^{12}C(p,n) 1970Cl01,1996An08,2008Do02

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, J. E. Purcell and C. G. Sheu	NP A968, 71 (2017)	1-Jan-2017

1968Ri01: ^{12}C(p,n) E=18.9 to 50 MeV, measured σ(E).
1969Ov01: ^{12}C(p,n) E=2-20 MeV, measured σ(E). Deduced thresholds.
1970Cl01: ^{12}C(p,n) E=30,50 MeV, measured σ(E,E_N,θ). ^{12}N deduced levels, J, π.
1975Bo32: ^{12}C(p,n) E=6.3 MeV, measured σ(E_N).
1976Ca17: ^{12}C(p,n) E=647,800 MeV, measured σ(N).
1976Fr13: ^{12}C(p,n), analyzed data, calibrations. Revised Q.
1979Ba68: ^{12}C(p,n) E=1 GeV, measured σ(E_N,θ). Deduced dependency of quasielastic neutron production on mass.
1979Go16: ^{12}C(p,n) E=62,120 MeV, measured σ(θ).
1979Mo16: ^{12}C(p,n) E=144 MeV, measured σ(θ).
1980An05: ^{12}C(p,n) E=61.9,119.8 MeV, measured σ.
1980Du16: ^{12}C(p,n) E=0.144 GeV, analyzed σ(θ). Deduced pion-nucleus-nucleus coupling constants.
1980Go07: ^{12}C(p,n) E=120 MeV, measured σ(θ=0°). ^{12}N deduced Gamow-Teller matrix elements.
1980Kn02: ^{12}C(p,n) E=99.1 MeV, measured σ(E_N,θ). DWIA.
1980Mo10: ^{12}C(p,n) E=144 MeV, measured σ(θ). Deduced initial nucleus-pion, pion-final nucleus coupling constants.
1981Ra12: ^{12}C(p,n) E=120,160,200 MeV, measured σ(E_N,θ). Deduced effective interaction spin-isospin term.
1982An08: ^{12}C(p,n) E=62-160 MeV, analyzed σ(θ=0°) vs E. ^{12}N deduced σ/B(M1) spin, current contribution dependence.
1983Wa29: ^{12}C(p,n) E=135,160 MeV, measured σ(θ).
1984Ga11: ^{12}C(p,n) E=120,160,200 MeV, measured σ(θ). ^{12}N deduced levels, J, π, analogs.
1984Ga36: ^{12}C(p,n) E=60-200 MeV, analyzed σ(E_N,θ_N).
1984Na06: ^{12}C(p,n) E=30 MeV, analyzed thick target σ(E,θ), neutron spectra. Deduced reaction mechanism.
1984Sa12: ^{12}C(pol. p,N) E=65 MeV, measured spin transfer coefficient At θ=0°, σ(θ). Deduced tensor force high momentum component role.
1984Ta07: ^{12}C(pol. p,N) E=160 MeV, measured transverse spin transfer coefficient D(NN) (θ=0°), polarized neutrons. ^{12}N deduced L=0 Gamow-Teller transition expected average value.
1986Ki12: ^{12}C(p,n) E=800 MeV, measured σ(θ), σ(θ) vs neutron momentum. ^{12}N deduced Gamow-Teller, Fermi transition strengths.
1986Li14: ^{12}C(p,n) E At 1050 MeV/c, measured σ(θ) vs neutron momentum.
1987He22: ^{12}C(p,n) E≈198 MeV, measured particle spectra, σ(θ).
1987Ie02: ^{12}C(pol. p,N) E=35 MeV, measured neutron polarization.
1987Li29: ^{12}C(p,n) E=800 MeV, measured σ(E_N,θ_N).
1987Oh04: ^{12}C(p,n) E=35,40 MeV, measured σ(θ). Deduced model parameters. DWBA analysis.
1987Ra15,1987Ra32: ^{12}C(pol. p,N) E=160 MeV, measured σ(θ), σ(θ,E_N). Analyzing power. ^{12}N levels deduced Gamow-Teller transition strength.
1987Ta13,1987Ta22: ^{12}C(p,n) E=50-200 MeV, measured σ(E_P,θ=0°). ^{12}N deduced reaction population, B(GT) proportionality.
1989Ga26: ^{12}C(p,n) E=99.1 MeV, compiled, analyzed data. Deduced precritical effects role, form factor radial dependence.
1989Hi10: ^{12}C(pol. p,N) E=290,420 MeV, measured σ(θ_N,E_N), analyzing power.
1989Ra09: ^{12}C(p,n) E=492 MeV, measured σ(θ,E). Deduced unit σ(ratio).
1989Wa15: ^{12}C(p,n) E=200-400 MeV, measured σ(θ).
1990Ga19: ^{12}C(p,n) E not given, compiled double differential data. Deduced spin response features, Δ -excitation role.
1990Mi10: ^{12}C(p,n) E=280 MeV, measured σ(θ), σ(E_P). Deduced isospin symmetry test.
1991Ic01: ^{12}C(p,n) E=500 MeV, analyzed data. Deduced spin-isospin mode role In quasifree scattering region.
1991Ta13: ^{12}C(pol. p,N) E=494,795 MeV, measured σ(θ), analyzing power. Deduced quasifree neutron knockout.
1993Ch13: ^{12}C(pol. p,N) E=495 MeV, measured σ(θ), analyzing power, polarization transfer coefficient vs energy loss.
1993Ga14,1996Ga20: ^{12}C(p,n) E not given, analyzed σ(θ) vs neutron momentum. Deduced Δ -isobar decay role, medium effects on Δ.
1993Hi01: ^{12}C(pol. p,N) E=290,420 MeV, measured σ(θ), A_Y(θ). Deduced medium modification of the nucleon-nucleon isovector force.
1993Me06: ^{12}C(pol. p,N) E=318,494 MeV, measured polarization transfer observables. Deduced medium effects modification to

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effective interaction.

1993Sa30: ^{12}C(pol. p,N) E=495 MeV, analyzed $\sigma(\theta)$ vs energy transfer, response function relative to ^{2}H.

1993Ya11,1994Wa22: ^{12}C(p,n) E=186 MeV, ^{12}C(pol. p,N) E=160 MeV, measured $\sigma(\theta,E_N)$, polarization, spin observables. Deduced dipole, spin-dipole resonances.

1994De29,1995De44: ^{12}C(p,n) E=795,495 MeV, analyzed $\sigma(\theta)$ vs energy transfer.

1994Ic04: ^{12}C(pol. p,N) E=495 MeV, analyzed polarization transfer data.

1994Pr08: ^{12}C(pol. p,N) E=795 MeV, measured spin observables. Deduced spin-longitudinal, spin-transverse $\sigma(\theta)$ vs energy transfer.

1994Ra23: ^{12}C(pol. p,N) E=186 MeV, measured $\sigma(\theta,E_N)$, $\sigma(\theta)$, neutron polarization, spin observable vs θ. Deduced quasifree excitation role In giant resonance region.

1994Sa36: ^{12}C(pol. p,N) E=80,50 MeV, measured transverse polarization transfer coefficients D(nn)(0°).

1994Ta24: ^{12}C(pol. p,N) E=494 MeV, measured polarization transfer coefficients. Deduced longitudinal, transverse isovector spin responses.

1995Pr04: ^{12}C(pol. p,N) E=495,795 MeV, measured $\sigma(\theta)$, analyzing power vs energy loss.

1995Wa16: ^{12}C(pol. p,N) E=295 MeV, measured $\sigma(\theta)$, polarization coefficient vs excitation energy. Deduced spin-flip strength, effective tensor interactions related features.

1995Ya12: ^{12}C(p,n) E=186 MeV, measured $\sigma(\theta,E_N)$. Deduced quasifree reaction contribution In giant resonance region, $\Delta L=1$ transitions energy spectra.

1996An08: ^{12}C(p,n) E=135 MeV, measured $\sigma(\theta)$ vs excitation energy. ^{12}N deduced levels, γ, J, π. DWBA analysis.

1996Os02: ^{12}C(p,n) E=800 MeV, compiled, reviewed data, analyses.

1996Pr03: ^{12}C(pol. p,N) E=795 MeV, measured polarization observables. Deduced spin-longitudinal, spin-transverse, spin-independent partial σ, Δ-production related features.

1996Sa11: ^{12}C(pol. p,N) E=197,295 MeV, measured transverse polarization transfer coefficient. ^{12}N deduced spin-dipole resonances, J, π.

1996Yu02: ^{12}C(p,n) E=200 MeV, measured spectra, $\sigma(\theta)$. Deduced model parameters. DWIA analysis.

1999An32: ^{12}C(p,n) E=50-80 MeV, analyzed 0° transverse polarization.

1999Wa08: ^{12}C(pol. p,N) E=346 MeV, measured σ, $\sigma(E_N,\theta=22°)$, analyzing power, induced polarization, polarization transfer coefficients. Deduced longitudinal and transverse spin response functions.

2001Pr02: ^{12}C(pol. p,N) E=795 MeV, measured neutron spectra, $\sigma(E)$, polarization transfer observables. Deduced spin isovector monopole resonance features.

2002Ha14: ^{12}C(pol. p,N) E=197 MeV, measured polarization transfer coefficients, $\sigma(E,\theta)$.

^{12}N Levels

E(level)	J^π	Γ	Comments
0	1^+‡		
1.0×10^3† *1*	$(2^+,2^-)$‡		E(level): Unresolved doublet.
1.8×10^3#	1^-#	#	
3.2×10^3#	(3^-)#	#	
3.7×10^3† *2*	$(1^-,2^+)$‡		
4.18×10^3# *5*	(2^-)#	836# keV *25*	E(level): See also 4.2 MeV *2* (1970Cl01).
4.41×10^3# *5*	4^-#	744# keV *25*	
5.40×10^3# *5*	$(3^+,3^-)$#	385# keV *55*	E(level): See also 5.3 MeV *2* (1970Cl01).
6.4×10^3#	1^-#	#	
7.3×10^3	1^-		J^π: See also $J^\pi=2^-$ in (2008Do02).
8.4×10^3@	(0^-)@		
9.1×10^3@	(1^-)@		
10.2×10^3@	(1^-)@		

† From E_p=50 MeV (1970Cl01).

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^{12}N Levels (continued)

‡ From E_p=135 MeV (1996An08).
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@ From E_p=296 MeV (2008Do02).