Table 12.14 from (2017KE05): The decay of some ^{12}C levels [a]

E_x (MeV)	Widths
4.44	$\Gamma_\gamma = 10.8 \pm 0.6$ meV
7.65	$\Gamma_\pi/\Gamma = (6.7 \pm 0.6) \times 10^{-6}$ [j]
	$\Gamma_{\rm E0} = \Gamma_\pi = (62.3 \pm 2.0)$ μeV [k]
	$\Gamma = \Gamma_\pi \times \Gamma/\Gamma_\pi = 9.3 \pm 0.9$ eV
	$\Gamma_{\rm rad}/\Gamma$ [b] $= (4.16 \pm 0.11) \times 10^{-4}$ [l]
	$\Gamma_{\rm rad} = \Gamma_{\rm rad}/\Gamma \times \Gamma = 3.87 \pm 0.39$ meV
	$\Gamma_{\rm E2} = \Gamma_\gamma = \Gamma_{\rm rad} - \Gamma_\pi = 3.81 \pm 0.39$ meV
9.64	$\Gamma_{\rm rad}/\Gamma < 4.1 \times 10^{-7}$ [n]
	$\Gamma_{\rm rad} < 19$ meV [h,n]
	$\Gamma_{\gamma_0} = (3.1 \pm 0.4) \times 10^{-4}$ eV [m]
9.87	$\Gamma_\gamma = 60 \pm 10$ meV [o]
12.71	$\Gamma_{\gamma_0} = 0.35 \pm 0.05$ eV [q]
	$\Gamma_{\gamma_0}/\Gamma = (1.93 \pm 0.12) \times 10^{-2}$ [p]
	$\Gamma_{\gamma_1}/\Gamma_{\gamma_0} = 0.150 \pm 0.018$ [c]
	$\Gamma_{\gamma_1} = 0.053 \pm 0.010$ eV [h,p,q]
	$\Gamma = 18.1 \pm 2.8$ eV [h,p]
	$\Gamma_\alpha/\Gamma = 0.978 \pm 0.001$ [d,h,p]
	$\Gamma_\alpha = 17.7 \pm 2.8$ eV [d,h,p]
15.11	$\Gamma_{\gamma_0} = 38.5 \pm 0.8$ eV [g]
	$\Gamma_{\gamma_1} = 0.96 \pm 0.13$ eV [e,h]
	$\Gamma_\gamma(15.11 \rightarrow 7.65) = 1.09 \pm 0.3$ eV [e,h]
	$\Gamma_\gamma(15.11 \rightarrow 10.3) = 1.60 \pm 0.67$ eV [h]
	$\Gamma_\gamma(15.11 \rightarrow 12.71) = 0.59 \pm 0.17$ eV [e,h]
	$\Gamma_\gamma = 41.8 \pm 1.1$ eV [e,h]
	$\Gamma_\alpha/\Gamma = \Gamma_{\alpha_1}/\Gamma = 0.041 \pm 0.009$ [i]
	$\Gamma_\gamma/\Gamma = 0.959 \pm 0.009$ [i,r]
	$\Gamma_\alpha = 1.79 \pm 0.39$ eV [h,i]
	$\Gamma = 43.6 \pm 1.0$ eV [h]
16.11 [f]	$\Gamma = 5.3 \pm 0.2$ keV
	$\Gamma_{\gamma_0}/\Gamma_{\gamma_1} = (4.6 \pm 0.7)\%$ [p]
	$\Gamma_{\gamma_1}/\Gamma = (2.42 \pm 0.29) \times 10^{-3}$ [p]

Table 12.14 from (2017KE05): The decay of some ^{12}C levels [a] (continued)

E_x (MeV)	Widths
	$\Gamma_{\gamma}(16.11 \rightarrow 9.64)/\Gamma_{\gamma_1} = (2.4 \pm 0.4)\%$ [p]
	$\Gamma_{\gamma}(16.11 \rightarrow 12.71)/\Gamma_{\gamma_1} = (1.46 \pm 0.25)\%$ [p]
	$\Gamma_{\gamma_0} = 0.59 \pm 0.11$ eV [h,‡]
	$\Gamma_{\gamma_1} = 12.8 \pm 1.5$ eV [h,§]
	$\Gamma_{\gamma}(16.11 \rightarrow 9.64) = 0.31 \pm 0.06$ eV [h]
	$\Gamma_{\gamma}(16.11 \rightarrow 10.8) = 0.48 \pm 0.12$ eV [†]
	$\Gamma_{\gamma}(16.11 \rightarrow 12.71) = 0.19 \pm 0.04$ eV [h]
	$\Gamma_{\gamma} = 14.4 \pm 1.7$ eV [h]
	$\Gamma_{\mathrm{p}} = 21.5 \pm 3.3$ eV [¶]
	$\Gamma_{\alpha_0}/\Gamma_{\alpha_1} = 0.051 \pm 0.005$ [£]
	$\Gamma_{\alpha_0} = 0.26 \pm 0.03$ eV [h]
	$\Gamma_{\alpha_1} = 5.0 \pm 0.2$ eV [h]
16.62 [w,x]	$\Gamma_{\mathrm{p}_0}/\Gamma = 0.5$
	$\Gamma_{\alpha_1}/\Gamma = 0.5$
	$\Gamma_{\gamma_0} = (48 \pm 8) \times 10^{-3}$ eV
	$\Gamma_{\gamma_1} = 8.0$ eV
17.23 [s,y]	$\Gamma_{\mathrm{p}_0}/\Gamma = 0.87$
	$\Gamma_{\alpha_0}/\Gamma = 0.0087$
	$\Gamma_{\alpha_1}/\Gamma = 0.122$
	$\Gamma_{\gamma_0} = 44$ eV
	$\Gamma_{\gamma_1} = 5$ eV
17.76 [w]	$\Gamma_{\mathrm{p}_0}/\Gamma = 0.82$
	$\Gamma_{\alpha_0}/\Gamma = 0.05$
	$\Gamma_{\alpha_1}/\Gamma = 0.124$
	$\Gamma_{\gamma} = 3.7 \pm 1.5$ eV [t]
18.16	$(2J+1)\Gamma_{\gamma_{15.1}} \geq 2.8 \pm 0.6$ eV
18.35 [w,z]	$\Gamma_{\mathrm{p}_0}/\Gamma = 0.22$
	$\Gamma_{\alpha_0}/\Gamma = 0.21$
	$\Gamma_{\alpha_1}/\Gamma = 0.57$
	$\Gamma_{\gamma_1} = 3.2$ eV
	$\Gamma_{\gamma_{9.61}} = 5.7 \pm 2.3$ eV

Table 12.14 from (2017KE05): The decay of some ^{12}C levels [a] (continued)

E_x (MeV)	Widths
18.4 [w]	$\Gamma_{p_0}/\Gamma = 0.79$
	$\Gamma_{p_1}/\Gamma = 0.21$
18.80 [w]	$\Gamma_{p_0}/\Gamma = 0.97$
	$\Gamma_{p_1}/\Gamma = 0.02$
	$\Gamma_{n}/\Gamma = 0.011$
	$\Gamma_{\gamma_0} = (0.4)$ eV
	$\Gamma_{\gamma_1} = 2$ eV
19.2 [w]	$\Gamma_{p_0}/\Gamma = 0.27$
	$\Gamma_{p_1}/\Gamma = 0.36$
	$\Gamma_{n}/\Gamma = 0.14$
	$\Gamma_{\alpha_0}/\Gamma = 0.05$
	$\Gamma_{\alpha_1}/\Gamma = 0.18$
	$\Gamma_{\gamma_0} = 25$ eV
	$\Gamma_{\gamma_1} = 10$ eV
19.4 [w]	$\Gamma_{p_0}/\Gamma = 0.41$
	$\Gamma_{p_1}/\Gamma = 0.05$
	$\Gamma_{n}/\Gamma = 0.09$
	$\Gamma_{\alpha_0}/\Gamma = 0.02$
	$\Gamma_{\alpha_1}/\Gamma = 0.41$
	$\Gamma_{\gamma_1} = 3$ eV
27.595 [u]	$\Gamma_{\alpha_0}/\Gamma = 0.105 \pm 0.030$
	$\Gamma_{\alpha+^8\mathrm{Be}^*}/\Gamma = 0.091 \pm 0.035$
	$\Gamma_{p_0}/\Gamma = 0.030 \pm 0.022$
	$\Gamma_{p_1}/\Gamma = 0.080 \pm 0.023$
	$\Gamma_{p_2}/\Gamma = 0 \pm 0.033$
	$\Gamma_{p_3}/\Gamma = 0.084 \pm 0.032$
	$\Gamma_{p_{4+5}}/\Gamma = 0.08 \pm 0.05$
	$\Gamma_{d}/\Gamma = 0.028 \pm 0.020$
28.20	$\Gamma \approx \Gamma_{^3\mathrm{He}}$
	$\Gamma_{\gamma_0} \geq 11.8$ eV
	$\Gamma_{\gamma_1} \geq 4.6$ eV

Table 12.14 from (2017KE05): The decay of some ^{12}C levels [a] (continued)

E_x (MeV)	Widths
29.63 [v]	$\Gamma_{\gamma_2} \geq 11.3$ eV $\Gamma_p/\Gamma = 0.8 \pm 0.2$ $\Gamma_{p0}/\Gamma \approx 0.4$ $\Gamma_\alpha/\Gamma \approx 0.2$

[a] For references see Table 12.8 in (1980AJ01). See also Tables 12.15, 12.19, 12.20 and 12.26 here.
[b] $\Gamma_{rad} \equiv \Gamma_\gamma + \Gamma_\pi(e^+ + e^-)$.
[c] The branching ratios for the $12.71 \rightarrow 4.44$ and $12.71 \rightarrow 0$ transitions are $(13.0 \pm 1.4)\%$ and $(87.0 \pm 1.4)\%$ respectively (1977AD02). See earlier reported values in Table 12.9 of (1975AJ02).
[d] Assuming $\Gamma_\alpha + \Gamma_{\gamma_0} + \Gamma_{\gamma_1} = \Gamma$.
[e] Based on Γ_{γ_0} of (1983DE53) and on branching ratios of (1972AL03): ^{12}C*(15.11) $\rightarrow^{12}$C*(0, 4.4, 7.65, 12.71) are $(92 \pm 2)\%$, $(2.3 \pm 0.3)\%$, $(2.6 \pm 0.7)\%$ and $(1.4 \pm 0.4)\%$, respectively. In addition, an undetected branching of 1.6% to ^{12}C*(10.3) is indicated by the β-decay work (1972AL03) and is included. See also (1980AJ01) and Table 12.9 of (1975AJ02).
[f] F. Ajzenberg-Selove private communication with E.G. Adelberger.
[g] (1983DE53) analyzed new data along with those of (1973CH16) ($\Gamma_\gamma = 37.0 \pm 1.1$ eV). The combined analysis result is adopted. See earlier results listed in Table 12.8 of (1968AJ02).
[h] Deduced. [i] From (1974BA42). See reaction 83.
[j] Weighted average of (1972OB01, 1977RO05, 1977AL31).
[k] From analysis of world (e, e′) data given in (2010CH17, 2011VO16).
[l] From $10^4 \times \Gamma_{rad}/\Gamma = 3.3 \pm 0.9$ (1961AL23), 3.5 ± 1.2 (1964HA23), 4.20 ± 0.22 (1974CH03), 4.4 ± 0.2 (1975DA08), 4.15 ± 0.34 (1975MA34), 4.09 ± 0.27 (1976OB03), 3.87 ± 0.25 (1976MA46). The value from (1961AL23) has sometimes been miscopied as 3.4, which has no impact on the average. The value of (1975DA08) has been corrected, as indicated in (1976OB03). The value $(2.82 \pm 0.29) \times 10^{-4}$ (1963SE23) is a statistical outlier; including this value yields the average $(3.99 \pm 0.18) \times 10^{-4}$ that is the weighted average using the external uncertainty. The value in (1990AJ01) did not use the corrected (1975DA08) value. In (2014FR09), the value $(4.19 \pm 0.10) \times 10^{-4}$ is deduced by rounding the above values to the nearest tenth.
[m] (1967CR01). [n] (1974CH32). [o] (2013ZI03). [p] (1977AD02).
[q] (1974CE01). [r] Assume $\Gamma_\gamma/\Gamma = 1 - \Gamma_\alpha/\Gamma$.
[s] (1965SE06). $(2J + 1)\Gamma_{\gamma_0} \geq 115$ eV.
[t] Decays to ^{12}C*(12.71) (1982HA12).
[u] From (1979FR04). [v] From (1976AS01). [w] From (1965SE06).

[x] I_γ(rel. at $\theta = 55°$) $= 15.7 \pm 1.6$, $\equiv 100$, < 0.07, 6.8 ± 0.4 and 0.16 ± 0.03 to ^{12}C*(0, 4.4, 7.65, 12.71, 15.11), respectively (1990ZI02).

[y] I_γ(rel. at $\theta = 55°$) $= 168 \pm 17$, $\equiv 100$, 1.9 ± 0.2, 1.36 ± 0.07 and 2.09 ± 0.13 to ^{12}C*(0, 4.4, 7.65, 12.71, 15.11), respectively (1990ZI02).

[z] I_γ(rel. at $\theta = 55°$) $= 104 \pm 11$, $\equiv 100$, < 0.02, 68 ± 1, 14.0 ± 1.2 and 10 ± 3 to ^{12}C*(0, 4.4, 7.65, 9.64, 12.71, 15.11), respectively (1990ZI02).

† (2016LA27).

‡ Discrepancies in Γ_{γ_0} values measured in electron scattering and nuclear reactions are reviewed in (1978FR03). The results do not appear to converge. $\Gamma_{\gamma_0} = 0.59 \pm 0.11$ eV [(1977AD02): ^{10}B(^{3}He, pγ)] and $\Gamma_{\gamma_0} = 0.35 \pm 0.04$ eV [(1978FR03): ^{12}C(e, e$'$)] are most widely quoted. In the present case we accept (1977AD02), but we highlight the different analysis of decay partial widths using $\Gamma_{\gamma_0} = 0.35 \pm 0.04$ eV given in (2016LA27).

§ In the analysis of (2016LA27) the value $\Gamma_{\gamma_1} = 10.5 \pm 1.6$ eV is deduced from Γ and the thick target ^{11}B(p, α) and ^{11}B(p, γ) yield studies of (1992CE02).

¶ Deduced from Γ, σ(p, γ_{0+1}), $\Gamma_p\Gamma_{\gamma_{0+1}}/\Gamma^2$ and $\Gamma_{\gamma_{0+1}}/\Gamma$.

£ (2016LA24). See other values such as 0.078 ± 0.010 (2012AL22) and 0.045 ± 0.006 (1961SE10).