$^{32}\text{S}(\pi^+,\pi^-)$ **1988Mo15**

Type	Author	History Citation	Literature Cutoff Date
Full Evaluation	Jun Chen	NDS 201,1 (2025)	31-Oct-2024

Double charge exchange reaction. All measurements listed below were performed at the Clinton P. Anderson Meson Physics Facility (LAMPF) at the Los Alamos Scientific Laboratory.

1988Mo15: E=292 MeV. Measured $\sigma(\theta,\text{E}(\pi))$, deduced resonances and widths.

Others:

1994Mo44: E=295 MeV. Compilation and review of data, analyses, deduced GDR excitation and exotic vibrational modes of excitation.

1991Wa04: E=164 MeV. Measured $\sigma(\theta)$, deduced isobar-nucleon interaction mechanism.

1985Mo18: E=120-210 MeV. Measured $\sigma(\theta,\text{E}(\pi))$, deduced systematics of double charge exchange.

1983Bl08: E=120-210 MeV. Measured σ at 5° as a function of incident energy, deduced charge exchange reaction systematics. Analysis also presented by 1986Fo03.

1980Bu15: E=180 MeV. Measured $\sigma(\theta)$, deduced isospin quintet.

Additional information 1.

All data are from 1988Mo15.

^{32}Ar Levels

E(level)	J^{π}[†]	Γ	L	$d\sigma/d\Omega$ (μb/sr)[‡]	Comments
0	0^+	1.4 MeV 2		0.040 13	Γ: quoted uncertainty is resolution width only, contributed mostly by target thickness.
24.7×10^3 3	$(0^+,2^+)$	4.0 MeV 15	(1)	0.33 12	T=2 E(level): double-isovector giant-dipole resonance (GR #1). $d\sigma/d\Omega$=0.24 μb/sr 6 at 15°.
28.7×10^3 4	$(0^+,2^+)$	3.6 MeV 15	(1)	0.24 13	T=2 E(level): double-isovector giant-dipole resonance (GR #2). $d\sigma/d\Omega$=0.25 μb/sr 7 at 15°.

[†] As proposed by 1988Mo15 from L-transfer.

[‡] Gaussian line shape assumed for g.s. and Lorentzian shape for giant resonances at 24.7 and 28.7 MeV. The values are at 5°.