

CHARMED BARYONS ($C = +1$)

$$\Lambda_c^+ = udc, \quad \Sigma_c^{++} = uuc, \quad \Sigma_c^+ = udc, \quad \Sigma_c^0 = ddc,$$

$$\Xi_c^+ = usc, \quad \Xi_c^0 = dsc, \quad \Omega_c^0 = ssc$$

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

$$\Lambda\pi^+ \quad \alpha = -0.755 \pm 0.006$$

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

$$\Sigma^+\pi^0 \quad \alpha = -0.484 \pm 0.027$$

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

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

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

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

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

$$\Lambda\ell^+\nu_\ell \quad \alpha = -0.875 \pm 0.033$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow pK_S^0 = 0.2 \pm 0.5$$

$$\alpha \text{ FOR } \Lambda_c^+ \rightarrow \Lambda K^+ = -0.58 \pm 0.05$$

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

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

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

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

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

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

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

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

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

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

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

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

$$(\alpha + \bar{\alpha})/(\alpha - \bar{\alpha}) \text{ in } \Lambda_c^+ \rightarrow \Lambda\pi^+, \bar{\Lambda}_c^- \rightarrow \bar{\Lambda}\pi^- = 0.020 \pm 0.016$$

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

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			
$p K_S^0$	(1.59 ± 0.07) %	S=1.1	873
$p K^- \pi^+$	(6.24 ± 0.28) %	S=1.4	823
$p \bar{K}_0^*(700)^0$	(1.9 ± 0.6) × 10 ⁻³		715
$p \bar{K}^*(892)^0$	[a] (1.39 ± 0.07) %		685
$p \bar{K}_0^*(1430)$	(9.2 ± 1.8) × 10 ⁻³		†
$\Delta(1232)^{++} K^-$	(1.76 ± 0.09) %		710
$\Delta(1600)^{++} K^-$	(2.8 ± 1.0) × 10 ⁻³		–
$\Delta(1700)^{++} K^-$	(2.4 ± 0.6) × 10 ⁻³		–
$\Lambda(1405)^0 \pi^+$	(4.8 ± 1.9) × 10 ⁻³		–
$\Lambda(1520) \pi^+$	[a] (1.16 ± 0.16) × 10 ⁻³		628
$\Lambda(1600) \pi^+$	(3.2 ± 1.2) × 10 ⁻³		571
$\Lambda(1670) \pi^+$	(7.4 ± 2.1) × 10 ⁻⁴		516
$\Lambda(1690) \pi^+$	(7.4 ± 2.2) × 10 ⁻⁴		504
$\Lambda(2000) \pi^+$	(6.0 ± 0.7) × 10 ⁻³		234
$p K^- \pi^+$ nonresonant	(3.5 ± 0.4) %		823
$p K_S^0 \pi^0$	(1.96 ± 0.12) %		823
$n K_S^0 \pi^+$	(1.82 ± 0.25) %		821
$n K^- \pi^+ \pi^+$	(1.90 ± 0.12) %		756
$p \bar{K}^0 \eta$	(8.8 ± 0.6) × 10 ⁻³	S=1.1	568
$p K_S^0 \pi^+ \pi^-$	(1.59 ± 0.11) %	S=1.1	754
$p K^- \pi^+ \pi^0$	(4.43 ± 0.28) %	S=1.5	759
$p K^*(892)^- \pi^+$	[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
$p K^- 2 \pi^+ \pi^-$	(1.4 ± 0.9) × 10 ⁻³		671
$p K^- \pi^+ 2 \pi^0$	(10 ± 5) × 10 ⁻³		678

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

$p\pi^0$	$< 8 \times 10^{-5}$	CL=90%	945
$n\pi^+$	$(6.6 \pm 1.3) \times 10^{-4}$		944
$p\eta$	$(1.57 \pm 0.12) \times 10^{-3}$		856
$p\eta'$	$(4.8 \pm 0.9) \times 10^{-4}$		639
$p\omega(782)^0$	$(1.11 \pm 0.21) \times 10^{-3}$		751
$p\pi^+\pi^-$	$(4.59 \pm 0.25) \times 10^{-3}$		927
$pf_0(980)$	[a] $(3.4 \pm 2.3) \times 10^{-3}$		614
$n\pi^+\pi^0$	$(6.4 \pm 0.9) \times 10^{-3}$		927
$n\pi^+\pi^-\pi^+$	$(4.5 \pm 0.8) \times 10^{-3}$		895
$p2\pi^+2\pi^-$	$(2.2 \pm 1.4) \times 10^{-3}$		852
pK^+K^-	$(1.06 \pm 0.05) \times 10^{-3}$		616
$p\phi$	[a] $(1.06 \pm 0.14) \times 10^{-3}$		590
$pK^+K^- \text{ non-}\phi$	$(5.2 \pm 1.1) \times 10^{-4}$		616
$pK_S^0K_S^0$	$(2.35 \pm 0.18) \times 10^{-4}$		610
$p\phi\pi^0$	$(10 \pm 4) \times 10^{-5}$		460
$pK^+K^-\pi^0 \text{ nonresonant}$	$< 6.3 \times 10^{-5}$	CL=90%	494

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

$\Lambda\pi^+$	$(1.29 \pm 0.05) \%$	S=1.1	864
$\Lambda(1670)\pi^+, \Lambda(1670) \rightarrow \eta\Lambda$	$(3.5 \pm 0.5) \times 10^{-3}$		–
$\Lambda\pi^+\pi^0$	$(7.02 \pm 0.35) \%$	S=1.1	844
$\Lambda\rho^+$	$(4.0 \pm 0.5) \%$		636
$\Sigma(1385)^+\pi^0, \Sigma^+ \rightarrow \Lambda\pi^+$	$(5.0 \pm 0.7) \times 10^{-3}$		–
$\Sigma(1385)^0\pi^+, \Sigma^0 \rightarrow \Lambda\pi^0$	$(5.6 \pm 0.8) \times 10^{-3}$		–
$\Lambda\pi^-2\pi^+$	$(3.61 \pm 0.26) \%$	S=1.4	807
$\Sigma(1385)^+\pi^+\pi^-, \Sigma^{*+} \rightarrow$ $\Lambda\pi^+$	$(1.0 \pm 0.5) \%$		688
$\Sigma(1385)^-2\pi^+, \Sigma^{*-} \rightarrow$ $\Lambda\pi^-$	$(7.6 \pm 1.4) \times 10^{-3}$		688
$\Lambda\pi^+\rho^0$	$(1.4 \pm 0.6) \%$		524
$\Sigma(1385)^+\rho^0, \Sigma^{*+} \rightarrow \Lambda\pi^+$	$(5 \pm 4) \times 10^{-3}$		363
$\Lambda\pi^-2\pi^+ \text{ nonresonant}$	$< 1.1 \%$	CL=90%	807
$\Lambda\pi^-\pi^02\pi^+ \text{ total}$	$(2.2 \pm 0.8) \%$		757
$\Lambda\pi^+\eta$	[a] $(1.84 \pm 0.11) \%$	S=1.1	691
$\Sigma(1385)^+\eta$	[a] $(9.1 \pm 2.0) \times 10^{-3}$		570
$\Lambda\pi^+\omega$	[a] $(1.5 \pm 0.5) \%$		517
$\Lambda\pi^-\pi^02\pi^+, \text{ no } \eta \text{ or } \omega$	$< 8 \times 10^{-3}$	CL=90%	757
$\Lambda K^+\bar{K}^0$	$(5.6 \pm 1.1) \times 10^{-3}$	S=1.9	443
$\Xi(1690)^0K^+, \Xi^{*0} \rightarrow \Lambda\bar{K}^0$	$(1.6 \pm 0.5) \times 10^{-3}$		286
$\Sigma^0\pi^+$	$(1.27 \pm 0.06) \%$	S=1.1	825
$\Sigma^0\pi^+\eta$	$(7.5 \pm 0.8) \times 10^{-3}$		635
$\Sigma^+\pi^0$	$(1.24 \pm 0.09) \%$		827
$\Sigma^+\eta$	$(3.2 \pm 0.5) \times 10^{-3}$		713
$\Sigma^+\eta'$	$(4.1 \pm 0.8) \times 10^{-3}$		391

$\Sigma^+ \pi^+ \pi^-$	(4.47 ± 0.22) %	S=1.2	804
$\Sigma^+ \rho^0$	< 1.7 %	CL=95%	575
$\Sigma^- 2\pi^+$	(1.86 ± 0.18) %		799
$\Sigma^0 \pi^+ \pi^0$	(3.5 ± 0.4) %		803
$\Sigma^+ \pi^0 \pi^0$	(1.54 ± 0.14) %		806
$\Sigma^0 \pi^- 2\pi^+$	(1.10 ± 0.30) %		763
$\Sigma^+ \omega$	(1.69 ± 0.20) %		569
$\Sigma^- \pi^0 2\pi^+$	(2.1 ± 0.4) %		762
$\Sigma^+ K^+ K^-$	(3.59 ± 0.35) × 10 ⁻³	S=1.1	349
$\Sigma^+ \phi$	[a] (3.9 ± 0.5) × 10 ⁻³	S=1.1	295
$\Xi(1690)^0 K^+, \Xi^{*0} \rightarrow \Sigma^+ K^-$	(1.01 ± 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
$\Xi^- K^+ \pi^+$	(6.2 ± 0.5) × 10 ⁻³	S=1.1	565
$\Xi(1530)^0 K^+$	(4.3 ± 0.9) × 10 ⁻³	S=1.1	473

Hadronic modes with a hyperon: S = 0 final states

ΛK^+	(6.42 ± 0.31) × 10 ⁻⁴		781
$\Lambda K^+ \pi^+ \pi^-$	< 5 × 10 ⁻⁴	CL=90%	637
$\Sigma^0 K^+$	(3.70 ± 0.31) × 10 ⁻⁴		735
$\Sigma^+ K_S^0$	(4.7 ± 1.4) × 10 ⁻⁴		736
$\Sigma^0 K^+ \pi^+ \pi^-$	< 2.5 × 10 ⁻⁴	CL=90%	574
$\Sigma^+ K^+ \pi^-$	(2.00 ± 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
$\Sigma^- K^+ \pi^+$	< 1.2 × 10 ⁻³	CL=90%	664

Doubly Cabibbo-suppressed modes

$p K^+ \pi^-$	(1.11 ± 0.17) × 10 ⁻⁴		823
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Semileptonic modes

$\Lambda e^+ \nu_e$	(3.56 ± 0.13) %		871
$\Lambda \pi^+ \pi^- e^+ \nu_e$	< 3.9 × 10 ⁻⁴	CL=90%	843
$p K^- e^+ \nu_e$	(8.8 ± 1.8) × 10 ⁻⁴		874
$p K_S^0 \pi^- e^+ \nu_e$	< 3.3 × 10 ⁻⁴	CL=90%	821
$\Lambda(1520) e^+ \nu_e$	(1.0 ± 0.5) × 10 ⁻³		639
$\Lambda(1405)^0 e^+ \nu_e, \Lambda^0 \rightarrow p K^-$	(4.2 ± 1.9) × 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 $\begin{smallmatrix} + \\ - \end{smallmatrix}$ 2.9 $\begin{smallmatrix} \\ 2.4 \end{smallmatrix}$) %		—

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	< 7.7	$\times 10^{-8}$	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] 66.67 %		184
$\Sigma_c(2455)^{++} \pi^-$	(3.42±0.27) %		103
$\Sigma_c(2455)^0 \pi^+$	(3.46±0.31) %		103
$\Lambda_c^+ \pi^+ \pi^-$ 3-body	large		184
$\Lambda_c^+ \pi^0$	[d] < 60 %	90%	293
$\Lambda_c^+ \gamma$	< 35 %	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)
pD^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

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

$\Sigma_c(2455)$ 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.

$\Sigma_c(2520)^{++}$ 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)

$$\begin{aligned}
 m_{\Sigma_c(2520)^+} - m_{\Lambda_c^+} &= 230.9^{+0.7}_{-0.5} \text{ MeV} \\
 m_{\Sigma_c(2520)^0} - m_{\Lambda_c^+} &= 232.02 \pm 0.15 \text{ MeV} \quad (S = 1.4) \\
 m_{\Sigma_c(2520)^{++}} - m_{\Sigma_c(2520)^0} &= 0.01 \pm 0.15 \text{ MeV} \\
 \Sigma_c(2520)^{++} \text{ full width } \Gamma &= 14.78^{+0.30}_{-0.40} \text{ MeV} \\
 \Sigma_c(2520)^+ \text{ full width } \Gamma &= 17.2^{+4.0}_{-2.2} \text{ MeV} \\
 \Sigma_c(2520)^0 \text{ full width } \Gamma &= 15.3^{+0.4}_{-0.5} \text{ MeV}
 \end{aligned}$$

$\Lambda_c^+ \pi$ 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

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.

$$\begin{aligned}
 \text{Mass } m &= 2467.71 \pm 0.23 \text{ MeV} \quad (S = 1.3) \\
 \text{Mean life } \tau &= (453 \pm 5) \times 10^{-15} \text{ s} \\
 c\tau &= 135.8 \text{ } \mu\text{m}
 \end{aligned}$$

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 $\Xi_c^+ \rightarrow \Sigma^+ \bar{K}^*(892)^0$ 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.

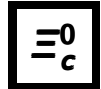
Ξ_c^+ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
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Cabibbo-favored ($S = -2$) decays

$p2K_S^0$	$(2.5 \pm 1.3) \times 10^{-3}$		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

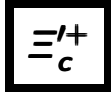
$$\Xi^- \pi^+ \quad \alpha = -0.64 \pm 0.05$$

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

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

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

Ξ_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	P (MeV/c)
Cabibbo-favored decays			
$pK^- K^- \pi^+$	$(4.9 \pm 1.0) \times 10^{-3}$		676
$pK^- \bar{K}^*(892)^0, \bar{K}^{*0} \rightarrow K^- \pi^+$	$(2.0 \pm 0.6) \times 10^{-3}$		413
$pK^- K^- \pi^+$ (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
$\Xi^0 \phi, \phi \rightarrow K^+ K^-$	$(5.2 \pm 1.2) \times 10^{-4}$		–
$\Xi^0 K^+ K^-$ 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
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.

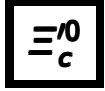
$$\text{Mass } m = 2578.2 \pm 0.5 \text{ MeV} \quad (S = 1.1)$$

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

$$m_{\Xi_c^{\prime+}} - m_{\Xi_c^{\prime0}} = -0.5 \pm 0.6 \text{ MeV}$$

The $\Xi_c^{\prime+} - \Xi_c^+$ mass difference is too small for any strong decay to occur.

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



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

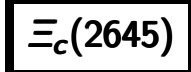
J^P has not been measured; $\frac{1}{2}^+$ is the quark-model prediction.

$$\text{Mass } m = 2578.7 \pm 0.5 \text{ MeV}$$

$$m_{\Xi_c^{\prime0}} - m_{\Xi_c^0} = 108.3 \pm 0.4 \text{ MeV}$$

The $\Xi_c^{\prime0} - \Xi_c^0$ mass difference is too small for any strong decay to occur.

$\Xi_c^{\prime0}$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi_c^0 \gamma$	seen	106



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

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)
$\Xi_c' \pi$	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.

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

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

$$m_{\Xi_c(2815)^+} - m_{\Xi_c^+} = 348.80 \pm 0.10 \text{ MeV}$$

$$m_{\Xi_c(2815)^0} - m_{\Xi_c^0} = 349.35 \pm 0.11 \text{ MeV}$$

$$m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0} = -3.27 \pm 0.27 \text{ MeV}$$

$$\Xi_c(2815)^+ \text{ full width } \Gamma = 2.43 \pm 0.26 \text{ MeV}$$

$$\Xi_c(2815)^0 \text{ full width } \Gamma = 2.54 \pm 0.25 \text{ MeV}$$

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 $\Xi_c(2980)$

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

$\Xi_c(2970)$ 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

 $\Xi_c(3080)$

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

$$\begin{aligned} \Xi_c(3080)^+ m &= 3077.2 \pm 0.4 \text{ MeV} \\ \Xi_c(3080)^0 m &= 3079.9 \pm 1.4 \text{ MeV} \quad (S = 1.3) \\ \Xi_c(3080)^+ \text{ width } \Gamma &= 3.6 \pm 1.1 \text{ MeV} \quad (S = 1.5) \\ \Xi_c(3080)^0 \text{ width } \Gamma &= 5.6 \pm 2.2 \text{ MeV} \end{aligned}$$

$\Xi_c(3080)$ 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



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

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

$$\text{Mass } m = 2695.2 \pm 1.7 \text{ MeV} \quad (S = 1.3)$$

$$\text{Mean life } \tau = (273 \pm 12) \times 10^{-15} \text{ s}$$

$$c\tau = 82 \text{ } \mu\text{m}$$

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	$\frac{p}{\text{MeV}/c}$
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 ± 0.15		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
$\Omega(2012)^- \pi^+, \Omega(2012)^- \rightarrow \Xi^0 K^-$	0.12 ± 0.05		—
$\Xi^- \bar{K}^0 \pi^+$	2.12 ± 0.28		895
$\Omega(2012)^- \pi^+, \Omega(2012)^- \rightarrow \Xi^- \bar{K}^0$	0.12 ± 0.06		—
$\Xi^- K^- 2\pi^+$	0.63 ± 0.09		830
$\Xi(1530)^0 K^- \pi^+, \Xi^{*0} \rightarrow \Xi^- \bar{K}^{*0} \pi^+$	0.21 ± 0.06		757
$\Xi^- \bar{K}^{*0} \pi^+$	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 $\Omega^- \pi^+$			
$\Xi^- \pi^+$	0.25 ± 0.06		—
$\Omega^- K^+$	<0.29	90%	—

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 $m = 2765.9 \pm 2.0$ MeV (S = 1.2)

$m_{\Omega_c(2770)^0} - m_{\Omega_c^0} = 70.7^{+0.8}_{-0.9}$ 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 $m = 3000.46 \pm 0.25$ MeVFull 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 $\Gamma = 8.5_{-1.7}^{+0.8}$ 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 $m = 3118.98_{-0.35}^{+0.27}$ 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 $m = 3185_{-1.9}^{+7.6}$ MeVFull width $\Gamma = 50_{-21}^{+12}$ 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 $m = 3327.1_{-1.8}^{+1.2}$ MeVFull width $\Gamma = 20_{-5}^{+14}$ 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] Assuming isospin conservation, so that the other third is $\Lambda_c^+ \pi^0 \pi^0$.