

Table 13.12 from (1981AJ01): Resonances in $^{12}\text{C}(n, n)^{12}\text{C}$ ^a

E_{res} (MeV \pm keV)	Γ_{cm} (keV)	$^{13}\text{C}^*$ (MeV)	l_n	J^π	
		3.09	0	$\frac{1}{2}^+$	$\theta^2 = 0.185$ ^b
2.079 ± 3	6	6.864	2	$\frac{5}{2}^+$	^c
2.819 ± 3	1.2 ± 0.3	7.547			
2.94 ± 10	124 ± 7 ^d	7.66	2	$\frac{3}{2}^+$	
3.472 ± 15	1000 ± 50 ^d	8.149	2	$\frac{3}{2}^+$	$\theta^2 = 0.35$ ^c
4.259 ± 15	210 ± 15 ^d	8.875	1	$\frac{1}{2}^-$	$\Gamma_{\text{el}}/\Gamma = 1.00$ ^c
4.93707 ± 0.07 ^e	1.9 ± 0.15 ^e	9.4998	1	$(\frac{1}{2}^-, \frac{3}{2}^-)$	1.00 ^c
5.368 ± 5	26 ± 3	9.897	1	$\frac{3}{2}^-$	0.70 ± 0.10 ^c
6.294 ± 5	53 ± 4	10.751	3	$\frac{7}{2}^-$	0.70 ± 0.10
6.5		10.9			
6.558 ± 8	37 ± 4	10.994	(0)	$(\frac{1}{2}^+)$	0.40 ± 0.10
6.7		11.1			
(7.4)	(250)	(11.8)		$(\geq \frac{5}{2})$	
7.759 ± 8	(200)	12.102		$(> \frac{7}{2})$	
(8.1)	(150)	(12.4)			
9.3	370	13.5			
11.1	450	15.2		$(\geq \frac{3}{2})$	
12.1	230	16.1			
15.8	≈ 460	19.5	1	$(\frac{1}{2}, \frac{3}{2})^-$	
19.6 ± 200	≈ 1000	23.0			

^a See [Tables 13.10 in \(1970AJ04\)](#) and [13.16 in \(1976AJ04\)](#) for references. See also [\(1973MU14\)](#).

^b $\gamma_n^2 = 540$ keV, radius = 4.80 fm ([1970ME1C](#): single bound state + hard sphere scattering).

^c See also [Table 1 in \(1973DA17\)](#).

^d Γ_n for $^{13}\text{C}^*(7.69, 8.2, 8.86)$ are reported to be 170, 1110 and 170 keV, respectively ([1980HO11](#); $^{13}\text{C}(\gamma, n_0)$).

^e Derived from a lorentzian probability plot ([1980CI03](#)).