent with L=5 also. C^2S: for $f_{7/2}$. For L=5, C^2S=0.076. $d\sigma/d\Omega$=21.2 μb/sr.
923 *3*	(3)	0.005	C^2S: for $f_{7/2}$. $d\sigma/d\Omega$=16.5 μb/sr.
1232 *3*	3	0.215	C^2S: for $f_{7/2}$. $d\sigma/d\Omega$=702 μb/sr.
1267 *3*	1	0.028	C^2S: for $p_{1/2}$. $d\sigma/d\Omega$=291 μb/sr.
1369 *3*			$d\sigma/d\Omega$=8.5 μb/sr.
1422 *3*	3	0.059	C^2S: for $f_{7/2}$. $d\sigma/d\Omega$=188 μb/sr.
1479 *3*	1(+6)	0.021	E(level),L: probably an unresolved doublet with small mixture from L=6. C^2S: for L=1 and $p_{1/2}$. C^2S<0.15 for L=6 component. $d\sigma/d\Omega$=223 μb/sr.
1511 *3*	1+3	0.009,0.009	$d\sigma/d\Omega$=117 μb/sr.
1547 *3*	1	0.003	C^2S: for $p_{1/2}$. $d\sigma/d\Omega$=24.7 μb/sr.
1584 *3*	(1)	0.001	$d\sigma/d\Omega$=11.4 μb/sr.
1621 *3*	1+3	0.004,0.009	$d\sigma/d\Omega$=71.9 μb/sr.
1670 *3*	1(+3)	0.015	C^2S: for L=1. C^2S<0.013 for L=3. $d\sigma/d\Omega$=171 μb/sr.
1777 *3*	1(+3)	0.049	C^2S: for L=1. C^2S<0.013 for L=3. $d\sigma/d\Omega$=525 μb/sr.
1793 *3*	0+2	0.002,0.0015	C^2S: $s_{1/2}$ for L=0 and $d_{3/2}$ for L=2. $d\sigma/d\Omega$=85 μb/sr.
1815 *3*	1+3	0.026,0.060	E(level): this level contaminated by a peak from ^{195}Pt (g.s.). The authors have applied appropriate correction to cross sections. $d\sigma/d\Omega$=389 μb/sr.
1869 *3*	3(+1)	0.037	E(level): may be an unresolved doublet. C^2S: for L=3. C^2S<0.003 for L=1. $d\sigma/d\Omega$=113 μb/sr.
1896 *3*	1	0.110	C^2S: for $p_{1/2}$.

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^{195}Pt(p,d) 1981Be20 (continued)

^{194}Pt Levels (continued)

E(level)	L‡	C^{2}S†	Comments
			dσ/dΩ=1037 μb/sr.
1932 *3*	1+3	0.108,0.162	dσ/dΩ=1385 μb/sr.
1993 *5*	6	1.014	dσ/dΩ=386 μb/sr.
2025 *10*			dσ/dΩ=63 μb/sr.
2049 *5*	1	0.255	C^{2}S: for $p_{1/2}$. dσ/dΩ=2173 μb/sr.
2061 *5*	1	0.300	dσ/dΩ=2980 μb/sr.
2090 *5*	1+3	0.104,0.364	dσ/dΩ=1795 μb/sr.
2115 *5*	1+3	0.176,0.176	E(level): may be an unresolved doublet comprising 2109 and 2114 levels. dσ/dΩ=1993 μb/sr.
2138 *5*	1	0.126	C^{2}S: p1/2. dσ/dΩ=1076 μb/sr.
2161 *5*	1	0.107	C^{2}S: p1/2. dσ/dΩ=930 μb/sr.
2191 *10*	6	2.12	E(level),L: unresolved doublet. L-transfer unknown for second component. dσ/dΩ=720 μb/sr.
2214 *5*	1+3	0.062,0.140	dσ/dΩ=920 μb/sr.
2240 *10*			dσ/dΩ=28 μb/sr.
2270 *5*	(3)	0.108	E(level),L: unresolved from a peak from ^{193}Pt g.s. the L-transfer deduced by assuming L=1 for ^{193}Pt peak. dσ/dΩ=488 μb/sr.
2302 *10*	1+3	0.023,0.029	dσ/dΩ=324 μb/sr.
2332 *5*	6	0.976	dσ/dΩ=376 μb/sr.
2363 *5*	(1+3)	0.036,0.126	E(level),L: probably a doublet. The σ(θ) data also consistent with L=1+4. dσ/dΩ=563 μb/sr.
2394 *5*	1+3	0.102,0.356	dσ/dΩ=1532 μb/sr.
2411 *10*	(0)		dσ/dΩ=696 μb/sr.
2427 *10*			dσ/dΩ=81 μb/sr.
2450 *5*	(1)	0.071	dσ/dΩ=605 μb/sr.
2472 *5*	1(+3)	0.047	C^{2}S: for L=1. For L=3 C^{2}S<0.030. dσ/dΩ=456 μb/sr.
2500 *10*	(1+3)	0.074,0.258	L,C^{2}S: for triplet of unresolved levels at 2500, 2515 and 2530. dσ/dΩ=1155 μb/sr for 2500+2515+2530.
2515 *10*			L,C^{2}S: see 2500 level.
2530 *10*			L,C^{2}S: see 2500 level.
2557 *10*	(1+3)	0.088,0.132	dσ/dΩ=955 μb/sr.
2615 *10*	(1)	0.061	L: possible L=3 mixture with C^{2}S<0.023. dσ/dΩ=551 μb/sr.
2640 *10*	(3)	0.411	dσ/dΩ=945 μb/sr.
2667 *10*	(1)	0.058	dσ/dΩ=450 μb/sr.
2690 *10*	(3)	0.20	dσ/dΩ=446 μb/sr.
2710 *10*			dσ/dΩ=186 μb/sr.
2743 *10*	(1+3)	0.041,0.185	E(level): unresolved doublet. dσ/dΩ=655 μb/sr.
2783 *10*	(1+3)	0.021,127	dσ/dΩ=400 μb/sr.
2826 *10*	(1+3)	0.043,0.098	dσ/dΩ=510 μb/sr.
2870 *10*			dσ/dΩ=539 μb/sr.
2895 *10*	(1+3)	0.064,0.145	L,C^{2}S: for doublet of unresolved levels at 2895 and 2908. dσ/dΩ=769 μb/sr for 2895+2908.
2908 *10*			L,C^{2}S: see 2895 level.
2956 *10*	(1+3)	0.104,0.364	dσ/dΩ=1424 μb/sr.
2980? *10*			dσ/dΩ=443 μb/sr.
3000 *10*	(1+3)	0.166,0.361	dσ/dΩ=1804 μb/sr.
3033 *10*	(1+3)	0.052,0.117	dσ/dΩ=596 μb/sr.
3065 *10*	(1)	0.108	L: possible L=3 mixture with C^{2}S<0.070.

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^{195}Pt(p,d) 1981Be20 (continued)

^{194}Pt Levels (continued)

E(level)	L‡	C^2S†	Comments
			dσ/dΩ=935 μb/sr.
3078 *10*	(1+3)	0.019,0.042	dσ/dΩ=219 μb/sr.
3100 *10*	(1+3)	0.050,0.142	E(level): unresolved doublet. dσ/dΩ=600 μb/sr.
3132 *10*	(1)	0.022	dσ/dΩ=190 μb/sr.
3170 *10*	(1+3)	0.029,0.066	dσ/dΩ=332 μb/sr.
3198 *10*	(1+3)	0.047,0.097	dσ/dΩ=490 μb/sr.
3225 *10*	(1)	0.028	L: possible L=3 mixture with C^2S<0.020. dσ/dΩ=240 μb/sr.

† The following orbitals are considered, unless stated otherwise under comments: p3/2 for L=1, f5/2 for L=3 and i13/2 for L=6.

‡ Above 2400 keV excitation energy, L-transfers are considered tentative by the evaluators, mainly because of the high level density.