^{34}S(pol d,p) 1977Ab07

$J^{\pi}=0^{+}$ for ^{34}S g.s.

1977Ab07: A vector-polarized 11.8-MeV deuteron beam was produced from the University of Wisconsin Lamb-shift polarized ion source and tandem accelerator. The target was a 90% enriched ^{34}S, 610−μg/cm^2 thick, evaporated onto a 100−μg/cm^2 gold foil and covered by a 50−μg/cm^2 gold layer. The reaction products were detected using four ΔE-E counter telescopes of freon-cooled surface-barrier and Si(Li) detectors with FWHM≈60 keV. Measured $\sigma(E_p,\theta)$, $iT_{11}(E_p,\theta)$. Deduced levels, J, π, L-transfers, spectroscopic factors from finite-range, non-locality corrected DWUCK-DWBA analysis of the angular distributions of cross sections and analyzing powers.

^{35}S Levels

Spectroscopic factor $C^2S=\sigma(\theta)_{exp}/\sigma(\theta)_{DWBA}/N$, where N=1.95 is a normalization factor (1977Ab07).

E(level)[†]	J^{π}	L	C^2S[@]	Comments
0	$3/2^{+}$[‡]	2	0.56,0.48[‡]	
1572	$1/2^{+}$[#]	0	0.27,0.18[#]	
1992	$7/2^{-}$[#]	3	1.16,0.73[#]	
2348	$3/2^{-}$[#]	1	0.56,0.46[#]	
2718	$5/2^{+}$[#]	2	0.03,0.02[#]	
2939	$3/2^{+},5/2^{+}$	2	0.10,0.06	C^2S: extracted from an incoherent superposition of direct and compound cross sections in 1977Ab07.
3421	$5/2^{+}$[#]	2	0.04,0.03[#]	
3563				
3802	$3/2^{-}$[#]	1	0.10,0.08[#]	
3818				
4190	$1/2^{-}$[‡]	1	0.15,0.13[‡]	
4482	$7/2^{-}$[#]	3	0.06,0.05[#]	
4575				
4837				
4904	$1/2^{-}$[‡]	1	0.48,0.41[‡]	
4963	$3/2^{-}$[#]	1	0.19,0.17[#]	
5058	$7/2^{-}$[#]	3	0.03,0.03[#]	
5126				

[†] As given in 1977Ab07, originally from 1973EnVA rounded to the nearest integer.
[‡] L-1/2 transfer from analyzing power measurements.
[#] L+1/2 transfer from analyzing power measurements.
[@] Calculated for two sets of optical model potentials. Set 1: the deuteron elastic potential and the Becchetti-Greenlees proton parameters; Set 2: Adiabatic model parametersand the Hecchetti-Greenlees proton parameters.