^{36}Ar(p,d) 1968Jo04,1968Ko11

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	Jun Chen, John Cameron and Balraj Singh	NDS 112,2715 (2011)	20-Oct-2011

1968Jo04: E=27.5 MeV proton beam produced from the University of Colorado Nuclear Physics Laboratory 1.3 m FFAG cyclotron. Target: gas targets of natural argon (99.6%) and enriched ^{36}Ar (99%). Detectors: a telescope of a 0.228 mm transmission surface barrier detector and a 0.37 cm lithium-drifted stopping counter, FWHM=120 keV. Measured $\sigma(E_d,\theta)$. Deduced levels, L, spectroscopic factors.

1968Ko11: E=33.6 MeV proton beam of 1 to 100 nA produced from the Michigan State University sector-focusing cyclotron. Target: a gas target of isotropically enriched ^{36}Ar (>99%). Detectors: a ΔE-E telescope of a 279 μ silicon surface barrier detector and a 3 mm lithium-drifted silicon counter, FWHM=130 keV; a CsI(Tl)as a monitor throughout the work. Measured $\sigma(E_d,\theta)$. Deduced levels, J^π, L, spectroscopic factors.

^{35}Ar Levels

Target ^{36}AR $J^\pi=0^+$, giving final J^π=L+1/2 or L-1/2.
Spectroscopic factor C^2S: $N*C^2S=\sigma(\theta)^{exp}/\sigma(\theta)^{DWBA}$, where N=1.65*3/2 in 1968Jo04.

E(level)	L[&]	C^2S	Comments
0[†]	2[‡]		C^2S: 2.92 in 1968Jo04; 3.02 or 1.76 for different radii in 1968Ko11.
1180[†] *20*	0[‡]		C^2S: 2.50 in 1968Jo04; 1.29 or 1.05 for different radii in 1968Ko11.
1700[@] *30*	@	0.1[@]	
2615[@] *20*	2[@]	0.42,0.28[@]	E(level): weighted average of 2600 *20* in 1968Ko11 and 2630 *20* in 1968Jo04. L: 1 from 1968Jo04, in disagreement with L(^{3}He,α)=2. C^2S: 0.12 from 1968Jo04.
2970[†] *20*	2[‡]		C^2S: 3.10 or 2.47 in 1968Jo04; 2.31 or 1.53 in 1968Ko11.
3200[†] *20*	3[‡]		C^2S: 3.10 or 2.47 in 1968Jo04; 2.31 or 1.53 in 1968Ko11.
4700[@] *40*	(0)[@]	0.05,0.04[@]	
4770[#] *20*	0[#]	0.172[#]	
5102[†] *20*	3[‡]	0.46	L,C^2S: from 1968Jo04.
5400[@] *40*	@	@	
5598[†] *20*	2[‡]		C^2S: 2.93 or 2.37 in 1968Jo04; 1.77 or 1.25 in 1968Ko11.
6026[†] *20*	2[‡]		C^2S: 1.58 or 1.31 in 1968Jo04; 1.18 or 0.83 in 1968Ko11.
6620[@] *30*	(0)[@]	0.24,0.19[@]	
6700[#] *20*	3[#]	2.60[#]	
6820[@] *30*	2[@]	0.72,0.51[@]	
7030[#] *20*	2[#]	2.20,1.79[#]	

[†] Weighted average from 1968Jo04 and 1968Ko11.
[‡] From both 1968Jo04 and 1968Ko11, unless otherwise noted.
[#] From 1968Jo04, unless otherwise noted.
[@] From 1968Ko11, unless otherwise noted.
[&] From the comparison of the DWBA predictions with experimental data.