^{40}Ar(pol d,d′),(d,d′) 1976Se09

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 140, 1 (2017)	30-Sep-2015

1976Se09: (pol d,d′) E=14.83 MeV polarized deuteron beam was produced from the University of Norte Dame polarized ion source. Target was natural argon gas in a gas cell with stainless-steel foil. Scattered particles were detected with ΔE-E solid-state counter telescopes (FWHM≈100 keV). Measured σ(E,θ), vector analyzing power. Deduced levels, J, π, L-transfer, deformation parameters from DWBA and coupled-channel analysis (CCBA).

Others:

1987Nu01: (pol d,d′) E=52 MeV. Measured vector analyzing powers for g.s. and the first 2^+ state.

1980Ha14: (pol d,d) E=56 MeV. Measured $\sigma(\theta)$, vector and tensor analyzing powers.

1980Ma10: (pol d,d) E=52 MeV. Measured $\sigma(\theta)$, vector analyzing powers.

1978Bu22: (pol d,d) E=9.0, 10.75, 12.0 MeV. Measured $\sigma(\theta)$, vector analyzing powers.

1975Ca24: (d,d) E=1.5-2.3 MeV. Measured $\sigma(\theta)$.

1970Fi01: (d,d) E=11.8 MeV. Measured $\sigma(\theta)$. Deduced optical-model parameters.

1968Hi09: (d,d′) E=52 MeV. Measured $\sigma(\theta)$. DWBA analysis for g.s., first 2^+ and first 3^- states.

1965Ja13: (d,d′) E=10.6 MeV. Measured $\sigma(\theta)$. All states up to 3681 seen, except the 2121 level.

1961Ka26: (d,d′).

All data are from 1976Se09, unless otherwise noted.

^{40}Ar Levels

E(level)[†]	L[‡]	β_L (DWBA)[‡]	Comments
0	0		
1461	2	0.215	β_2(CCBA)=+0.182 (1976Se09). β_2=0.22-0.25 (1968Hi09). β_2=+0.17 or −0.20; β_4=+0.10 (1987Nu01). coupling parameter B_{02}=0.17 (1987Nu01).
2121	(0)		β_2(CCBA)=−0.062 (1976Se09).
2524	2	0.077	β_2(CCBA)=−0.075 (1976Se09).
2893	4	0.110	β_4(CCBA)=+0.130 (1976Se09).
3208	(2)	0.118	β_2(CCBA)=+0.126 (1976Se09).
3512	2	0.076	
3681	3	0.225	β_3(CCBA)=+0.203 (1976Se09). β_3=0.21-0.25 (1968Hi09).
3919[#]	2[#]	0.079[#]	
3942[#]	2[#]	0.079[#]	
4420?	(2)	0.153	
4876	3	0.115	
5170?[@]			
5400?[@]			
5880	(3)	0.094	
6054	4	0.095	E(level): as quoted in 1976Se09. A level at the same energy is observed in ^{40}Cl β^- decay and (γ,γ') but with $J^\pi=1^{(-)}$. Therefore the evaluator have considered them as two separate levels.

[†] Rounded values from Adopted Levels, unless otherwise noted.

[‡] From comparisons of measured differential cross sections and vector analyzing powers with DWBA predictions (1976Se09).

[#] For the 3919+3942 unresolved doublet.

[@] Indicated in Fig.1 of 1976Se09.