^{50}Cr(α,α') 1974Pe01,1972Pe28

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen and Balraj Singh	NDS 157, 1 (2019)	15-Apr-2019

1974Pe01,1972Pe28: Eα=35.66 MeV beam from the University of Colorado 1.3-m AVF cyclotron. Measured $\sigma(\theta=10°-135°)$ with Si detector (p and α, FWHM=85 keV), ΔE(level)≤20 keV. Deduced levels, J, π, L-transfers from DWBA analysis. Also (p,p′), (^{3}He,^{3}He′), (δ,δ').

Others:

1990Ba23: E=25 MeV. Measured $\sigma(\theta$,E$\alpha)$. FWHM=150-250 keV. Five levels analyzed up to 4050 keV: 0, 780, 1880, 3160 and 4050.

^{50}Cr Levels

E(level)[†]	J$^\pi$	L[‡]	$(\beta_L R)^2$[#]	Comments
0.0	0$^+$			
783 *20*		2	1.39	
1888 *20*				L: (α,α') $\sigma(\theta)$ does not agree with DWBA for L=4. State probably excited by double excitation (1974Pe01). (α,α') $\sigma(\theta)$ reproduced by harmonic vibrator model (HVM) and rotor model (RM) coupled-channel calculations (1990Ba23).
2924 *20*		2	0.053	
3161 *20*		2	0.118	
3325 *20*		4	0.032	
3595 *20*				
3611 *20*		4	0.099	
3698 *20*		4	0.028	
3844 *20*				
3875 *20*				
3898 *20*		4	0.152	
3938 *20*				
4050 *20*		3	0.435	
4193 *20*		2	0.211	
4370 *20*		5	0.063	
4570 *20*		3	0.0294	
4680 *20*		2	0.013	
4770 *20*		2	0.011	
4940 *20*		4	0.038	
5230 *20*		4	0.060	
5450 *20*		3	0.0196	
5760 *20*		3	0.186	
5990 *20*		3	0.116	
6150 *20*		3	0.0128	
6450 *20*		3	0.069	
6650 *20*		3	0.143	
6790 *20*		3	0.0581	
7360 *20*		3	0.0132	
7860 *20*		3	0.0253	
8680 *20*		3	0.0371	

[†] From 1974Pe01 and 1972Pe28. Values are from combination of (^{3}He,^{3}He′), (p,p′), (α,α'), and (δ,δ') measurements.

[‡] From DWBA fit to measured $\sigma(\theta)$ (1974Pe01 and 1972Pe28). Parentheses are added by evaluators for apparent poor fit in the fitting plots. Probably several other L=3 states populated weakly but no information given for them.

[#] Square of deformation lengths, from 1974Pe01 and 1972Pe28.