

Table 13.10 from (1991AJ01): Resonances in  $^{12}\text{C}(n, n)^{12}\text{C}$  <sup>a</sup>

$E_{\text{res}}$ (MeV $\pm$ keV)	$\Gamma_{\text{c.m.}}$ (keV)	$^{13}\text{C}^*$ (MeV)	$J^\pi$	$\Gamma_n/\Gamma$
$2.079 \pm 3$	6	$6.864^e$	$\frac{5}{2}^+$	
$2.819 \pm 3$	$1.2 \pm 0.3$	$7.546^e$		
$2.94 \pm 10$	$124 \pm 7$	$7.66^e$	$\frac{3}{2}^+$	
$3.472 \pm 15$	$1000 \pm 50$	8.149	$\frac{3}{2}^+$	
$4.259 \pm 15$	$210 \pm 15$	8.874	$\frac{1}{2}^-$	1.00
$4.93707 \pm 0.07^b$	$1.9 \pm 0.15^b$	$9.4998^e$	$(\frac{9}{2}^+)$	1.00
$5.368 \pm 5$	$26 \pm 3$	9.897	$\frac{3}{2}^-$	$0.70 \pm 0.10$
$6.294 \pm 5$	$53 \pm 4$	10.751	$\frac{7}{2}^-$	$0.70 \pm 0.10$
6.5		10.9		
$6.558 \pm 8$	$37 \pm 4$	10.994	$(\frac{1}{2}^+)$	$0.40 \pm 0.10$
6.7		11.1		
$7.35 \pm 50$	$129 \pm 40$	11.72	$\frac{3}{2}^-$	$0.80 \pm 0.08$
$7.62 \pm 90$	$494 \pm 80$	11.97	$\frac{5}{2}^+$	$0.51 \pm 0.06$
$7.78 \pm 80$	$538 \pm 65$	12.12	$\frac{3}{2}^+$	$0.28 \pm 0.05$
$7.79 \pm 50$	$77 \pm 30$	12.13	$\frac{5}{2}^-$	$0.43 \pm 0.06$
$7.80 \pm 70$	$426 \pm 70$	12.14	$\frac{1}{2}^+$	$0.50 \pm 0.07$
$7.94 \pm 70$	$186 \pm 50$	12.27	$\frac{3}{2}^-$	$0.73 \pm 0.08$
$8.12 \pm 50$	$114 \pm 40$	12.43	$\frac{7}{2}^-$	$0.42 \pm 0.06$
9.35	$619 \pm 50$	13.57	$\frac{7}{2}^-$	$0.18 \pm 0.03$
9.96		14.13	$\frac{3}{2}^-$	
10.88	450	14.98	$\frac{7}{2}^-$	
$11.02^c$		15.11	$\frac{3}{2}^-; T = \frac{3}{2}$	$0.062 \pm 0.016$
11.20		15.27	$\frac{9}{2}^+$	
11.40		15.46	$\frac{3}{2}^-$	
12.1	230	16.1	$(\frac{5}{2}^- + \frac{7}{2}^-)$	
$13.65^c$	$17 \pm 6$	$17.533 \pm 3$		
$14.25^c$	$12 \pm 7$	$18.082 \pm 3$		
$15.80^d$	$\geq 500$	19.51	$\frac{5}{2}^-$	
$16.39^c$	$11 \pm 8$	$20.057 \pm 4$		
$16.45^d$	1090	20.11	$\frac{1}{2}^-$	0.16

Table 13.10 from (1991AJ01): Resonances in  $^{12}\text{C}(n, n)^{12}\text{C}$  <sup>a</sup> (continued)

$E_{\text{res}}$ (MeV $\pm$ keV)	$\Gamma_{\text{c.m.}}$ (keV)	$^{13}\text{C}^*$ (MeV)	$J^\pi$	$\Gamma_n/\Gamma$
16.45 <sup>d</sup>	440	20.11	$\frac{5}{2}^+$	0.05
16.53 <sup>d</sup>	630	20.19	$\frac{7}{2}^+$	0.11
16.65 <sup>d</sup>	1560	20.30	$\frac{7}{2}^-$	0.08
16.70 <sup>d</sup>	320	20.34	$\frac{9}{2}^+$	0.06
16.90 <sup>d</sup>	$\approx 500$	20.53	$\frac{5}{2}^-$	
18.18 <sup>c</sup>	$18 \pm 9$	$21.703 \pm 4$		
$19.6 \pm 200$	$\approx 1000$	23.0		

<sup>a</sup> For earlier references and additional information see [Tables 13.10 in \(1970AJ04\)](#), [13.16 in \(1976AJ04\)](#), [13.12 in \(1981AJ01\)](#) and [13.10 in \(1986AJ01\)](#). See the discussions in [\(1982KN02\)](#), [1985TO02](#), [1987TO03](#).

<sup>b</sup> Derived from a lorentzian probability plot [\(1980CI03\)](#).

<sup>c</sup> Weak resonance anomaly attributed to  $T = \frac{3}{2}$  state [\(1987HI03\)](#) [and see for  $(J + \frac{1}{2}) \Gamma_{n0}/\Gamma$ ].

<sup>d</sup> From phase-shift analysis by [\(1987TO03\)](#).

<sup>e</sup> For the decay of these states, reported in the interaction of  $^{14}\text{N}$  ions (35 MeV/A) with a silver target, see [\(1989HE24\)](#).