

$^{12}\text{C}(\text{t,d}), ^{13}\text{C}(\text{t,t}), (\text{t,t}')$ 1966GI01,1988Si08

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

1961Ba10: $^{12}\text{C}(\text{t,d}_0)$ E=5.5 MeV; measured angular distribution.

1966GI01: $^{12}\text{C}(\text{t,d})$ E=8,12 MeV; measured $\sigma(\text{E}_d, \theta)$; ^{13}C deduced levels, reduced width. Enriched ^{13}C targets.

1988Si08: $^{12}\text{C}(\text{t,d}), ^{13}\text{C}(\text{t,t}), (\text{t,t}')$ E=38 MeV; measured $\sigma(\theta)$; deduced potential parameters. ^{13}C levels deduced β_2, β_4 , single particle Γ of the resonances, spectroscopic factors. Optical DWBA analyses.

1961Ba10: $^{12}\text{C}(\text{t,d}_0)$; analyzed ^{13}C production.

2008Za05: $^{12}\text{C}(\text{t,d})$; calculated energy and angular distributions.

2007Li55: $^{13}\text{C}(\text{t,t}')$ E<40 MeV; analyzed elastic scattering σ and angular distribution data to obtain a set of global optical model potential parameters. Compared results to other calculations.

2009Pa07: $^{13}\text{C}(\text{t,t})$ E=38 MeV; analyzed $\sigma(\theta)$ using global optical model potential GDP08; deduced set of global optical potential parameters.

2015Pa10: $^{13}\text{C}(\text{t,t})$ E=4-118.5 MeV; analyzed $\sigma(\theta)$ for 142 sets of experimental data; deduced optical model parameters.

 ^{13}C Levels

E(level) [†]	J ^π [‡]	C ² S (Finite Range=0) [†]	Comments
0 [‡]	1/2 ^{-‡}	0.74	$\beta_2 = -0.428$ 40, $\beta_4 = -0.20$ 10 (1988Si08). C ² S (Finite Range=0): See also S=0.81 (1966GI01).
3088 [‡]	1/2 ^{+‡}	0.28	C ² S (Finite Range=0): See also S=0.90 (1966GI01).
3684 [‡]	3/2 ^{-‡}	0.14	C ² S (Finite Range=0): See also 0.28 (1966GI01).
3854 [‡]	5/2 ^{+‡}	0.61	C ² S (Finite Range=0): See also S=0.77 (1966GI01).
6860 [#]	5/2 ^{+ #}	0.03	
7490	7/2 ⁺	0.03	
7550 [#]	5/2 ^{- #}	0.02	
7690?	3/2 ⁺	0.015	
8200	3/2 ⁺	0.014	
9500	9/2 ⁺	0.006	
10750	7/2 ⁻	0.09	

[†] From DWBA analysis of spectroscopic factors in (1988Si08: $^{12}\text{C}(\text{t,d})$).

[‡] Also reported in (1966GI01 and 1988Si08: $^{13}\text{C}(\text{t,t}')$).

[#] Also reported in (1988Si08: $^{13}\text{C}(\text{t,t}')$).