

CHARMED BARYONS

($C = +1$)

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

Λ_c^+

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

$$\text{Mass } m = 2286.46 \pm 0.14 \text{ MeV}$$

$$\text{Mean life } \tau = (202.6 \pm 1.0) \times 10^{-15} \text{ s}$$

$$c\tau = 60.75 \text{ } \mu\text{m}$$

Decay asymmetry parameters

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda \pi^+ = -0.768 \pm 0.015 \quad (S = 3.4)$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda \rho^+ = -0.76 \pm 0.07$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma^+ \pi^0 = -0.484 \pm 0.027$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma^+ \eta = -0.99 \pm 0.06$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma^+ \eta' = -0.46 \pm 0.07$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma^0 \pi^+ = -0.466 \pm 0.018$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma(1385)^+ \pi^0 = -0.92 \pm 0.09$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma(1385)^0 \pi^+ = -0.79 \pm 0.11$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda \ell^+ \nu_\ell = -0.875 \pm 0.033$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow p K_S^0 = -0.754 \pm 0.010$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda K^+ = -0.546 \pm 0.035$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Sigma^0 K^+ = -0.54 \pm 0.20$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(1405) \pi^+ = 0.58 \pm 0.28$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(1520) \pi^+ = 0.93 \pm 0.09$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(1600) \pi^+ = 0.2 \pm 0.5$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(1670) \pi^+ = 0.82 \pm 0.08$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(1690) \pi^+ = 0.958 \pm 0.034$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda(2000) \pi^+ = -0.57 \pm 0.19$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Delta(1232)^{++} K^- = 0.55 \pm 0.04$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Delta(1600)^{++} K^- = -0.50 \pm 0.18$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Delta(1700)^{++} K^- = 0.22 \pm 0.08$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \bar{K}_0^*(700)^0 p = -0.1 \pm 0.7$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \bar{K}_0^*(1430)^0 p = 0.34 \pm 0.14$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Xi^0 K^+ = 0.01 \pm 0.16$$

$$\begin{aligned}
(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ &\rightarrow \Lambda\pi^+, \bar{\Lambda}_c^- \rightarrow \bar{\Lambda}\pi^- = 0.020 \pm 0.016 \\
(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ &\rightarrow \Sigma^0\pi^+, \bar{\Lambda}_c^- \rightarrow \bar{\Sigma}^0\pi^- = -0.02 \pm 0.05 \\
(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ &\rightarrow \Lambda e^+\nu_e, \bar{\Lambda}_c^- \rightarrow \bar{\Lambda}e^-\bar{\nu}_e = 0.00 \pm 0.04 \\
(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ &\rightarrow \Lambda K^+, \bar{\Lambda}_c^- \rightarrow \bar{\Lambda}K^- = -0.02 \pm 0.11 \\
(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ &\rightarrow \Sigma^0 K^+, \bar{\Lambda}_c^- \rightarrow \bar{\Sigma}^0 K^- = 0.1 \pm 0.4 \\
A_{CP}(\Lambda X) \text{ in } \Lambda_c &\rightarrow \Lambda X, \bar{\Lambda}_c \rightarrow \bar{\Lambda} X = (2 \pm 7)\% \\
A_{CP}(\Lambda K^+) \text{ in } \Lambda_c &\rightarrow \Lambda K^+, \bar{\Lambda}_c \rightarrow \bar{\Lambda} K^- = 0.021 \pm 0.026 \\
A_{CP}(\Sigma^0 K^+) \text{ in } \Lambda_c &\rightarrow \Sigma^0 K^+, \bar{\Lambda}_c \rightarrow \bar{\Sigma}^0 K^- = 0.03 \pm 0.05 \\
\Delta A_{CP} &= A_{CP}(\Lambda_c^+ \rightarrow p K^+ K^-) - A_{CP}(\Lambda_c^+ \rightarrow p \pi^+ \pi^-) = (0.3 \pm 1.1)\%
\end{aligned}$$

Branching fractions marked with a footnote, e.g. [a], have been corrected for decay modes not observed in the experiments. For example, the sub-mode fraction $\Lambda_c^+ \rightarrow p \bar{K}^*(892)^0$ seen in $\Lambda_c^+ \rightarrow p K^- \pi^+$ has been multiplied up to include $\bar{K}^*(892)^0 \rightarrow \bar{K}^0 \pi^0$ 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			
$p K_S^0$	(1.61 $\pm$ 0.07) %	S=1.1	873
$p K_L^0$	(1.67 $\pm$ 0.07) %		873
$p K^- \pi^+$	(6.35 $\pm$ 0.25) %	S=1.3	823
$p \bar{K}_0^*(700)^0$	(1.9 $\pm$ 0.6) $\times 10^{-3}$		719
$p \bar{K}^*(892)^0$	[a] (1.41 $\pm$ 0.07) %		685
$p \bar{K}_0^*(1430)$	(9.3 $\pm$ 1.8) $\times 10^{-3}$		†
$\Delta(1232)^{++} K^-$	(1.79 $\pm$ 0.09) %		710
$\Delta(1600)^{++} K^-$	(2.9 $\pm$ 1.0) $\times 10^{-3}$		—
$\Delta(1700)^{++} K^-$	(2.5 $\pm$ 0.6) $\times 10^{-3}$		—
$\Lambda(1405)^0 \pi^+$	(4.9 $\pm$ 1.9) $\times 10^{-3}$		—
$\Lambda(1520) \pi^+$	[a] (1.18 $\pm$ 0.16) $\times 10^{-3}$		628
$\Lambda(1600) \pi^+$	(3.3 $\pm$ 1.2) $\times 10^{-3}$		571
$\Lambda(1670) \pi^+$	(7.5 $\pm$ 2.1) $\times 10^{-4}$		516
$\Lambda(1690) \pi^+$	(7.6 $\pm$ 2.3) $\times 10^{-4}$		504
$\Lambda(2000) \pi^+$	(6.1 $\pm$ 0.7) $\times 10^{-3}$		234
$p K^- \pi^+$ nonresonant	(3.5 $\pm$ 0.4) %		823
$p K_S^0 \pi^0$	(1.99 $\pm$ 0.12) %		823
$p K_L^0 \pi^0$	(2.02 $\pm$ 0.14) %		823
$n K_S^0 \pi^+$	(1.86 $\pm$ 0.09) %		821
$n K_S^0 K^+$	(3.9 $\pm$ 1.7) $\times 10^{-4}$		612
$n K_S^0 \pi^+ \pi^0$	(8.5 $\pm$ 1.3) $\times 10^{-3}$		756
$n K^- \pi^+ \pi^+$	(1.90 $\pm$ 0.12) %		756
$p \bar{K}^0 \eta$	(8.9 $\pm$ 0.6) $\times 10^{-3}$	S=1.1	568

$pK_S^0\pi^+\pi^-$	(1.62 ± 0.11) %	S=1.1	754
$pK_L^0\pi^+\pi^-$	(1.69 ± 0.11) %		754
$pK^-\pi^+\pi^0$	(4.52 ± 0.28) %	S=1.5	759
$pK^*(892)^-\pi^+$	[a] (1.4 ± 0.5) %		580
$p(K^-\pi^+)_{\text{nonresonant}}\pi^0$	(4.6 ± 0.8) %		759
$\Delta(1232)\bar{K}^*(892)$	seen		419
$pK^-2\pi^+\pi^-$	(1.4 ± 1.0) × 10 ⁻³		671
$pK^-\pi^+2\pi^0$	(1.0 ± 0.5) %		678

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

$p\pi^0$	(1.6 ^{+0.7} _{-0.6}) × 10 ⁻⁴		945
$n\pi^+$	(6.6 ± 1.3) × 10 ⁻⁴		944
$p\eta$	(1.49 ± 0.08) × 10 ⁻³	S=1.1	856
$p\eta'$	(4.9 ± 0.9) × 10 ⁻⁴		639
$p\omega(782)^0$	(8.9 ± 1.1) × 10 ⁻⁴	S=1.2	751
$p\pi^+\pi^-$	(4.67 ± 0.24) × 10 ⁻³		927
$pf_0(980)$	[a] (3.5 ± 2.3) × 10 ⁻³		614
$p\rho(770)^0$	(1.5 ± 0.4) × 10 ⁻³		—
$n\pi^+\pi^0$	(6.4 ± 0.9) × 10 ⁻³		927
$nK^+\pi^0$	< 7.1 × 10 ⁻⁴	CL=90%	824
$n\pi^+\pi^-\pi^+$	(4.5 ± 0.8) × 10 ⁻³		895
$p2\pi^+2\pi^-$	(2.3 ± 1.5) × 10 ⁻³		852
pK^+K^-	(1.08 ± 0.05) × 10 ⁻³		616
$p\phi$	[a] (1.05 ± 0.14) × 10 ⁻³	S=1.1	590
$pK^+K^- \text{ non-}\phi$	(5.3 ± 1.2) × 10 ⁻⁴		616
$pK_S^0K_S^0$	(2.38 ± 0.18) × 10 ⁻⁴		610
$p\phi\pi^0$	(10 ± 4) × 10 ⁻⁵		460
$pK^+K^-\pi^0 \text{ nonresonant}$	< 6.3 × 10 ⁻⁵	CL=90%	494

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

$\Lambda\pi^+$	(1.31 ± 0.05) %	S=1.1	864
$\Lambda(1670)\pi^+, \Lambda(1670) \rightarrow \eta\Lambda$	(3.5 ± 0.5) × 10 ⁻³		—
$\Lambda\pi^+\pi^0$	(7.10 ± 0.34) %	S=1.1	844
$\Lambda\rho^+$	(4.1 ± 0.5) %		636
$\Sigma(1385)^+\pi^0, \Sigma^+ \rightarrow \Lambda\pi^+$	(5.1 ± 0.7) × 10 ⁻³		—
$\Sigma(1385)^0\pi^+, \Sigma^0 \rightarrow \Lambda\pi^0$	(5.6 ± 0.8) × 10 ⁻³		—
$\Lambda\pi^-2\pi^+$	(3.67 ± 0.26) %	S=1.4	807
$\Sigma(1385)^+\pi^+\pi^-, \Sigma^{*+} \rightarrow \Lambda\pi^+$	(1.0 ± 0.5) %		688
$\Sigma(1385)^-2\pi^+, \Sigma^{*-} \rightarrow \Lambda\pi^-$	(7.7 ± 1.4) × 10 ⁻³		688
$\Lambda\pi^+\rho^0$	(1.5 ± 0.6) %		524
$\Sigma(1385)^+\rho^0, \Sigma^{*+} \rightarrow \Lambda\pi^+$	(5 ± 4) × 10 ⁻³		363
$\Lambda\pi^-2\pi^+ \text{ nonresonant}$	< 1.1 %	CL=90%	807
$\Lambda\pi^-\pi^02\pi^+ \text{ total}$	(2.3 ± 0.8) %		757

$\Lambda\pi^+\eta$	[a] (1.87 ± 0.11) %	S=1.1	691
$\Sigma(1385)^+\eta$	[a] (9.1 ± 2.0) × 10 ⁻³		570
$\Lambda\pi^+\omega$	[a] (1.5 ± 0.5) %		517
$\Lambda\pi^-\pi^0 2\pi^+$, no η or ω	< 8 × 10 ⁻³	CL=90%	757
$\Lambda K^+\bar{K}^0$	(5.7 ± 1.1) × 10 ⁻³	S=2.0	443
$\Xi(1690)^0 K^+$, $\Xi^{*0} \rightarrow \Lambda\bar{K}^0$	(1.6 ± 0.5) × 10 ⁻³		286
$\Sigma^0\pi^+$	(1.29 ± 0.05) %		825
$\Sigma^0\pi^+\eta$	(7.6 ± 0.8) × 10 ⁻³		635
$\Sigma^+\pi^0$	(1.26 ± 0.10) %	S=1.1	827
$\Sigma^+\eta$	(3.2 ± 0.5) × 10 ⁻³		713
$\Sigma^+\eta'$	(4.2 ± 0.9) × 10 ⁻³		391
$\Sigma^+\pi^+\pi^-$	(4.54 ± 0.20) %	S=1.2	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
$\Sigma^0\pi^- 2\pi^+$	(1.12 ± 0.31) %		763
$\Sigma^+\omega$	(1.72 ± 0.20) %		569
$\Sigma^-\pi^0 2\pi^+$	(2.1 ± 0.4) %		762
$\Sigma^+ K^+ K^-$	(3.6 ± 0.4) × 10 ⁻³	S=1.1	349
$\Sigma^+\phi$	[a] (4.0 ± 0.5) × 10 ⁻³	S=1.1	295
$\Xi(1690)^0 K^+$, $\Xi^{*0} \rightarrow \Sigma^+ K^-$	(1.03 ± 0.25) × 10 ⁻³		286
$\Sigma^+ K^+ K^-$ nonresonant	< 8 × 10 ⁻⁴	CL=90%	349
$\Xi^0 K^+$	(5.5 ± 0.7) × 10 ⁻³		653
$\Xi^- K^+ \pi^+$	(6.3 ± 0.5) × 10 ⁻³	S=1.1	565
$\Xi^0 K^+ \pi^0$	(7.8 ± 1.7) × 10 ⁻³		574
$\Xi(1530)^0 K^+$	(4.9 ± 0.6) × 10 ⁻³	S=1.1	473

Hadronic modes with a hyperon: S = 0 final states

ΛK^+	(6.48 ± 0.31) × 10 ⁻⁴		781
$\Lambda K^+ \pi^0$	(1.48 ± 0.29) × 10 ⁻³		722
$\Lambda K^+ \pi^+ \pi^-$	(4.2 ± 1.6) × 10 ⁻⁴		637
$\Sigma^0 K^+$	(3.73 ± 0.31) × 10 ⁻⁴		735
$\Sigma^+ K_S^0$	(4.8 ± 1.4) × 10 ⁻⁴		736
$\Sigma^0 K^+ \pi^+ \pi^-$	< 2.6 × 10 ⁻⁴	CL=90%	574
$\Sigma^0 K^+ \pi^0$	< 1.8 × 10 ⁻³	CL=90%	670
$\Sigma^+ K^+ \pi^-$	(2.04 ± 0.26) × 10 ⁻³		670
$\Sigma^+ K^*(892)^0$	[a] (3.5 ± 1.0) × 10 ⁻³		470
$\Sigma^+ K^+ \pi^- \pi^0$	< 1.1 × 10 ⁻³	CL=90%	581
$\Sigma^- K^+ \pi^+$	(3.8 ± 1.2) × 10 ⁻⁴		664

Doubly Cabibbo-suppressed modes

$p K^+ \pi^-$	(1.13 ± 0.17) × 10 ⁻⁴		823
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Semileptonic modes

$\Lambda e^+ \nu_e$	(3.56 $\pm$ 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
$p K_S^0 \pi^- e^+ \nu_e$	< 3.3 $\times 10^{-4}$ CL=90%	821
$\Lambda(1520) e^+ \nu_e$	(1.0 $\pm$ 0.5) $\times 10^{-3}$	639
$\Lambda(1405)^0 e^+ \nu_e, \Lambda^0 \rightarrow p K^-$	(4.2 $\pm$ 1.9) $\times 10^{-4}$	—
$\Lambda \mu^+ \nu_\mu$	(3.48 $\pm$ 0.17) %	867

Inclusive modes

e^+ anything	(4.06 $\pm$ 0.13) %	—
p anything	(50 $\pm$ 16) %	—
n anything	(32.6 $\pm$ 1.6) %	—
Λ anything	(38.2 $\pm$ 2.9 / $\pm$ 2.4) %	—
K_S^0 anything	(9.9 $\pm$ 0.7) %	—
3prongs	(24 $\pm$ 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
$\bar{p} 2e^+$	L,B	< 2.7 $\times 10^{-6}$	CL=90%	951
$\bar{p} 2\mu^+$	L,B	< 9.4 $\times 10^{-6}$	CL=90%	937
$\bar{p} e^+ \mu^+$	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
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Exotic modes

$p \gamma D$	[b] < 8.0 $\times 10^{-5}$	CL=90%	—
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 $\Lambda_c(2595)^+$

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

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 $\Sigma_c(2455)$.

$$\text{Mass } m = 2592.25 \pm 0.28 \text{ MeV}$$

$$m - m_{\Lambda_c^+} = 305.79 \pm 0.24 \text{ MeV}$$

$$\text{Full width } \Gamma = 2.6 \pm 0.6 \text{ MeV}$$

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

$\Lambda_c(2595)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \pi^+ \pi^-$	[c] —	117
$\Sigma_c(2455)^{++} \pi^-$	$24 \pm 7 \%$	3
$\Sigma_c(2455)^0 \pi^+$	$24 \pm 7 \%$	3
$\Lambda_c^+ \pi^+ \pi^-$ 3-body	$18 \pm 10 \%$	117
$\Lambda_c^+ \pi^0$	[d] not seen	258
$\Lambda_c^+ \gamma$	not seen	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 to 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 $\pm$ 7) %		184
$\Sigma_c(2455)^{++} \pi^-$	(2.6 $\pm$ 0.4) %		103
$\Sigma_c(2455)^0 \pi^+$	(2.6 $\pm$ 0.4) %		103
$\Lambda_c^+ \pi^+ \pi^-$ 3-body	large		184
$\Lambda_c^+ \pi^0$	[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

$\Lambda_c(2880)^+$

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

$$\text{Mass } m = 2881.63 \pm 0.24 \text{ MeV}$$

$$m - m_{\Lambda_c^+} = 595.17 \pm 0.28 \text{ MeV}$$

$$\text{Full width } \Gamma = 5.6^{+0.8}_{-0.6} \text{ MeV}$$

$\Lambda_c(2880)^+$ 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

$$\text{Mass } m = 2939.6^{+1.3}_{-1.5} \text{ MeV}$$

$$\text{Full width } \Gamma = 20^{+6}_{-5} \text{ MeV}$$

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

 $\Sigma_c(2455)$

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

$$\Sigma_c(2455)^{++} \text{ mass } m = 2453.97 \pm 0.14 \text{ MeV}$$

$$\Sigma_c(2455)^+ \text{ mass } m = 2452.65^{+0.22}_{-0.16} \text{ MeV}$$

$$\Sigma_c(2455)^0 \text{ mass } m = 2453.75 \pm 0.14 \text{ MeV}$$

$$m_{\Sigma_c(2455)^{++}} - m_{\Lambda_c^+} = 167.510 \pm 0.017 \text{ MeV}$$

$$m_{\Sigma_c(2455)^+} - m_{\Lambda_c^+} = 166.19^{+0.16}_{-0.08} \text{ MeV}$$

$$m_{\Sigma_c(2455)^0} - m_{\Lambda_c^+} = 167.290 \pm 0.017 \text{ MeV}$$

$$m_{\Sigma_c(2455)^{++}} - m_{\Sigma_c(2455)^0} = 0.220 \pm 0.013 \text{ MeV}$$

$$m_{\Sigma_c(2455)^+} - m_{\Sigma_c(2455)^0} = -1.10^{+0.16}_{-0.08} \text{ MeV}$$

$$\Sigma_c(2455)^{++} \text{ full width } \Gamma = 1.89^{+0.09}_{-0.18} \text{ MeV} \quad (S = 1.1)$$

$$\Sigma_c(2455)^+ \text{ full width } \Gamma = 2.3 \pm 0.4 \text{ MeV}$$

$$\Sigma_c(2455)^0 \text{ full width } \Gamma = 1.83^{+0.11}_{-0.19} \text{ MeV} \quad (S = 1.2)$$

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

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

$\Sigma_c(2520)$

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

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

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

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

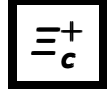
$\Sigma_c(2520)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \pi$	$\approx 100\%$	179

$\Sigma_c(2800)$

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

$$\begin{aligned} \Sigma_c(2800)^{++} \text{ mass } m &= 2801^{+4}_{-6} \text{ MeV} \\ \Sigma_c(2800)^+ \text{ mass } m &= 2792^{+14}_{-5} \text{ MeV} \\ \Sigma_c(2800)^0 \text{ mass } m &= 2806^{+5}_{-7} \text{ MeV} \quad (S = 1.3) \\ m_{\Sigma_c(2800)^{++}} - m_{\Lambda_c^+} &= 514^{+4}_{-6} \text{ MeV} \\ m_{\Sigma_c(2800)^+} - m_{\Lambda_c^+} &= 505^{+14}_{-5} \text{ MeV} \\ m_{\Sigma_c(2800)^0} - m_{\Lambda_c^+} &= 519^{+5}_{-7} \text{ MeV} \quad (S = 1.3) \\ \Sigma_c(2800)^{++} \text{ full width } \Gamma &= 75^{+22}_{-17} \text{ MeV} \\ \Sigma_c(2800)^+ \text{ full width } \Gamma &= 60^{+60}_{-40} \text{ MeV} \\ \Sigma_c(2800)^0 \text{ full width } \Gamma &= 72^{+22}_{-15} \text{ MeV} \end{aligned}$$

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



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

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

Mass $m = 2467.71 \pm 0.23$ MeV ($S = 1.3$)

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 sub-mode fraction $\Xi_c^+ \rightarrow \Sigma^+ \bar{K}^*(892)^0$ seen in $\Xi_c^+ \rightarrow \Sigma^+ K^- \pi^+$ has been multiplied up to include $\bar{K}^*(892)^0 \rightarrow \bar{K}^0 \pi^0$ decays.

Ξ_c^+ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
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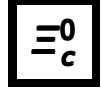
Cabibbo-favored ($S = -2$) decays

$p 2K_S^0$	$(2.5 \pm 1.3) \times 10^{-3}$		766
$\Lambda \bar{K}^0 \pi^+$	—		852
$\Sigma(1385)^+ \bar{K}^0$	[a] $(2.9 \pm 2.0) \%$		746
$\Lambda K^- 2\pi^+$	$(9 \pm 4) \times 10^{-3}$		787
$\Lambda \bar{K}^*(892)^0 \pi^+$	[a] $< 5 \times 10^{-3}$	CL=90%	608
$\Sigma(1385)^+ K^- \pi^+$	[a] $< 6 \times 10^{-3}$	CL=90%	678
$\Sigma^+ K^- \pi^+$	$(2.7 \pm 1.2) \%$		810
$\Sigma^+ \bar{K}^*(892)^0$	[a] $(2.3 \pm 1.1) \%$		658
$\Sigma^0 K^- 2\pi^+$	$(8 \pm 5) \times 10^{-3}$		735
$\Xi^0 \pi^+$	$(1.6 \pm 0.8) \%$		876
$\Xi^- 2\pi^+$	$(2.9 \pm 1.3) \%$		851
$\Xi(1530)^0 \pi^+$	[a] $< 2.9 \times 10^{-3}$	CL=90%	749
$\Xi(1620)^0 \pi^+$	seen		—
$\Xi(1690)^0 \pi^+$	seen		644
$\Xi^0 \pi^+ \pi^0$	$(6.7 \pm 3.5) \%$		856
$\Xi^0 \pi^- 2\pi^+$	$(5.0 \pm 2.6) \%$		818
$\Xi^0 e^+ \nu_e$	$(7 \pm 4) \%$		884
$\Omega^- K^+ \pi^+$	$(2.0 \pm 1.5) \times 10^{-3}$		399

Cabibbo-suppressed decays

$p K^- \pi^+$	$(6.2 \pm 3.0) \times 10^{-3}$	$S=1.5$	944
$p \bar{K}^*(892)^0$	[a] $(3.3 \pm 1.7) \times 10^{-3}$		828
$\Sigma^+ \pi^+ \pi^-$	$(1.4 \pm 0.8) \%$		922

$\Sigma^- 2\pi^+$	$(5.1 \pm 3.4) \times 10^{-3}$	918
$\Sigma^+ K^+ K^-$	$(4.3 \pm 2.5) \times 10^{-3}$	579
$\Sigma^+ \phi$	$[a] < 3.2 \times 10^{-3}$	CL=90% 549
$\Xi(1690)^0 K^+, \Xi^0 \rightarrow \Sigma^+ K^-$	$< 1.3 \times 10^{-3}$	CL=90% 501
$p\phi(1020)$	$(1.2 \pm 0.6) \times 10^{-4}$	751



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

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

$$\text{Mass } m = 2470.44 \pm 0.28 \text{ MeV} \quad (S = 1.2)$$

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

$$\text{Mean life } \tau = (150.4 \pm 2.8) \times 10^{-15} \text{ s} \quad (S = 1.4)$$

$$c\tau = 45.1 \text{ } \mu\text{m}$$

Decay asymmetry parameters

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

$$\alpha \text{ FOR } \Xi_c^0 \rightarrow \Xi^+ \pi^- = 0.61 \pm 0.05$$

$$\alpha \text{ FOR } \Xi_c^0 \rightarrow \Lambda \bar{K}^*(892)^0 = 0.15 \pm 0.22$$

$$\alpha \text{ FOR } \Xi_c^0 \rightarrow \Sigma^+ K^*(892)^- = -0.52 \pm 0.30$$

$$\alpha \text{ FOR } \Xi_c^0 \rightarrow \Xi^0 \pi^0 = -0.90 \pm 0.27$$

$$\tau_{mix}, \Xi_c^0 - \Xi_c^+ \text{ oscillation period} > 1.3 \times 10^{-12} \text{ s}$$

Ξ_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level ^p (MeV/c)
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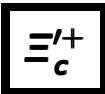
Cabibbo-favored decays

$p K^- K^- \pi^+$	$(4.9 \pm 1.0) \times 10^{-3}$	676
$p K^- \bar{K}^*(892)^0, \bar{K}^{*0} \rightarrow K^- \pi^+$	$(2.0 \pm 0.6) \times 10^{-3}$	413
$p K^- K^- \pi^+ (\text{no } \bar{K}^{*0})$	$(3.0 \pm 0.8) \times 10^{-3}$	676
ΛK_S^0	$(3.2 \pm 0.6) \times 10^{-3}$	906
$\Lambda K^- \pi^+$	$(1.45 \pm 0.28) \%$	856
$\Lambda \bar{K}^*(892)^0$	$(2.6 \pm 0.6) \times 10^{-3}$	717
$\Lambda \bar{K}^0 \pi^+ \pi^-$	seen	786
$\Lambda K^- \pi^+ \pi^+ \pi^-$	seen	703
$\Sigma^0 K_S^0$	$(5.4 \pm 1.4) \times 10^{-4}$	864
$\Sigma^+ K^-$	$(1.8 \pm 0.4) \times 10^{-3}$	868
$\Sigma^0 \bar{K}^*(892)^0$	$(9.9 \pm 1.9) \times 10^{-3}$	658
$\Sigma^+ K^*(892)^-$	$(4.9 \pm 1.3) \times 10^{-3}$	661
$\Xi^- \pi^+$	$(1.43 \pm 0.27) \%$	875
$\Xi^- \pi^+ \pi^+ \pi^-$	$(4.8 \pm 2.3) \%$	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
$\Xi^0 \phi, \phi \rightarrow K^+ K^-$	$(5.2 \pm 1.2) \times 10^{-4}$		—
$\Xi^0 K^+ K^-$ nonresonant	$(5.6 \pm 1.2) \times 10^{-4}$		444
$\Omega^- K^+$	$(4.2 \pm 0.9) \times 10^{-3}$		522
$\Xi^- e^+ \nu_e$	$(1.05 \pm 0.20) \%$		882
$\Xi^- \mu^+ \nu_\mu$	$(1.01 \pm 0.21) \%$		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



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

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

Mass $m = 2578.2 \pm 0.5$ MeV (S = 1.1)

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

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

The $\Xi_c'^+ - \Xi_c^+$ 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



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

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

Mass $m = 2578.7 \pm 0.5$ 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.

$$\Xi_c(2645)^+ \text{ mass } m = 2645.10 \pm 0.30 \text{ MeV} \quad (S = 1.2)$$

$$\Xi_c(2645)^0 \text{ mass } m = 2646.16 \pm 0.25 \text{ MeV} \quad (S = 1.3)$$

$$m_{\Xi_c(2645)^+} - m_{\Xi_c^0} = 174.67 \pm 0.09 \text{ MeV}$$

$$m_{\Xi_c(2645)^0} - m_{\Xi_c^+} = 178.45 \pm 0.10 \text{ MeV}$$

$$m_{\Xi_c(2645)^+} - m_{\Xi_c(2645)^0} = -1.06 \pm 0.27 \text{ MeV} \quad (S = 1.1)$$

$$\Xi_c(2645)^+ \text{ full width } \Gamma = 2.14 \pm 0.19 \text{ MeV} \quad (S = 1.1)$$

$$\Xi_c(2645)^0 \text{ full width } \Gamma = 2.35 \pm 0.22 \text{ MeV}$$

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

$\Xi_c(2645)$ 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.

$$\Xi_c(2790)^+ \text{ mass } = 2791.9 \pm 0.5 \text{ MeV}$$

$$\Xi_c(2790)^0 \text{ mass } = 2793.9 \pm 0.5 \text{ MeV}$$

$$m_{\Xi_c(2790)^+} - m_{\Xi_c'^0} = 213.20 \pm 0.22 \text{ MeV}$$

$$m_{\Xi_c(2790)^0} - m_{\Xi_c'^+} = 215.70 \pm 0.22 \text{ MeV}$$

$$m_{\Xi_c(2790)^+} - m_{\Xi_c(2790)^0} = -2.0 \pm 0.7 \text{ MeV}$$

$$\Xi_c(2790)^+ \text{ width } = 8.9 \pm 1.0 \text{ MeV}$$

$$\Xi_c(2790)^0 \text{ width } = 10.0 \pm 1.1 \text{ MeV}$$

$\Xi_c(2790)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c'^0 \pi$	seen	159
$\Lambda_c^+ K^-$	seen	98

 $\Xi_c(2815)$

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

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

$$\Xi_c(2815)^+ \text{ mass } m = 2816.51 \pm 0.25 \text{ MeV} \quad (S = 1.2)$$

$$\Xi_c(2815)^0 \text{ mass } m = 2819.79 \pm 0.30 \text{ MeV} \quad (S = 1.1)$$

$$\begin{aligned}
m_{\Xi_c(2815)^+} - m_{\Xi_c^+} &= 348.80 \pm 0.10 \text{ MeV} \\
m_{\Xi_c(2815)^0} - m_{\Xi_c^0} &= 349.35 \pm 0.11 \text{ MeV} \\
m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0} &= -3.27 \pm 0.27 \text{ MeV} \\
\Xi_c(2815)^+ \text{ full width } \Gamma &= 2.43 \pm 0.26 \text{ MeV} \\
\Xi_c(2815)^0 \text{ full width } \Gamma &= 2.54 \pm 0.25 \text{ MeV}
\end{aligned}$$

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

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

$\Xi_c(2970)$

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

was $\Xi_c(2980)$

$$\begin{aligned}
\Xi_c(2970)^+ m &= 2964.3 \pm 1.5 \text{ MeV} \quad (S = 3.9) \\
\Xi_c(2970)^0 m &= 2967.1 \pm 1.7 \text{ MeV} \quad (S = 6.7) \\
m_{\Xi_c(2970)^+} - m_{\Xi_c^+} &= 496.6 \pm 1.5 \text{ MeV} \quad (S = 3.7) \\
m_{\Xi_c(2970)^0} - m_{\Xi_c^0} &= 496.7 \pm 1.8 \text{ MeV} \quad (S = 5.3) \\
m_{\Xi_c(2970)^+} - m_{\Xi_c(2970)^0} &= -2.8 \pm 1.9 \text{ MeV} \quad (S = 4.8) \\
\Xi_c(2970)^+ \text{ width } \Gamma &= 20.9_{-3.5}^{+2.4} \text{ MeV} \quad (S = 1.2)
\end{aligned}$$

$\Xi_c(2970)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \bar{K} \pi$	seen	223
$\Sigma_c(2455) \bar{K}$	seen	122
$\Lambda_c^+ \bar{K}$	not seen	410
$\Lambda_c^+ K^-$	seen	410
$\Xi_c 2\pi$	seen	381
$\Xi_c' \pi$	seen	—
$\Xi_c(2645) \pi$	seen	274

$\Xi_c(3055)$

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

$$\begin{aligned}
\text{Mass } m &= 3055.9 \pm 0.4 \text{ MeV} \\
\text{Full width } \Gamma &= 7.8 \pm 1.9 \text{ MeV}
\end{aligned}$$

$\Xi_c(3055)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Sigma^{++} K^-$	seen	—
ΛD^+	seen	316

$\Xi_c(3080)$	$I(J^P) = \frac{1}{2}(?^?)$
$\Xi_c(3080)^+ m = 3077.2 \pm 0.4$ MeV	
$\Xi_c(3080)^0 m = 3079.9 \pm 1.4$ MeV ($S = 1.3$)	
$\Xi_c(3080)^+ \text{ width } \Gamma = 3.6 \pm 1.1$ MeV ($S = 1.5$)	
$\Xi_c(3080)^0 \text{ width } \Gamma = 5.6 \pm 2.2$ MeV	

$\Xi_c(3080)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Lambda_c^+ \bar{K} \pi$	seen	415
$\Sigma_c(2455) \bar{K}$	seen	342
$\Sigma_c(2455)^{++} K^-$	seen	342
$\Sigma_c(2520)^{++} K^-$	seen	239
$\Sigma_c(2455) \bar{K} + \Sigma_c(2520) \bar{K}$	seen	—
$\Lambda_c^+ \bar{K}$	not seen	536
$\Lambda_c^+ \bar{K} \pi^+ \pi^-$	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 $\tau = (273 \pm 12) \times 10^{-15}$ s	
$c\tau = 82$ μm	
No absolute branching fractions have been measured. The following are branching <i>ratios</i> 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
$\Xi^0 \bar{K}^0$	1.64 ± 0.29	950
$\Xi^0 K^- \pi^+$	1.20 ± 0.18	901
$\Xi^0 \bar{K}^{*0}, \bar{K}^{*0} \rightarrow K^- \pi^+$	0.68 ± 0.16	764
$\Omega(2012)^- \pi^+, \Omega(2012)^- \rightarrow$	0.12 ± 0.05	—
$\Xi^0 K^-$		
$\Xi^- \bar{K}^0 \pi^+$	2.12 ± 0.28	895
$\Omega(2012)^- \pi^+, \Omega(2012)^- \rightarrow$	0.12 ± 0.06	—
$\Xi^- \bar{K}^0$		
$\Xi^- K^- 2\pi^+$	0.63 ± 0.09	830
$\Xi(1530)^0 K^- \pi^+, \Xi^{*0} \rightarrow$	0.21 ± 0.06	757
$\Xi^- \pi^+$		
$\Xi^- \bar{K}^{*0} \pi^+$	0.34 ± 0.11	653
$p K^- K^- \pi^+$	seen	864
$\Sigma^+ K^- K^- \pi^+$	<0.32	90% 689
$\Lambda \bar{K}^0 \bar{K}^0$	1.72 ± 0.35	837

Singly Cabibbo-suppressed modes — relative to $\Omega^- \pi^+$

$\Xi^- \pi^+$	0.161 ± 0.010	—
$\Omega^- K^+$	0.061 ± 0.006	—

Doubly Cabibbo-suppressed modes — relative to $\Omega^- \pi^+$

$\Xi^- K^+$	<0.07	90% —
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$\Omega_c(2770)^0$

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

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 $\Omega_c(2770)^0 - \Omega_c^0$ 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 $m = 3050.17 \pm 0.19$ MeVFull 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 $m = 3065.58 \pm 0.21$ MeVFull 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 $m = 3090.15 \pm 0.26$ MeVFull 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	340

 $\Omega_c(3120)^0$

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

Mass $m = 3118.98^{+0.27}_{-0.35}$ MeVFull 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 ratio is about 4.
- [d] A test that the isospin is indeed 0, so that the particle is indeed a Λ_c^+ .
- [e] In the isospin limit, this braching fraction would be 2/3, the other 1/3 being decays to $\Lambda_c^+ \pi^0 \pi^0$.