CHARMED BARYONS ($C = +1$)

$\Lambda_c^+ = u\,d\,c$, $\Sigma_c^{++} = u\,u\,c$, $\Sigma_c^+ = u\,d\,c$, $\Sigma_c^0 = d\,d\,c$,
$\Xi_c^+ = u\,s\,c$, $\Xi_c^0 = d\,s\,c$, $\Omega_c^0 = s\,s\,c$

Λ_c^+

$I(J^P) = 0(\frac{1}{2}^+)$

Mass $m = 2286.46 \pm 0.14$ MeV
Mean life $\tau = (202.6 \pm 1.0) \times 10^{-15}$ s
$c\tau = 60.75$ μm

Decay asymmetry parameters

α FOR $\Lambda_c^+ \to \Lambda\pi^+ = -0.768 \pm 0.015$ (S = 3.4)
α FOR $\Lambda_c^+ \to \Lambda\rho^+ = -0.76 \pm 0.07$
α FOR $\Lambda_c^+ \to \Sigma^+\pi^0 = -0.484 \pm 0.027$
α FOR $\Lambda_c^+ \to \Sigma^+\eta = -0.99 \pm 0.06$
α FOR $\Lambda_c^+ \to \Sigma^+\eta' = -0.46 \pm 0.07$
α FOR $\Lambda_c^+ \to \Sigma^0\pi^+ = -0.466 \pm 0.018$
α FOR $\Lambda_c^+ \to \Sigma(1385)^+\pi^0 = -0.92 \pm 0.09$
α FOR $\Lambda_c^+ \to \Sigma(1385)^0\pi^+ = -0.79 \pm 0.11$
α FOR $\Lambda_c^+ \to \Lambda\ell^+\nu_\ell = -0.875 \pm 0.033$
α FOR $\Lambda_c^+ \to pK_S^0 = -0.754 \pm 0.010$
α FOR $\Lambda_c^+ \to \Lambda K^+ = -0.546 \pm 0.035$
α FOR $\Lambda_c^+ \to \Sigma^0 K^+ = -0.54 \pm 0.20$
α FOR $\Lambda_c^+ \to \Lambda(1405)\pi^+ = 0.58 \pm 0.28$
α FOR $\Lambda_c^+ \to \Lambda(1520)\pi^+ = 0.93 \pm 0.09$
α FOR $\Lambda_c^+ \to \Lambda(1600)\pi^+ = 0.2 \pm 0.5$
α FOR $\Lambda_c^+ \to \Lambda(1670)\pi^+ = 0.82 \pm 0.08$
α FOR $\Lambda_c^+ \to \Lambda(1690)\pi^+ = 0.958 \pm 0.034$
α FOR $\Lambda_c^+ \to \Lambda(2000)\pi^+ = -0.57 \pm 0.19$
α FOR $\Lambda_c^+ \to \Delta(1232)^{++}K^- = 0.55 \pm 0.04$
α FOR $\Lambda_c^+ \to \Delta(1600)^{++}K^- = -0.50 \pm 0.18$
α FOR $\Lambda_c^+ \to \Delta(1700)^{++}K^- = 0.22 \pm 0.08$
α FOR $\Lambda_c^+ \to \overline{K}_0^*(700)^0 p = -0.1 \pm 0.7$
α FOR $\Lambda_c^+ \to \overline{K}_0^*(1430)^0 p = 0.34 \pm 0.14$
α FOR $\Lambda_c^+ \to \Xi^0 K^+ = 0.01 \pm 0.16$

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda\pi^+$, $\overline{\Lambda}_c^- \to \overline{\Lambda}\pi^-$ = 0.020 ± 0.016
$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Sigma^0\pi^+$, $\overline{\Lambda}_c^- \to \overline{\Sigma}^0\pi^-$ = −0.02 ± 0.05
$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda e^+\nu_e$, $\overline{\Lambda}_c^- \to \overline{\Lambda} e^-\overline{\nu}_e$ = 0.00 ± 0.04
$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda K^+$, $\overline{\Lambda}_c^- \to \overline{\Lambda} K^-$ = −0.02 ± 0.11
$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Sigma^0 K^+$, $\overline{\Lambda}_c^- \to \overline{\Sigma}^0 K^-$ = 0.1 ± 0.4
$A_{CP}(\Lambda X)$ in $\Lambda_c \to \Lambda X$, $\overline{\Lambda}_c \to \overline{\Lambda} X$ = (2 ± 7)%
$A_{CP}(\Lambda K^+)$ in $\Lambda_c \to \Lambda K^+$, $\overline{\Lambda}_c \to \overline{\Lambda} K^-$ = 0.021 ± 0.026
$A_{CP}(\Sigma^0 K^+)$ in $\Lambda_c \to \Sigma^0 K^+$, $\overline{\Lambda}_c \to \overline{\Sigma}^0 K^-$ = 0.03 ± 0.05
$\Delta A_{CP} = A_{CP}(\Lambda_c^+ \to pK^+K^-) - A_{CP}(\Lambda_c^+ \to p\pi^+\pi^-)$ = (0.3 ± 1.1)%

Branching fractions marked with a footnote, e.g. [*a*], have been corrected for decay modes not observed in the experiments. For example, the submode fraction $\Lambda_c^+ \to p\overline{K}^*(892)^0$ seen in $\Lambda_c^+ \to pK^-\pi^+$ has been multiplied up to include $\overline{K}^*(892)^0 \to \overline{K}^0\pi^0$ decays.

Λ_c^+ DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Hadronic modes with a p or n: $S = -1$ final states				
pK_S^0		(1.63± 0.07) %	S=1.1	873
pK_L^0		(1.67± 0.07) %		873
$pK^-\pi^+$		(6.37± 0.21) %	S=1.2	823
$p\overline{K}_0^*(700)^0$		(1.9 ± 0.6) × 10^{-3}		719
$p\overline{K}^*(892)^0$	[*a*]	(1.42± 0.06) %		685
$p\overline{K}_0^*(1430)$		(9.4 ± 1.8) × 10^{-3}		†
$\Delta(1232)^{++}K^-$		(1.80± 0.08) %		710
$\Delta(1600)^{++}K^-$		(2.9 ± 1.0) × 10^{-3}		–
$\Delta(1700)^{++}K^-$		(2.5 ± 0.6) × 10^{-3}		–
$\Lambda(1405)^0\pi^+$		(4.9 ± 1.9) × 10^{-3}		–
$\Lambda(1520)\pi^+$	[*a*]	(1.19± 0.16) × 10^{-3}		628
$\Lambda(1600)\pi^+$		(3.3 ± 1.2) × 10^{-3}		571
$\Lambda(1670)\pi^+$		(7.5 ± 2.1) × 10^{-4}		516
$\Lambda(1690)\pi^+$		(7.6 ± 2.3) × 10^{-4}		504
$\Lambda(2000)\pi^+$		(6.1 ± 0.7) × 10^{-3}		234
$pK^-\pi^+$ nonresonant		(3.5 ± 0.4) %		823
$pK_S^0\pi^0$		(2.12± 0.09) %	S=1.3	823
$pK_L^0\pi^0$		(2.02± 0.14) %		823
$nK_S^0\pi^+$		(1.86± 0.09) %		821
$nK_S^0K^+$		(3.9 $^{+1.7}_{-1.4}$) × 10^{-4}		612
$nK_S^0\pi^+\pi^0$		(8.5 ± 1.3) × 10^{-3}		756
$nK^-\pi^+\pi^+$		(1.90± 0.12) %		756
$p\overline{K}^0\eta$		(9.0 ± 0.6) × 10^{-3}	S=1.1	568
$pK_S^0\pi^+\pi^-$		(1.63± 0.10) %	S=1.1	754

$p K^0_L \pi^+ \pi^-$		(1.69± 0.11) %		754
$p K^- \pi^+ \pi^0$		(4.54± 0.27) %	S=1.6	759
$p K^*(892)^- \pi^+$	[a]	(1.4 ± 0.5) %		580
$p (K^- \pi^+)_{\text{nonresonant}} \pi^0$		(4.7 ± 0.8) %		759
$\Delta(1232) \overline{K}^*(892)$		seen		419
$p K^- 2\pi^+ \pi^-$		(1.4 ± 1.0) $\times 10^{-3}$		671
$p K^- \pi^+ 2\pi^0$		(1.0 ± 0.5) %		678

Hadronic modes with a *p* or *n*: $S = 0$ final states

$p \pi^0$		(1.8 ± 0.4) $\times 10^{-4}$		945
$n \pi^+$		(6.6 ± 1.3) $\times 10^{-4}$		944
$p \eta$		(1.49± 0.08) $\times 10^{-3}$		856
$p \eta'$		(4.9 ± 0.9) $\times 10^{-4}$		639
$p \omega(782)^0$		(9.0 ± 1.0) $\times 10^{-4}$	S=1.2	751
$p \pi^+ \pi^-$		(4.69± 0.22) $\times 10^{-3}$		927
$p f_0(980)$	[a]	(3.5 ± 2.3) $\times 10^{-3}$		614
$p \rho(770)^0$		(1.5 ± 0.4) $\times 10^{-3}$		–
$n \pi^+ \pi^0$		(6.4 ± 0.9) $\times 10^{-3}$		927
$n K^+ \pi^0$		< 7.1 $\times 10^{-4}$	CL=90%	824
$n \pi^+ \pi^- \pi^+$		(4.5 ± 0.8) $\times 10^{-3}$		895
$p 2\pi^+ 2\pi^-$		(2.3 ± 1.5) $\times 10^{-3}$		852
$p K^+ K^-$		(1.08± 0.04) $\times 10^{-3}$		616
$p \phi$	[a]	(1.06± 0.13) $\times 10^{-3}$	S=1.1	590
$p K^+ K^-$ non-ϕ		(5.4 ± 1.2) $\times 10^{-4}$		616
$p K^0_S K^0_S$		(2.41± 0.18) $\times 10^{-4}$		610
$p \phi \pi^0$		(10 ± 4) $\times 10^{-5}$		460
$p K^+ K^- \pi^0$ nonresonant		< 6.3 $\times 10^{-5}$	CL=90%	494

Hadronic modes with a hyperon: $S = -1$ final states

$\Lambda \pi^+$		(1.32± 0.05) %	S=1.1	864
$\Lambda(1670) \pi^+$, $\Lambda(1670) \to \eta \Lambda$		(3.5 ± 0.5) $\times 10^{-3}$		–
$\Lambda \pi^+ \pi^0$		(7.16± 0.33) %		844
$\Lambda \rho^+$		(4.1 ± 0.5) %		636
$\Sigma(1385)^+ \pi^0$, $\Sigma^+ \to \Lambda \pi^+$		(5.1 ± 0.7) $\times 10^{-3}$		–
$\Sigma(1385)^0 \pi^+$, $\Sigma^0 \to \Lambda \pi^0$		(5.7 ± 0.8) $\times 10^{-3}$		–
$\Lambda \pi^- 2\pi^+$		(3.69± 0.26) %	S=1.5	807
$\Sigma(1385)^+ \pi^+ \pi^-$, $\Sigma^{*+} \to \Lambda \pi^+$		(1.0 ± 0.5) %		688
$\Sigma(1385)^- 2\pi^+$, $\Sigma^{*-} \to \Lambda \pi^-$		(7.8 ± 1.4) $\times 10^{-3}$		688
$\Lambda \pi^+ \rho^0$		(1.5 ± 0.6) %		524
$\Sigma(1385)^+ \rho^0$, $\Sigma^{*+} \to \Lambda \pi^+$		(5 ± 4) $\times 10^{-3}$		363
$\Lambda \pi^- 2\pi^+$ nonresonant		< 1.1 %	CL=90%	807
$\Lambda \pi^- \pi^0 2\pi^+$ total		(2.3 ± 0.8) %		757
$\Lambda \pi^+ \omega$	[a]	(1.5 ± 0.5) %		517

$\Lambda\pi^-\pi^0 2\pi^+$, no η or ω		$<8 \times 10^{-3}$	CL=90%	757
$\Lambda\pi^+\eta$	[a]	(1.92 ± 0.06) %		691
$\Sigma(1385)^+\eta$	[a]	$(6.7 \pm 0.6) \times 10^{-3}$		570
$\Lambda a_0(980)^+$, $a_0^+ \to \pi^+\eta$		(1.04 ± 0.17) %		–
$\Lambda(1670)\pi^+$, $\Lambda(1670) \to \Lambda\eta$		$(2.7 \pm 0.6) \times 10^{-3}$		–
$\Lambda K^+\overline{K}^0$		$(5.9 \pm 0.5) \times 10^{-3}$	S=1.2	443
$\Xi(1690)^0 K^+$, $\Xi^{*0} \to \Lambda\overline{K}^0$		$(1.7 \pm 0.4) \times 10^{-3}$		286
$\Sigma^0\pi^+$		(1.29 ± 0.05) %	S=1.1	825
$\Sigma^0\pi^+\eta$		$(7.6 \pm 0.8) \times 10^{-3}$		635
$\Sigma^+\pi^0$		(1.27 ± 0.10) %	S=1.1	827
$\Sigma^+\eta$		$(3.4 \pm 0.4) \times 10^{-3}$		713
$\Sigma^+\eta'$		$(4.2 \pm 0.9) \times 10^{-3}$		391
$\Sigma^+\pi^+\pi^-$		(4.57 ± 0.18) %	S=1.1	804
$\Sigma^+\rho^0$		<1.7 %	CL=95%	575
$\Sigma^- 2\pi^+$		(1.87 ± 0.18) %		799
$\Sigma^0\pi^+\pi^0$		(3.6 ± 0.4) %		803
$\Sigma^+\pi^0\pi^0$		(1.57 ± 0.14) %		806
$\Sigma^0\pi^- 2\pi^+$		(1.13 ± 0.31) %		763
$\Sigma^+\omega$		(1.72 ± 0.20) %		569
$\Sigma^-\pi^0 2\pi^+$		(2.1 ± 0.4) %		762
$\Sigma^0 K^0_S K^+$		$<1.28 \times 10^{-3}$	CL=90%	337
$\Sigma^+ K^+ K^-$		$(3.66\pm 0.35) \times 10^{-3}$	S=1.1	349
$\Sigma^+\phi$	[a]	$(4.0 \pm 0.5) \times 10^{-3}$	S=1.1	295
$\Xi(1690)^0 K^+$, $\Xi^{*0} \to \Sigma^+ K^-$		$(1.03\pm 0.25) \times 10^{-3}$		286
$\Sigma^+ K^+ K^-$ nonresonant		$<8 \times 10^{-4}$	CL=90%	349
$\Xi^0 K^+$		$(5.5 \pm 0.7) \times 10^{-3}$		653
$\Xi^- K^+\pi^+$		$(6.3 \pm 0.5) \times 10^{-3}$		565
$\Xi^0 K^+\pi^0$		$(7.8 \pm 1.7) \times 10^{-3}$		574
$\Xi^0 K^0_S\pi^+$		$(3.7 \pm 0.6) \times 10^{-3}$		569
$\Xi(1530)^0 K^+$		$(4.9 \pm 0.6) \times 10^{-3}$	S=1.1	473

Hadronic modes with a hyperon: $S = 0$ final states

ΛK^+		$(6.54\pm 0.30) \times 10^{-4}$		781
$\Lambda K^+\pi^0$		$(1.50\pm 0.29) \times 10^{-3}$		722
$\Lambda K^0_S\pi^+$		$(1.73\pm 0.28) \times 10^{-3}$		718
$\Lambda K^*(892) K^{*+} \to K^0_S\pi^+$		seen		–
$\Lambda K^+\pi^+\pi^-$		$(4.2 \pm 1.6) \times 10^{-4}$		637
$\Sigma^0 K^+$		$(3.76\pm 0.31) \times 10^{-4}$		735
$\Sigma^+ K^0_S$		$(4.8 \pm 1.4) \times 10^{-4}$		736
$\Sigma^0 K^+\pi^+\pi^-$		$<6.5 \times 10^{-4}$	CL=90%	574
$\Sigma^0 K^+\pi^0$		$<5.0 \times 10^{-4}$	CL=90%	670
$\Sigma^+ K^+\pi^-$		$(2.05\pm 0.26) \times 10^{-3}$		670
$\Sigma^+ K^*(892)^0$	[a]	$(3.6 \pm 1.0) \times 10^{-3}$		469

$\Sigma^+ K^+ \pi^- \pi^0$		$< 1.1 \times 10^{-3}$	CL=90%	581
$\Sigma^- K^+ \pi^+$		$(3.8 \pm 1.2) \times 10^{-4}$		664

Doubly Cabibbo-suppressed modes

$p K^+ \pi^-$		$(1.13 \pm 0.17) \times 10^{-4}$		823

Semileptonic modes

$\Lambda e^+ \nu_e$		(3.56 ± 0.13) %		871
$\Lambda \pi^+ \pi^- e^+ \nu_e$		$< 3.9 \times 10^{-4}$	CL=90%	843
$p K^- e^+ \nu_e$		$(8.8 \pm 1.8) \times 10^{-4}$		874
$p K^0_S \pi^- e^+ \nu_e$		$< 3.3 \times 10^{-4}$	CL=90%	821
$\Lambda(1520) e^+ \nu_e$		$(1.0 \pm 0.5) \times 10^{-3}$		639
$\Lambda(1405)^0 e^+ \nu_e,\ \Lambda^0 \to p K^-$		$(4.2 \pm 1.9) \times 10^{-4}$		–
$\Lambda \mu^+ \nu_\mu$		(3.48 ± 0.17) %		867

Inclusive modes

e^+ anything		(4.06 ± 0.13) %		–
p anything		(50 ± 16) %		–
n anything		(32.6 ± 1.6) %		–
Λ anything		$(38.2 {}^{+2.9}_{-2.4})$ %		–
K^0_S anything		(10.90 ± 0.22) %		–
3prongs		(24 ± 8) %		–

$\Delta C = 1$ weak neutral current (*C1*) modes, or Lepton Family number (*LF*), or Lepton number (*L*), or Baryon number (*B*) violating modes

$p e^+ e^-$	*C1*	$< 5.5 \times 10^{-6}$	CL=90%	951
$p \mu^+ \mu^-$ non-resonant	*C1*	$< 2.9 \times 10^{-8}$	CL=90%	937
$p e^+ \mu^-$	*LF*	$< 9.9 \times 10^{-6}$	CL=90%	947
$p e^- \mu^+$	*LF*	$< 1.9 \times 10^{-5}$	CL=90%	947
$\overline{p} 2e^+$	*L,B*	$< 2.7 \times 10^{-6}$	CL=90%	951
$\overline{p} 2\mu^+$	*L,B*	$< 9.4 \times 10^{-6}$	CL=90%	937
$\overline{p} e^+ \mu^+$	*L,B*	$< 1.6 \times 10^{-5}$	CL=90%	947
$\Sigma^- \mu^+ \mu^+$	*L*	$< 7.0 \times 10^{-4}$	CL=90%	812

Radiative modes

$\Sigma^+ \gamma$		$< 2.5 \times 10^{-4}$	CL=90%	834

Exotic modes

$p \gamma_D$		[b] $< 8.0 \times 10^{-5}$	CL=90%	–

$\Lambda_c(2595)^+$

$I(J^P) = 0(\frac{1}{2}^-)$

The spin-parity follows from the fact that $\Sigma_c(2455)\pi$ decays, with little available phase space, are dominant. This assumes that $J^P = 1/2^+$ for the $\Sigma_c(2455)$.

Mass $m = 2592.25 \pm 0.28$ MeV
$m - m_{\Lambda_c^+} = 305.79 \pm 0.24$ MeV
Full width $\Gamma = 2.6 \pm 0.6$ MeV

$\Lambda_c^+\pi\pi$ and its submode $\Sigma_c(2455)\pi$ — the latter just barely — are the only strong decays allowed for an excited Λ_c^+ having this mass; and the submode seems to dominate.

$\Lambda_c(2595)^+$ DECAY MODES		Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$\Lambda_c^+\pi^+\pi^-$	[c]	(40±14) %		117
$\Sigma_c(2455)^{++}\pi^-$		(15± 6) %		3
$\Sigma_c(2455)^0\pi^+$		(15± 6) %		3
$\Lambda_c^+\pi^0\pi^0$	[c]	(60±14) %		135
$\Lambda_c^+\pi^0$	[d]	< 140 %	90%	258
$\Lambda_c^+\gamma$		< 40 %	90%	288

$\Lambda_c(2625)^+$

$I(J^P) = 0(\frac{3}{2}^-)$

J^P has not been measured; $\frac{3}{2}^-$ is the quark-model prediction.

Mass $m = 2628.00 \pm 0.15$ MeV
$m - m_{\Lambda_c^+} = 341.54 \pm 0.05$ MeV
Full width $\Gamma < 0.52$ MeV, CL = 90%

$\Lambda_c^+\pi\pi$ and its submode $\Sigma(2455)\pi$ are the only strong decays allowed for an excited Λ_c^+ having this mass.

$\Lambda_c(2625)^+$ DECAY MODES		Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$\Lambda_c^+\pi^+\pi^-$	[e]	(50 ±7) %		184
$\Sigma_c(2455)^{++}\pi^-$		(2.6±0.4) %		103
$\Sigma_c(2455)^0\pi^+$		(2.6±0.4) %		103
$\Lambda_c^+\pi^+\pi^-$ 3-body		seen		184
$\Lambda_c^+\pi^0\pi^0$	[e]	(41 ±6) %		195
$\Lambda_c^+\pi^0$	[d]	< 50 %	90%	293
$\Lambda_c^+\gamma$		< 26 %	90%	319

$\Lambda_c(2860)^+$

$I(J^P) = 0(\frac{3}{2}^+)$

Mass $m = 2856.1^{+2.3}_{-6.0}$ MeV
Full width $\Gamma = 68^{+12}_{-22}$ MeV

$\Lambda_c(2860)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$D^0 p$	seen	259

$\Lambda_c(2880)^+$

$I(J^P) = 0(\frac{5}{2}^+)$

Mass $m = 2881.63 \pm 0.24$ MeV
$m - m_{\Lambda_c^+} = 595.17 \pm 0.28$ MeV
Full width $\Gamma = 5.6^{+0.8}_{-0.6}$ MeV

$\Lambda_c(2880)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \pi^+ \pi^-$	seen	471
$\Sigma_c(2455)^{0,++} \pi^\pm$	seen	376
$\Sigma_c(2520)^{0,++} \pi^\pm$	seen	317
$p D^0$	seen	316

$\Lambda_c(2940)^+$

$I(J^P) = 0(\frac{3}{2}^-)$

$J^P = 3/2^-$ is favored, but is not certain

Mass $m = 2939.6^{+1.3}_{-1.5}$ MeV
Full width $\Gamma = 20^{+6}_{-5}$ MeV

$\Lambda_c(2940)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$p D^0$	seen	420
$\Sigma_c(2455)^{0,++} \pi^\pm$	seen	–

$\Sigma_c(2455)$

$I(J^P) = 1(\frac{1}{2}^+)$

$\Sigma_c(2455)^{++}$ mass $m = 2453.97 \pm 0.14$ MeV
$\Sigma_c(2455)^{+}$ mass $m = 2452.65^{+0.22}_{-0.16}$ MeV
$\Sigma_c(2455)^{0}$ mass $m = 2453.75 \pm 0.14$ MeV
$m_{\Sigma_c(2455)^{++}} - m_{\Lambda_c^+} = 167.510 \pm 0.017$ MeV

$m_{\Sigma_c(2455)^+} - m_{\Lambda_c^+} = 166.19^{+0.16}_{-0.08}$ MeV
$m_{\Sigma^0_{c2455}} - m_{\Lambda_c^+} = 167.290 \pm 0.017$ MeV
$m_{\Sigma_c(2455)^{++}} - m_{\Sigma_c(2455)^0} = 0.220 \pm 0.013$ MeV
$m_{\Sigma_c(2455)^+} - m_{\Sigma_c(2455)^0} = -1.10^{+0.16}_{-0.08}$ MeV
$\Sigma_c(2455)^{++}$ full width $\Gamma = 1.89^{+0.09}_{-0.18}$ MeV (S = 1.1)
$\Sigma_c(2455)^+$ full width $\Gamma = 2.3 \pm 0.4$ MeV
$\Sigma_c(2455)^0$ full width $\Gamma = 1.83^{+0.11}_{-0.19}$ MeV (S = 1.2)

$\Lambda_c^+ \pi$ is the only strong decay allowed to a Σ_c having this mass.

Σ_c(2455) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \pi$	≈ 100 %	94

Σ_c(2520)

$I(J^P) = 1(\frac{3}{2}^+)$

J^P has not been measured; $\frac{3}{2}^+$ is the quark-model prediction.

$\Sigma_c(2520)^{++}$ mass $m = 2518.41 \pm 0.22$ MeV (S = 1.3)
$\Sigma_c(2520)^+$ mass $m = 2517.4^{+0.7}_{-0.5}$ MeV
$\Sigma_c(2520)^0$ mass $m = 2518.48 \pm 0.21$ MeV (S = 1.2)
$m_{\Sigma_c(2520)^{++}} - m_{\Lambda_c^+} = 231.95 \pm 0.18$ MeV (S = 1.8)
$m_{\Sigma_c(2520)^+} - m_{\Lambda_c^+} = 230.9^{+0.7}_{-0.5}$ MeV
$m_{\Sigma_c(2520)^0} - m_{\Lambda_c^+} = 232.02 \pm 0.15$ MeV (S = 1.4)
$m_{\Sigma_c(2520)^{++}} - m_{\Sigma_c(2520)^0} = 0.01 \pm 0.15$ MeV
$\Sigma_c(2520)^{++}$ full width $\Gamma = 14.78^{+0.30}_{-0.40}$ MeV
$\Sigma_c(2520)^+$ full width $\Gamma = 17.2^{+4.0}_{-2.2}$ MeV
$\Sigma_c(2520)^0$ full width $\Gamma = 15.3^{+0.4}_{-0.5}$ MeV

$\Lambda_c^+ \pi$ is the only strong decay allowed to a Σ_c having this mass.

Σ_c(2520) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \pi$	≈ 100 %	179

Σ_c(2800)

$I(J^P) = 1(?^?)$

$\Sigma_c(2800)^{++}$ mass $m = 2801^{+4}_{-6}$ MeV
$\Sigma_c(2800)^+$ mass $m = 2792^{+14}_{-5}$ MeV

$\Sigma_c(2800)^0$ mass $m = 2806^{+5}_{-7}$ MeV (S = 1.3)
$m_{\Sigma_c(2800)^{++}} - m_{\Lambda_c^+} = 514^{+4}_{-6}$ MeV
$m_{\Sigma_c(2800)^{+}} - m_{\Lambda_c^+} = 505^{+14}_{-5}$ MeV
$m_{\Sigma_c(2800)^{0}} - m_{\Lambda_c^+} = 519^{+5}_{-7}$ MeV (S = 1.3)
$\Sigma_c(2800)^{++}$ full width $\Gamma = 75^{+22}_{-17}$ MeV
$\Sigma_c(2800)^{+}$ full width $\Gamma = 60^{+60}_{-40}$ MeV
$\Sigma_c(2800)^{0}$ full width $\Gamma = 72^{+22}_{-15}$ MeV

Σ_c(2800) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+\pi$	seen	443

Ξ_c^+

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

Mass $m = 2467.79 \pm 0.15$ MeV (S = 1.1)
Mean life $\tau = (453 \pm 5) \times 10^{-15}$ s
$c\tau = 135.8$ μm

Branching fractions marked with a footnote, e.g. [a], have been corrected for decay modes not observed in the experiments. For example, the submode fraction $\Xi_c^+ \to \Sigma^+ \overline{K}^*(892)^0$ seen in $\Xi_c^+ \to \Sigma^+ K^- \pi^+$ has been multiplied up to include $\overline{K}^*(892)^0 \to \overline{K}^0 \pi^0$ decays.

Ξ_c^+ DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Cabibbo-favored ($S = -2$) decays				
$p 2K_S^0$		$(2.5\pm1.3) \times 10^{-3}$		767
$\Lambda \overline{K}^0 \pi^+$		—		852
$\Sigma(1385)^+ \overline{K}^0$	[a]	(2.9 ± 2.0) %		746
$\Lambda K^- 2\pi^+$		$(9\pm4) \times 10^{-3}$		787
$\Lambda \overline{K}^*(892)^0 \pi^+$	[a]	$< 5 \times 10^{-3}$	CL=90%	608
$\Sigma(1385)^+ K^- \pi^+$	[a]	$< 6 \times 10^{-3}$	CL=90%	678
$\Sigma^+ K_S^0$		$(1.9\pm0.9) \times 10^{-3}$		864
$\Sigma^+ K^- \pi^+$		(2.7 ± 1.2) %		810
$\Sigma^+ \overline{K}^*(892)^0$	[a]	(2.3 ± 1.1) %		658
$\Sigma^0 K^- 2\pi^+$		$(8\pm5) \times 10^{-3}$		735
$\Xi^0 \pi^+$		$(7.2\pm3.2) \times 10^{-3}$		877
$\Xi^- 2\pi^+$		(2.9 ± 1.3) %		851
$\Xi(1530)^0 \pi^+$	[a]	$< 2.9 \times 10^{-3}$	CL=90%	750

$\Xi(1620)^0\pi^+$		seen		–
$\Xi(1690)^0\pi^+$		seen		644
$\Xi^0\pi^+\pi^0$		(6.7 ± 3.5) %		856
$\Xi^0\pi^-2\pi^+$		(5.0 ± 2.6) %		818
$\Xi^0 e^+\nu_e$		(7 ± 4) %		884
$\Omega^- K^+\pi^+$		$(2.0\pm1.5)\times10^{-3}$		399

Cabibbo-suppressed decays

$pK^-\pi^+$		$(6.2\pm3.0)\times10^{-3}$	S=1.5	944
$p\overline{K}^*(892)^0$	[a]	$(3.3\pm1.7)\times10^{-3}$		828
$p\overline{K}^*_0(700)^0$, $\overline{K}^*_0(700)^0\to K^-\pi^+$		$(5\pm4)\times10^{-4}$		–
$p\overline{K}^*(892)^0$, $\overline{K}^*\to K^-\pi^+$		$(1.8\pm0.8)\times10^{-3}$		–
$p\overline{K}^*_0(1430)^0$, $\overline{K}^*_0(1430)^0\to K^-\pi^+$		$(10\pm6)\times10^{-4}$		–
$\Delta(1232)^{++}K^-$, $\Delta(1232)^{++}\to p\pi^+$		$(1.1\pm0.5)\times10^{-3}$		–
$\Delta(1600)^{++}K^-$, $\Delta(1600)^{++}\to p\pi^+$		$(2.7\pm1.5)\times10^{-4}$		–
$\Delta(1700)^{++}K^-$, $\Delta(1700)^{++}\to p\pi^+$		$(1.2\pm0.7)\times10^{-4}$		–
$\Lambda(1405)\pi^+$, $\Lambda(1405)\to pK^-$		$(2.0\pm1.4)\times10^{-4}$		–
$\Lambda(1520)\pi^+$, $\Lambda(1520)\to pK^-$		$(1.6\pm0.8)\times10^{-4}$		–
$\Lambda(1670)\pi^+$, $\Lambda(1670)\to pK^-$		$(1.9\pm0.9)\times10^{-4}$		–
$\Lambda(1820)\pi^+$, $\Lambda(1820)\to pK^-$		$(5.1\pm2.7)\times10^{-5}$		–
$\Lambda(2000)\pi^+$, $\Lambda(2000)\to pK^-$		$(4.6\pm2.3)\times10^{-4}$		–
pK^0_S		$(7.1\pm3.2)\times10^{-4}$		987
$\Lambda\pi^+$		$(4.5\pm2.0)\times10^{-4}$		976
$\Sigma^+\pi^+\pi^-$		(1.4 ± 0.8) %		922
$\Sigma^-2\pi^+$		$(5.1\pm3.4)\times10^{-3}$		918
$\Sigma^+K^+K^-$		$(4.3\pm2.5)\times10^{-3}$		579
$\Sigma^+\phi$	[a]	$<3.2\times10^{-3}$	CL=90%	549
$\Xi(1690)^0K^+$, $\Xi^0\to\Sigma^+K^-$		$<1.3\times10^{-3}$	CL=90%	501
$\Sigma^0\pi^+$		$(1.2\pm0.5)\times10^{-3}$		–
Ξ^0K^+		$(4.9\pm2.3)\times10^{-4}$		–
$p\phi(1020)$		$(1.2\pm0.6)\times10^{-4}$		751

Ξ_c^0

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

Mass $m = 2470.50 \pm 0.25$ MeV (S = 1.1)

$m_{\Xi_c^0} - m_{\Xi_c^+} = 2.72 \pm 0.23$ MeV (S = 1.1)

Mean life $\tau = (150.0 \pm 1.7) \times 10^{-15}$ s (S = 1.1)

$c\tau = 45.0\ \mu$m

Decay asymmetry parameters

$\Xi^- \pi^+$ $\alpha = -0.64 \pm 0.05$

α FOR $\overline{\Xi}_c^0 \to \overline{\Xi}^+ \pi^- = 0.61 \pm 0.05$

α FOR $\Xi_c^0 \to \Lambda \overline{K}^*(892)^0 = 0.15 \pm 0.22$

α FOR $\Xi_c^0 \to \Sigma^+ K^*(892)^- = -0.52 \pm 0.30$

α FOR $\Xi_c^0 \to \Xi^0 \pi^0 = -0.90 \pm 0.27$

τ_{mix}, $\Xi_c^0 - \overline{\Xi}_c^0$ oscillation period $> 1.3 \times 10^{-12}$ s

Ξ_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
Cabibbo-favored decays			
$p K^- K^- \pi^+$	$(4.9 \pm 1.0) \times 10^{-3}$		676
$p K^- \overline{K}^*(892)^0$, $\overline{K}^{*0} \to K^- \pi^+$	$(2.0 \pm 0.6) \times 10^{-3}$		413
$p K^- K^- \pi^+$ (no $\overline{K}^{*0}$)	$(3.0 \pm 0.8) \times 10^{-3}$		676
ΛK_S^0	$(3.2 \pm 0.6) \times 10^{-3}$		906
$\Lambda K^- \pi^+$	(1.45 ± 0.28) %		856
$\Lambda \overline{K}^*(892)^0$	$(2.6 \pm 0.6) \times 10^{-3}$		717
$\Lambda \overline{K}^0 \pi^+ \pi^-$	seen		787
$\Lambda K^- \pi^+ \pi^+ \pi^-$	seen		703
$\Sigma^0 K_S^0$	$(5.4 \pm 1.4) \times 10^{-4}$		865
$\Sigma^+ K^-$	$(1.8 \pm 0.4) \times 10^{-3}$		868
$\Sigma^0 \overline{K}^*(892)^0$	$(9.9 \pm 1.9) \times 10^{-3}$		658
$\Sigma^+ K^*(892)^-$	$(4.9 \pm 1.3) \times 10^{-3}$		661
$\Xi^- \pi^+$	(1.43 ± 0.27) %		875
$\Xi^- \pi^+ \pi^+ \pi^-$	(4.8 ± 2.3) %		816
$\Xi^0 \pi^0$	$(6.9 \pm 1.4) \times 10^{-3}$		879
$\Xi^0 \eta$	$(1.6 \pm 0.4) \times 10^{-3}$		771
$\Xi^0 \eta'$	$(1.1 \pm 0.4) \times 10^{-3}$		479
$\Xi^0 \phi$, $\phi \to K^+ K^-$	$(5.2 \pm 1.2) \times 10^{-4}$		–
$\Xi^0 K^+ K^-$ nonresonant	$(5.6 \pm 1.2) \times 10^{-4}$		444
$\Omega^- K^+$	$(4.2 \pm 0.9) \times 10^{-3}$		522
$\Xi^- e^+ \nu_e$	(1.06 ± 0.21) %		882
$\Xi^- \mu^+ \nu_\mu$	(1.01 ± 0.21) %		878
$\Xi^0 \gamma$	$< 1.7 \times 10^{-4}$	90%	885

$\Xi^0 \mu^+ \mu^-$	< 6	$\times 10^{-5}$	90%	869
$\Xi^0 e^+ e^-$	< 1.0	$\times 10^{-4}$	90%	885
Cabibbo-suppressed decays				
$\Lambda_c^+ \pi^-$	$(5.5 \pm 1.1) \times 10^{-3}$			115
$\Xi^- K^+$	$(3.9 \pm 1.1) \times 10^{-4}$			789
$\Lambda K^+ K^-$ (no ϕ)	$(4.1 \pm 1.3) \times 10^{-4}$			648
$\Lambda \phi$	$(4.9 \pm 1.3) \times 10^{-4}$			621

$\Xi_c'^+$

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

Mass $m = 2578.3 \pm 0.4$ MeV

$m_{\Xi_c'^+} - m_{\Xi_c^+} = 110.5 \pm 0.4$ MeV

$m_{\Xi_c'^+} - m_{\Xi_c'^0} = -0.5 \pm 0.6$ MeV

The $\Xi_c'^+$–Ξ_c^+ mass difference is too small for any strong decay to occur.

$\Xi_c'^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ \gamma$	seen	108

$\Xi_c'^0$

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

Mass $m = 2578.8 \pm 0.5$ MeV

$m_{\Xi_c'^0} - m_{\Xi_c^0} = 108.3 \pm 0.4$ MeV

The $\Xi_c'^0 - \Xi_c^0$ mass difference is too small for any strong decay to occur.

$\Xi_c'^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^0 \gamma$	seen	106

$\Xi_c(2645)$

$I(J^P) = \frac{1}{2}(\frac{3}{2}^+)$

J^P has not been measured; $\frac{3}{2}^+$ is the quark-model prediction.

$\Xi_c(2645)^+$ mass $m = 2645.17 \pm 0.27$ MeV (S = 1.1)

$\Xi_c(2645)^0$ mass $m = 2646.24 \pm 0.18$ MeV (S = 1.1)

$m_{\Xi_c(2645)^+} - m_{\Xi_c^0} = 174.67 \pm 0.09$ MeV
$m_{\Xi_c(2645)^0} - m_{\Xi_c^+} = 178.45 \pm 0.10$ MeV
$m_{\Xi_c(2645)^+} - m_{\Xi_c(2645)^0} = -1.06 \pm 0.27$ MeV (S = 1.1)
$\Xi_c(2645)^+$ full width $\Gamma = 2.14 \pm 0.19$ MeV (S = 1.1)
$\Xi_c(2645)^0$ full width $\Gamma = 2.35 \pm 0.22$ MeV

$\Xi_c \pi$ is the only strong decay allowed to a Ξ_c resonance having this mass.

Ξ_c(2645) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^0 \pi^+$	seen	102
$\Xi_c^+ \pi^-$	seen	106

$\Xi_c(2790)$

$I(J^P) = \frac{1}{2}(\frac{1}{2}^-)$

J^P has not been measured; $\frac{1}{2}^-$ is the quark-model prediction.

$\Xi_c(2790)^+$ mass $= 2792.0 \pm 0.5$ MeV
$\Xi_c(2790)^0$ mass $= 2794.0 \pm 0.5$ MeV
$m_{\Xi_c(2790)^+} - m_{\Xi_c'^0} = 213.20 \pm 0.22$ MeV
$m_{\Xi_c(2790)^0} - m_{\Xi_c'^+} = 215.70 \pm 0.22$ MeV
$m_{\Xi_c(2790)^+} - m_{\Xi_c(2790)^0} = -2.0 \pm 0.7$ MeV
$\Xi_c(2790)^+$ width $= 8.9 \pm 1.0$ MeV
$\Xi_c(2790)^0$ width $= 10.0 \pm 1.1$ MeV

Ξ_c(2790) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c' \pi$	seen	159
$\Lambda_c^+ K^-$	seen	99

$\Xi_c(2815)$

$I(J^P) = \frac{1}{2}(\frac{3}{2}^-)$

J^P has not been measured; $\frac{3}{2}^-$ is the quark-model prediction.

$\Xi_c(2815)^+$ mass $m = 2816.60 \pm 0.16$ MeV
$\Xi_c(2815)^0$ mass $m = 2819.85 \pm 0.27$ MeV (S = 1.1)
$m_{\Xi_c(2815)^+} - m_{\Xi_c^+} = 348.81 \pm 0.09$ MeV
$m_{\Xi_c(2815)^0} - m_{\Xi_c^0} = 349.35 \pm 0.11$ MeV
$m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0} = -3.26 \pm 0.27$ MeV
$\Xi_c(2815)^+$ full width $\Gamma = 2.15 \pm 0.15$ MeV (S = 1.2)
$\Xi_c(2815)^0$ full width $\Gamma = 2.54 \pm 0.25$ MeV

The $\Xi_c \pi\pi$ modes are consistent with being entirely via $\Xi_c(2645)\pi$.

Ξ_c(2815) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi'_c \pi$	seen	188
$\Xi_c(2645)\pi$	seen	102
$\Xi_c^+ \pi^+ \pi^-$	seen	196
$\Xi_c^0 \gamma$	seen	325

Ξ_c(2970)

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$

was $\Xi_c(2980)$

$\Xi_c(2970)^+$ $m = 2965.2 \pm 1.0$ MeV (S = 2.9)
$\Xi_c(2970)^0$ $m = 2967.3 \pm 1.9$ MeV (S = 7.2)
$m_{\Xi_c(2970)^+} - m_{\Xi_c^+} = 497.4 \pm 1.0$ MeV (S = 2.7)
$m_{\Xi_c(2970)^0} - m_{\Xi_c^0} = 496.8 \pm 1.9$ MeV (S = 5.8)
$m_{\Xi_c(2970)^+} - m_{\Xi_c(2970)^0} = -2.1 \pm 2.0$ MeV (S = 5.4)
$\Xi_c(2970)^+$ width $\Gamma = 27.2^{+2.8}_{-3.3}$ MeV (S = 1.7)

Ξ_c(2970) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \overline{K} \pi$	seen	225
$\Sigma_c(2455) \overline{K}$	seen	125
$\Lambda_c^+ \overline{K}$	not seen	411
$\Lambda_c^+ K^-$	seen	411
$\Xi_c^+ \pi^+ \pi^-$	seen	377
$\Xi_c 2\pi$	seen	382
$\Xi'_c \pi$	seen	–
$\Xi_c(2645)\pi$	seen	274

Ξ_c(3055)

$I(J^P) = ?(\frac{3}{2}^+)$

Mass $m = 3055.2 \pm 0.7$ MeV (S = 2.4)
Mass $m = 3061.0 \pm 0.8$ MeV
Full width $\Gamma = 8.0 \pm 0.8$ MeV
Full width $\Gamma = 12.4 \pm 2.3$ MeV

Ξ_c(3055) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Sigma^{++} K^-$	seen	–
ΛD^+	seen	315

ΛD^0	seen	325

$\Xi_c(3080)$

$I(J^P) = \frac{1}{2}(?^?)$

$\Xi_c(3080)^+$ $m = 3077.2 \pm 0.4$ MeV
$\Xi_c(3080)^0$ $m = 3079.9 \pm 1.4$ MeV (S = 1.3)
$\Xi_c(3080)^+$ width $\Gamma = 3.8 \pm 0.9$ MeV (S = 1.4)
$\Xi_c(3080)^0$ width $\Gamma = 5.6 \pm 2.2$ MeV

$\Xi_c(3080)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \overline{K} \pi$	seen	415
$\Xi_c^+ \pi^+ \pi^-$	seen	487
$\Sigma_c(2455) \overline{K}$	seen	342
$\Sigma_c(2455)^{++} K^-$	seen	342
$\Sigma_c(2520)^{++} K^-$	seen	239
$\Sigma_c(2455) \overline{K} +\ \Sigma_c(2520) \overline{K}$	seen	–
$\Lambda_c^+ \overline{K}$	not seen	536
$\Lambda_c^+ \overline{K} \pi^+ \pi^-$	not seen	144
ΛD^+	seen	362

Ω_c^0

$I(J^P) = 0(\frac{1}{2}^+)$

J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

Mass $m = 2695.3 \pm 0.4$ MeV
Mean life $\tau = (274 \pm 10) \times 10^{-15}$ s
$c\tau = 82.0$ μm

No absolute branching fractions have been measured. The following are branching *ratios* relative to $\Omega^- \pi^+$.

Ω_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
Cabibbo-favored ($S = -3$) decays — relative to $\Omega^- \pi^+$			
$\Omega^- \pi^+$	**DEFINED AS 1**		821
$\Omega^- \pi^+ \pi^0$	1.80 ±0.33		797
$\Omega^- \rho^+$	>1.3	90%	532
$\Omega^- \pi^- 2\pi^+$	0.31 ±0.05		753
$\Omega^- e^+ \nu_e$	1.98 ±0.29		829
$\Omega^- \mu^+ \nu_\mu$	1.94 ±0.21		824
$\Xi^0 \overline{K}^0$	1.64 ±0.29		950
$\Xi^0 K^- \pi^+$	1.20 ±0.18		901

$\Xi^0 \overline{K}^{*0}$, $\overline{K}^{*0} \to K^- \pi^+$	0.68 $\pm$0.16		764
$\Omega(2012)^- \pi^+$, $\Omega(2012)^- \to \Xi^0 K^-$	0.12 $\pm$0.05		–
$\Xi^- \overline{K}^0 \pi^+$	2.12 $\pm$0.28		895
$\Omega(2012)^- \pi^+$, $\Omega(2012)^- \to \Xi^- \overline{K}^0$	0.12 $\pm$0.06		–
$\Xi^- K^- 2\pi^+$	0.63 $\pm$0.09		830
$\Xi(1530)^0 K^- \pi^+$, $\Xi^{*0} \to \Xi^- \pi^+$	0.21 $\pm$0.06		757
$\Xi^- \overline{K}^{*0} \pi^+$	0.34 $\pm$0.11		653
$p K^- K^- \pi^+$	seen		864
$\Sigma^+ K^- K^- \pi^+$	$<$0.32	90%	689
$\Lambda \overline{K}^0 \overline{K}^0$	1.72 $\pm$0.35		837
Singly Cabibbo-suppressed modes — relative to $\Omega^- \pi^+$			
$\Xi^- \pi^+$	0.161$\pm$0.010		–
$\Omega^- K^+$	0.061$\pm$0.006		–
Doubly Cabibbo-suppressed modes — relative to $\Omega^- \pi^+$			
$\Xi^- K^+$	$<$0.07	90%	–

$\Omega_c(2770)^0$

$I(J^P) = 0(\frac{3}{2}^+)$

J^P has not been measured; $\frac{3}{2}^+$ is the quark-model prediction.

Mass $m = 2766.0^{+0.9}_{-1.0}$ MeV

$m_{\Omega_c(2770)^0} - m_{\Omega_c^0} = 70.7^{+0.8}_{-0.9}$ MeV

The $\Omega_c(2770)^0$–Ω_c^0 mass difference is too small for any strong decay to occur.

$\Omega_c(2770)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Omega_c^0 \gamma$	presumably 100%	70

$\Omega_c(3000)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3000.46 \pm 0.25$ MeV

Full width $\Gamma = 3.8^{+1.6}_{-0.4}$ MeV

$\Omega_c(3000)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	182

$\Omega_c(3050)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3050.17 \pm 0.19$ MeV
Full width $\Gamma < 1.8$ MeV, CL = 95%

$\Omega_c(3050)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	278

$\Omega_c(3065)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3065.58 \pm 0.21$ MeV
Full width $\Gamma = 3.4^{+0.7}_{-0.8}$ MeV (S = 1.7)

$\Omega_c(3065)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	303

$\Omega_c(3090)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3090.15 \pm 0.26$ MeV
Full width $\Gamma = 8.5^{+0.8}_{-1.7}$ MeV

$\Omega_c(3090)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	339

$\Omega_c(3120)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3118.98^{+0.27}_{-0.35}$ MeV
Full width $\Gamma < 2.5$ MeV, CL = 95%

$\Omega_c(3120)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	379

$\Omega_c(3185)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3185^{+7.6}_{-1.9}$ MeV
Full width $\Gamma = 50^{+12}_{-21}$ MeV

$\Omega_c(3185)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	460

$\Omega_c(3327)^0$

$I(J^P) = ?(?^?)$

Mass $m = 3327.1^{+1.2}_{-1.8}$ MeV
Full width $\Gamma = 20^{+14}_{-\ 5}$ MeV

$\Omega_c(3327)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^+ K^-$	seen	610

NOTES

[a] This branching fraction includes all the decay modes of the final-state resonance.

[b] Here γ_D stands for a dark photon.

[c] See AALTONEN 11H, Fig. 8, for the calculated ratio of $\Lambda_c^+ \pi^0 \pi^0$ and $\Lambda_c^+ \pi^+ \pi^-$ partial widths as a function of the $\Lambda_c(2595)^+ - \Lambda_c^+$ mass difference. At our value of the mass difference, the predicted ratio is about 4. Using the measured value of $\Lambda_c^+ \pi^0 \pi^0$ branching fraction and assuming the $\Lambda_c \pi \pi$ branching fractions sum to unity, we derive the $\Lambda_c \pi^+ \pi^-$ branching fraction. The derived ratio of the $\Lambda_c \pi^0 \pi^0$ to $\Lambda_c \pi^+ \pi^-$ partial widths is correspondingly 1.5 ± 0.2.

[d] A test that the isospin is indeed 0, so that the particle is indeed a Λ_c^+.

[e] In the isospin limit, with no other decays, the $\Lambda_c^+ \pi^+ \pi^-$ branching fraction would be 2/3 and the $\Lambda_c^+ \pi^0 \pi^0$ branching fraction would be 1/3.