

$^{13}\text{C}(\gamma, \pi^+)$ **1994Ch39**

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. H. Kelley, C. G. Sheu and J. E. Purcell		NDS 198,1 (2024)	1-Aug-2024

1982Le26: $^{13}\text{C}(\gamma, \pi^+)^{13}\text{B}(0,3.6)$ using Bremsstrahlung photons from $E_e=190\text{--}204$ MeV on a 99% enriched ^{13}C target at MIT/Bates. Measured $\sigma(\theta=90^\circ)$ for emitted π^+ energies of 18, 29, 42 MeV. Analyzed $^{13}\text{B}_{\text{g.s.}}$ population via DWIA. Higher-lying states were unresolved.

1983Mi06: $^{13}\text{C}(\gamma, \pi^+)$. Photopion production was deduced from $^{13}\text{C}(e, e'\pi^+)$ data obtained using a 195 MeV electron beam from the Tohoku/Japan LINAC. Determined $\sigma(E(\pi), \theta)$ for $\theta=30^\circ\text{--}150^\circ$. Deduced photopion $\sigma(\theta)$ vs. E_γ . Deduced the M2, M4 transition strength distribution and giant analog resonance excitation. 99% enriched ^{13}C target. $^{13}\text{B}^*(0,3.5, 6.4, 9 \text{ MeV})$ are reported.

1983Sh01: $^{13}\text{C}(\gamma, \pi^+)$, deduced from measurement of the $^{13}\text{C}(e, \pi^+)^{13}\text{B}_{\text{g.s.}}$ reaction using a 195 MeV electron beam from the Tohoku/Japan LINAC. Measured $\sigma(\theta)$ for $\theta=30\text{--}150^\circ$. Compared with DWIA calculations. 99% enriched ^{13}C target.

1988Ka41: $^{13}\text{C}(\gamma, \pi^+)$: compiled $\sigma(E_\gamma, \theta)$.

1994Ch39, 1994Ch43: $^{13}\text{C}(\gamma, \pi^+)$ $E_\gamma=191$ MeV produced from 290 MeV electrons from the Saskatchewan 300 MeV electron accelerator. Measured $\sigma(E(\pi), \theta(\pi))$. Groups are reported at $^{13}\text{B}(0, 3.5, 6.4, 9.5 \text{ MeV})$. Discussed $\Delta S=1, \Delta T=1$ transitions features.

Theoretical analyses.

1973Na14: compared (γ, π^+) vs (γ, π^-) calculated cross sections.

1983To17: $^{13}\text{C}(\gamma, \pi^+)$, DWBA, calculated $\sigma(\theta)$.

1982Ch16: $^{13}\text{C}(\gamma, \pi^+)^{13}\text{B}_{\text{g.s.}}$, calculated $\sigma(\theta)$.

1983Ch54: $^{13}\text{C}(\gamma, \pi^+)$, calculated $\sigma(\theta)$.

1983Mi06: $^{13}\text{C}(\gamma, \pi^+)$ $E=162, 173, 186$ MeV, calculated $\sigma(\theta)$.

1986Si07: $^{13}\text{C}(\gamma, \pi^+)$, calculated $\sigma(\theta)$, deduced Δ -isobar term.

1989Je02: $^{13}\text{C}(\gamma, \pi^+)$, calculated $\sigma(\theta)$, theory, $E=193$ MeV. Chiral Bag Model.

1991Er06: Comparison of calculated (e, e') , (γ, π^+) and (π^-, γ) cross sections at $E \approx 180, 200$ MeV.

 ^{13}B Levels

E(level)	Comments
0	
3.5×10^3 [†]	
6.4×10^3 [†]	
9.5×10^3 [†]	E(level): other: 9000 (1983Mi06).
13000 [†]	

[†] E_x from (**1994Ch39**); levels may contain a complex of states. Some states are not associated with Adopted Levels because inadequate details are given in the literature to make an association.