CHARMED BARYONS
($C = +1$)

$\Lambda_c^+ = udc$, $\Sigma_c^{++} = uuc$, $\Sigma_c^+ = udc$, $\Sigma_c^0 = ddc$,
$\Xi_c^+ = usc$, $\Xi_c^0 = dsc$, $\Omega_c^0 = ssc$

NODE=BXXX040

Λ_c^+

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

NODE=S033

Mass $m = 2286.46 \pm 0.14$ MeV
NODE=S033M;DTYPE=M

Mean life $\tau = (202.6 \pm 1.0) \times 10^{-15}$ s
NODE=S033T;DTYPE=T

$c\tau = 60.75$ μm
NODE=S033CTA;DTYPE=C;OUR EVAL

Decay asymmetry parameters
CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda\pi^+ = -0.768 \pm 0.015$ (S = 3.4)
NODE=S033A;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda\rho^+ = -0.76 \pm 0.07$
NODE=S033A05;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma^+\pi^0 = -0.484 \pm 0.027$
NODE=S033ALS;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma^+\eta = -0.99 \pm 0.06$
NODE=S033A08;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma^+\eta' = -0.46 \pm 0.07$
NODE=S033A09;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma^0\pi^+ = -0.466 \pm 0.018$
NODE=S033A03;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma(1385)^+\pi^0 = -0.92 \pm 0.09$
NODE=S033A07;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma(1385)^0\pi^+ = -0.79 \pm 0.11$
NODE=S033A06;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda\ell^+\nu_\ell = -0.875 \pm 0.033$
NODE=S033ALC;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to pK_S^0 = -0.754 \pm 0.010$
NODE=S033A04;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda K^+ = -0.546 \pm 0.035$
NODE=S033A11;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Sigma^0 K^+ = -0.54 \pm 0.20$
NODE=S033A10;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(1405)\pi^+ = 0.58 \pm 0.28$
NODE=S033A17;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(1520)\pi^+ = 0.93 \pm 0.09$
NODE=S033A18;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(1600)\pi^+ = 0.2 \pm 0.5$
NODE=S033A19;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(1670)\pi^+ = 0.82 \pm 0.08$
NODE=S033A20;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(1690)\pi^+ = 0.958 \pm 0.034$
NODE=S033A21;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Lambda(2000)\pi^+ = -0.57 \pm 0.19$
NODE=S033A22;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Delta(1232)^{++}K^- = 0.55 \pm 0.04$
NODE=S033A23;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Delta(1600)^{++}K^- = -0.50 \pm 0.18$
NODE=S033A24;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Delta(1700)^{++}K^- = 0.22 \pm 0.08$
NODE=S033A25;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \overline{K}_0^*(700)^0 p = -0.1 \pm 0.7$
NODE=S033A26;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \overline{K}_0^*(1430)^0 p = 0.34 \pm 0.14$
NODE=S033A28;DTYPE=d;CLUMP=D

α FOR $\Lambda_c^+ \to \Xi^0 K^+ = 0.01 \pm 0.16$
NODE=S033A30;DTYPE=d;CLUMP=D

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda\pi^+$, $\overline{\Lambda}_c^- \to \overline{\Lambda}\pi^- = 0.020 \pm 0.016$
NODE=S033AC1;DTYPE=d;CLUMP=D

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Sigma^0\pi^+$, $\overline{\Lambda}_c^- \to \overline{\Sigma}^0\pi^- = -0.02 \pm 0.05$
NODE=S033A12;DTYPE=d;CLUMP=D

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda e^+\nu_e$, $\overline{\Lambda}_c^- \to \overline{\Lambda}e^-\overline{\nu}_e = 0.00 \pm 0.04$
NODE=S033ACP;DTYPE=d;CLUMP=D

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Lambda K^+$, $\overline{\Lambda}_c^- \to \overline{\Lambda}K^- = -0.02 \pm 0.11$
NODE=S033A13;DTYPE=d;CLUMP=D

$(\alpha + \overline{\alpha})/(\alpha - \overline{\alpha})$ in $\Lambda_c^+ \to \Sigma^0 K^+$, $\overline{\Lambda}_c^- \to \overline{\Sigma}^0 K^- = 0.1 \pm 0.4$
NODE=S033A14;DTYPE=d;CLUMP=D

$A_{CP}(\Lambda X)$ in $\Lambda_c \to \Lambda X$, $\overline{\Lambda}_c \to \overline{\Lambda}X = (2 \pm 7)\%$
NODE=S033A00;DTYPE=d;CLUMP=D

$A_{CP}(\Lambda K^+)$ in $\Lambda_c \to \Lambda K^+$, $\overline{\Lambda}_c \to \overline{\Lambda}K^- = 0.021 \pm 0.026$
NODE=S033A15;DTYPE=d;CLUMP=D

$A_{CP}(\Sigma^0 K^+)$ in $\Lambda_c \to \Sigma^0 K^+$, $\overline{\Lambda}_c \to \overline{\Sigma}^0 K^- = 0.03 \pm 0.05$
NODE=S033A16;DTYPE=d;CLUMP=D

$\Delta A_{CP} = A_{CP}(\Lambda_c^+ \to pK^+K^-) - A_{CP}(\Lambda_c^+ \to p\pi^+\pi^-) = (0.3 \pm 1.1)\%$
NODE=S033A01;DTYPE=d;CLUMP=D

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 $\Lambda_c^+ \to p\overline{K}^*(892)^0$ seen in $\Lambda_c^+ \to pK^-\pi^+$ has been multiplied up to include $\overline{K}^*(892)^0 \to \overline{K}^0\pi^0$ decays.

NODE=S033215;NODE=S033

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					NODE=S033;CLUMP=A
pK_S^0		(1.61± 0.07) %	S=1.1	873	DESIG=24
pK_L^0		(1.67± 0.07) %		873	DESIG=169
$pK^-\pi^+$		(6.35± 0.25) %	S=1.3	823	DESIG=4
$p\overline{K}_0^*(700)^0$		(1.9 ± 0.6) $\times 10^{-3}$		719	DESIG=152
$p\overline{K}^*(892)^0$	[a]	(1.41± 0.07) %		685	DESIG=5
$p\overline{K}_0^*(1430)$		(9.3 ± 1.8) $\times 10^{-3}$		†	DESIG=150
$\Delta(1232)^{++}K^-$		(1.79± 0.09) %		710	DESIG=6
$\Delta(1600)^{++}K^-$		(2.9 ± 1.0) $\times 10^{-3}$		–	DESIG=151
$\Delta(1700)^{++}K^-$		(2.5 ± 0.6) $\times 10^{-3}$		–	DESIG=154
$\Lambda(1405)^0\pi^+$		(4.9 ± 1.9) $\times 10^{-3}$		–	DESIG=155
$\Lambda(1520)\pi^+$	[a]	(1.18± 0.16) $\times 10^{-3}$		628	DESIG=38
$\Lambda(1600)\pi^+$		(3.3 ± 1.2) $\times 10^{-3}$		571	DESIG=158
$\Lambda(1670)\pi^+$		(7.5 ± 2.1) $\times 10^{-4}$		516	DESIG=159
$\Lambda(1690)\pi^+$		(7.6 ± 2.3) $\times 10^{-4}$		504	DESIG=160
$\Lambda(2000)\pi^+$		(6.1 ± 0.7) $\times 10^{-3}$		234	DESIG=161
$pK^-\pi^+$ nonresonant		(3.5 ± 0.4) %		823	DESIG=39
$pK_S^0\pi^0$		(1.99± 0.12) %		823	DESIG=25
$pK_L^0\pi^0$		(2.02± 0.14) %		823	DESIG=171
$nK_S^0\pi^+$		(1.86± 0.09) %		821	DESIG=114
$nK_S^0K^+$		(3.9 $^{+\ 1.7}_{-\ 1.4}$) $\times 10^{-4}$		612	DESIG=168
$nK_S^0\pi^+\pi^0$		(8.5 ± 1.3) $\times 10^{-3}$		756	DESIG=167
$nK^-\pi^+\pi^+$		(1.90± 0.12) %		756	DESIG=140
$p\overline{K}^0\eta$		(8.9 ± 0.6) $\times 10^{-3}$	S=1.1	568	DESIG=62
$pK_S^0\pi^+\pi^-$		(1.62± 0.11) %	S=1.1	754	DESIG=26
$pK_L^0\pi^+\pi^-$		(1.69± 0.11) %		754	DESIG=170
$pK^-\pi^+\pi^0$		(4.52± 0.28) %	S=1.5	759	DESIG=18
$pK^*(892)^-\pi^+$	[a]	(1.4 ± 0.5) %		580	DESIG=8
$p(K^-\pi^+)_{\text{nonresonant}}\pi^0$		(4.6 ± 0.8) %		759	DESIG=40
$\Delta(1232)\overline{K}^*(892)$		seen		419	DESIG=19
$pK^-2\pi^+\pi^-$		(1.4 ± 1.0) $\times 10^{-3}$		671	DESIG=23
$pK^-\pi^+2\pi^0$		(1.0 ± 0.5) %		678	DESIG=41
Hadronic modes with a p or n: $S = 0$ final states					NODE=S033;CLUMP=D
$p\pi^0$		(1.6 $^{+\ 0.7}_{-\ 0.6}$) $\times 10^{-4}$		945	DESIG=115
$n\pi^+$		(6.6 ± 1.3) $\times 10^{-4}$		944	DESIG=129
$p\eta$		(1.49± 0.08) $\times 10^{-3}$	S=1.1	856	DESIG=116
$p\eta'$		(4.9 ± 0.9) $\times 10^{-4}$		639	DESIG=128
$p\omega(782)^0$		(8.9 ± 1.1) $\times 10^{-4}$	S=1.2	751	DESIG=121
$p\pi^+\pi^-$		(4.67± 0.24) $\times 10^{-3}$		927	DESIG=30
$pf_0(980)$	[a]	(3.5 ± 2.3) $\times 10^{-3}$		614	DESIG=31
$p\rho(770)^0$		(1.5 ± 0.4) $\times 10^{-3}$		–	DESIG=172
$n\pi^+\pi^0$		(6.4 ± 0.9) $\times 10^{-3}$		927	DESIG=138
$nK^+\pi^0$		$< 7.1 \times 10^{-4}$	CL=90%	824	DESIG=165
$n\pi^+\pi^-\pi^+$		(4.5 ± 0.8) $\times 10^{-3}$		895	DESIG=139
$p2\pi^+2\pi^-$		(2.3 ± 1.5) $\times 10^{-3}$		852	DESIG=32
pK^+K^-		(1.08± 0.05) $\times 10^{-3}$		616	DESIG=33
$p\phi$	[a]	(1.05± 0.14) $\times 10^{-3}$	S=1.1	590	DESIG=34
pK^+K^- non-ϕ		(5.3 ± 1.2) $\times 10^{-4}$		616	DESIG=70
$pK_S^0K_S^0$		(2.38± 0.18) $\times 10^{-4}$		610	DESIG=144
$p\phi\pi^0$		(10 ± 4) $\times 10^{-5}$		460	DESIG=118
$pK^+K^-\pi^0$ nonresonant		$< 6.3 \times 10^{-5}$	CL=90%	494	DESIG=119

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

NODE=S033;CLUMP=B

$\Lambda\pi^+$		(1.31± 0.05) %	S=1.1	864	DESIG=2
$\Lambda(1670)\pi^+$, $\Lambda(1670) \to \eta\Lambda$		(3.5 ± 0.5) × 10^{-3}		–	DESIG=126
$\Lambda\pi^+\pi^0$		(7.10± 0.34) %	S=1.1	844	DESIG=49
$\Lambda\rho^+$		(4.1 ± 0.5) %		636	DESIG=52
$\Sigma(1385)^+\pi^0$, $\Sigma^+ \to \Lambda\pi^+$		(5.1 ± 0.7) × 10^{-3}		–	DESIG=131
$\Sigma(1385)^0\pi^+$, $\Sigma^0 \to \Lambda\pi^0$		(5.6 ± 0.8) × 10^{-3}		–	DESIG=132
$\Lambda\pi^-2\pi^+$		(3.67± 0.26) %	S=1.4	807	DESIG=1
$\Sigma(1385)^+\pi^+\pi^-$, $\Sigma^{*+} \to \Lambda\pi^+$		(1.0 ± 0.5) %		688	DESIG=100
$\Sigma(1385)^-2\pi^+$, $\Sigma^{*-} \to \Lambda\pi^-$		(7.7 ± 1.4) × 10^{-3}		688	DESIG=101
$\Lambda\pi^+\rho^0$		(1.5 ± 0.6) %		524	DESIG=102
$\Sigma(1385)^+\rho^0$, $\Sigma^{*+} \to \Lambda\pi^+$		(5 ± 4) × 10^{-3}		363	DESIG=103
$\Lambda\pi^-2\pi^+$ nonresonant		< 1.1 %	CL=90%	807	DESIG=104
$\Lambda\pi^-\pi^02\pi^+$ total		(2.3 ± 0.8) %		757	DESIG=79
$\Lambda\pi^+\eta$	[a]	(1.87± 0.11) %	S=1.1	691	DESIG=63
$\Sigma(1385)^+\eta$	[a]	(9.1 ± 2.0) × 10^{-3}		570	DESIG=64
$\Lambda\pi^+\omega$	[a]	(1.5 ± 0.5) %		517	DESIG=81
$\Lambda\pi^-\pi^02\pi^+$, no η or ω		< 8 × 10^{-3}	CL=90%	757	DESIG=80
$\Lambda K^+\overline{K}^0$		(5.7 ± 1.1) × 10^{-3}	S=2.0	443	DESIG=65
$\Xi(1690)^0K^+$, $\Xi^{*0} \to \Lambda\overline{K}^0$		(1.6 ± 0.5) × 10^{-3}		286	DESIG=76
$\Sigma^0\pi^+$		(1.29± 0.05) %		825	DESIG=10
$\Sigma^0\pi^+\eta$		(7.6 ± 0.8) × 10^{-3}		635	DESIG=125
$\Sigma^+\pi^0$		(1.26± 0.10) %	S=1.1	827	DESIG=9
$\Sigma^+\eta$		(3.2 ± 0.5) × 10^{-3}		713	DESIG=66
$\Sigma^+\eta'$		(4.2 ± 0.9) × 10^{-3}		391	DESIG=123
$\Sigma^+\pi^+\pi^-$		(4.54± 0.20) %	S=1.2	804	DESIG=21
$\Sigma^+\rho^0$		< 1.7 %	CL=95%	575	DESIG=46
$\Sigma^-2\pi^+$		(1.87± 0.18) %		799	DESIG=59
$\Sigma^0\pi^+\pi^0$		(3.6 ± 0.4) %		803	DESIG=50
$\Sigma^+\pi^0\pi^0$		(1.57± 0.14) %		806	DESIG=122
$\Sigma^0\pi^-2\pi^+$		(1.12± 0.31) %		763	DESIG=51
$\Sigma^+\omega$		(1.72± 0.20) %		569	DESIG=47
$\Sigma^-\pi^02\pi^+$		(2.1 ± 0.4) %		762	DESIG=117
$\Sigma^+K^+K^-$		(3.6 ± 0.4) × 10^{-3}	S=1.1	349	DESIG=35
$\Sigma^+\phi$	[a]	(4.0 ± 0.5) × 10^{-3}	S=1.1	295	DESIG=43
$\Xi(1690)^0K^+$, $\Xi^{*0} \to \Sigma^+K^-$		(1.03± 0.25) × 10^{-3}		286	DESIG=75
$\Sigma^+K^+K^-$ nonresonant		< 8 × 10^{-4}	CL=90%	349	DESIG=71
Ξ^0K^+		(5.5 ± 0.7) × 10^{-3}		653	DESIG=44
$\Xi^-K^+\pi^+$		(6.3 ± 0.5) × 10^{-3}	S=1.1	565	DESIG=27
$\Xi^0K^+\pi^0$		(7.8 ± 1.7) × 10^{-3}		574	DESIG=164
$\Xi(1530)^0K^+$		(4.9 ± 0.6) × 10^{-3}	S=1.1	473	DESIG=120

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

NODE=S033;CLUMP=G

ΛK^+		(6.48± 0.31) × 10^{-4}		781	DESIG=73
$\Lambda K^+\pi^0$		(1.48± 0.29) × 10^{-3}		722	DESIG=163
$\Lambda K^+\pi^+\pi^-$		(4.2 ± 1.6) × 10^{-4}		637	DESIG=106
Σ^0K^+		(3.73± 0.31) × 10^{-4}		735	DESIG=74
$\Sigma^+K^0_S$		(4.8 ± 1.4) × 10^{-4}		736	DESIG=130
$\Sigma^0K^+\pi^+\pi^-$		< 2.6 × 10^{-4}	CL=90%	574	DESIG=107
$\Sigma^0K^+\pi^0$		< 1.8 × 10^{-3}	CL=90%	670	DESIG=166
$\Sigma^+K^+\pi^-$		(2.04± 0.26) × 10^{-3}		670	DESIG=36
$\Sigma^+K^*(892)^0$	[a]	(3.5 ± 1.0) × 10^{-3}		470	DESIG=77
$\Sigma^+K^+\pi^-\pi^0$		< 1.1 × 10^{-3}	CL=90%	581	DESIG=147
$\Sigma^-K^+\pi^+$		(3.8 ± 1.2) × 10^{-4}		664	DESIG=78

Doubly Cabibbo-suppressed modes

NODE=S033;CLUMP=H

$pK^+\pi^-$		(1.13± 0.17) × 10^{-4}		823	DESIG=105

Semileptonic modes NODE=S033;CLUMP=E

$\Lambda e^+ \nu_e$	(3.56± 0.13) %			871	DESIG=67
$\Lambda \pi^+ \pi^- e^+ \nu_e$	< 3.9	$\times 10^{-4}$	CL=90%	843	DESIG=145
$p K^- e^+ \nu_e$	(8.8 ± 1.8)	$\times 10^{-4}$		874	DESIG=133
$p K^0_S \pi^- e^+ \nu_e$	< 3.3	$\times 10^{-4}$	CL=90%	821	DESIG=146
$\Lambda(1520) e^+ \nu_e$	(1.0 ± 0.5)	$\times 10^{-3}$		639	DESIG=134
$\Lambda(1405)^0 e^+ \nu_e$, $\Lambda^0 \rightarrow p K^-$	(4.2 ± 1.9)	$\times 10^{-4}$		–	DESIG=135
$\Lambda \mu^+ \nu_\mu$	(3.48± 0.17) %			867	DESIG=68

Inclusive modes NODE=S033;CLUMP=C

e^+ anything	(4.06± 0.13) %		–	DESIG=12
p anything	(50 ±16) %		–	DESIG=53
n anything	(32.6 ± 1.6) %		–	DESIG=55
Λ anything	(38.2 $^{+\ 2.9}_{-\ 2.4}$) %		–	DESIG=16
K^0_S anything	(9.9 ± 0.7) %		–	DESIG=124
3prongs	(24 ± 8) %		–	DESIG=82

$\Delta C = 1$ weak neutral current ($C1$) modes, or Lepton Family number (LF), or Lepton number (L), or Baryon number (B) violating modes NODE=S033;CLUMP=F

$p e^+ e^-$	$C1$	< 5.5	$\times 10^{-6}$	CL=90%	951	DESIG=108
$p \mu^+ \mu^-$ non-resonant	$C1$	< 2.9	$\times 10^{-8}$	CL=90%	937	DESIG=60
$p e^+ \mu^-$	LF	< 9.9	$\times 10^{-6}$	CL=90%	947	DESIG=109
$p e^- \mu^+$	LF	< 1.9	$\times 10^{-5}$	CL=90%	947	DESIG=110
$\overline{p} 2e^+$	L,B	< 2.7	$\times 10^{-6}$	CL=90%	951	DESIG=111
$\overline{p} 2\mu^+$	L,B	< 9.4	$\times 10^{-6}$	CL=90%	937	DESIG=112
$\overline{p} e^+ \mu^+$	L,B	< 1.6	$\times 10^{-5}$	CL=90%	947	DESIG=113
$\Sigma^- \mu^+ \mu^+$	L	< 7.0	$\times 10^{-4}$	CL=90%	812	DESIG=61

Radiative modes NODE=S033;CLUMP=J

$\Sigma^+ \gamma$	< 2.5	$\times 10^{-4}$	CL=90%	834	DESIG=142

Exotic modes NODE=S033;CLUMP=I

$p \gamma_D$	[b] < 8.0	$\times 10^{-5}$	CL=90%	–	DESIG=141

$\Lambda_c(2595)^+$

$I(J^P) = 0(\frac{1}{2}^-)$ NODE=B119

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 NODE=B119M;DTYPE=M

$m - m_{\Lambda_c^+} = 305.79 \pm 0.24$ MeV NODE=B119D;DTYPE=D

Full width $\Gamma = 2.6 \pm 0.6$ MeV NODE=B119W;DTYPE=G

$\Lambda_c^+\pi\pi$ 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.

NODE=B119215;NODE=B119

$\Lambda_c(2595)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+\pi^+\pi^-$	[c] —	117	DESIG=1;OUR EST;→ UNCHECKED ←
$\Sigma_c(2455)^{++}\pi^-$	24 ± 7 %	3	DESIG=2;OUR EST;→ UNCHECKED ←
$\Sigma_c(2455)^0\pi^+$	24 ± 7 %	3	DESIG=3;OUR EST;→ UNCHECKED ←
$\Lambda_c^+\pi^+\pi^-$ 3-body	18 ± 10 %	117	DESIG=6;OUR EST;→ UNCHECKED ←
$\Lambda_c^+\pi^0$	[d] not seen	258	DESIG=4;OUR EST;→ UNCHECKED ←
$\Lambda_c^+\gamma$	not seen	288	DESIG=5;OUR EST;→ UNCHECKED ←

$\Lambda_c(2625)^+$ $I(J^P) = 0(\frac{3}{2}^-)$

NODE=B102

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

Mass $m = 2628.00 \pm 0.15$ MeV — NODE=B102M;DTYPE=M

$m - m_{\Lambda_c^+} = 341.54 \pm 0.05$ MeV — NODE=B102D;DTYPE=D

Full width $\Gamma < 0.52$ MeV, CL = 90% — NODE=B102W;DTYPE=G

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

NODE=B102215;NODE=B102

$\Lambda_c(2625)^+$ DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)	
$\Lambda_c^+\pi^+\pi^-$	[e] (50 ±7) %		184	DESIG=1
$\Sigma_c(2455)^{++}\pi^-$	(2.6±0.4) %		103	DESIG=2
$\Sigma_c(2455)^0\pi^+$	(2.6±0.4) %		103	DESIG=4
$\Lambda_c^+\pi^+\pi^-$ 3-body	large		184	DESIG=3;OUR EST;→ UNCHECKED ←
$\Lambda_c^+\pi^0$	[d] < 50 %	90%	293	DESIG=5
$\Lambda_c^+\gamma$	< 26 %	90%	319	DESIG=6

$\Lambda_c(2860)^+$ $I(J^P) = 0(\frac{3}{2}^+)$

NODE=B178

Mass $m = 2856.1^{+2.3}_{-6.0}$ MeV — NODE=B178M;DTYPE=M

Full width $\Gamma = 68^{+12}_{-22}$ MeV — NODE=B178W;DTYPE=G

$\Lambda_c(2860)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$D^0 p$	seen	259	NODE=B178215;DESIG=1

$\Lambda_c(2880)^+$ $I(J^P) = 0(\frac{5}{2}^+)$

NODE=B151

Mass $m = 2881.63 \pm 0.24$ MeV — NODE=B151M;DTYPE=M

$m - m_{\Lambda_c^+} = 595.17 \pm 0.28$ MeV — NODE=B151D;DTYPE=D

Full width $\Gamma = 5.6^{+0.8}_{-0.6}$ MeV — NODE=B151W;DTYPE=G

$\Lambda_c(2880)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+\pi^+\pi^-$	seen	471	NODE=B151220;DESIG=1;OUR EST
$\Sigma_c(2455)^{0,++}\pi^\pm$	seen	376	DESIG=2;OUR EST
$\Sigma_c(2520)^{0,++}\pi^\pm$	seen	317	DESIG=3;OUR EST
pD^0	seen	316	DESIG=4;OUR EST

$\Lambda_c(2940)^+$

$I(J^P) = 0(\frac{3}{2}^-)$ NODE=B122

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

Mass $m = 2939.6^{+1.3}_{-1.5}$ MeV NODE=B122M;DTYPE=M

Full width $\Gamma = 20^{+6}_{-5}$ MeV NODE=B122W;DTYPE=G

$\Lambda_c(2940)^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
pD^0	seen	420	NODE=B122220;DESIG=1;OUR EST
$\Sigma_c(2455)^{0,++}\pi^\pm$	seen	–	DESIG=2;OUR EST

$\Sigma_c(2455)$

$I(J^P) = 1(\frac{1}{2}^+)$ NODE=B104

$\Sigma_c(2455)^{++}$ mass $m = 2453.97 \pm 0.14$ MeV NODE=B104M++;DTYPE=M

$\Sigma_c(2455)^{+}$ mass $m = 2452.65^{+0.22}_{-0.16}$ MeV NODE=B104M+;DTYPE=M

$\Sigma_c(2455)^{0}$ mass $m = 2453.75 \pm 0.14$ MeV NODE=B104M0;DTYPE=M

$m_{\Sigma_c(2455)^{++}} - m_{\Lambda_c^+} = 167.510 \pm 0.017$ MeV NODE=B104D++;DTYPE=D

$m_{\Sigma_c(2455)^{+}} - m_{\Lambda_c^+} = 166.19^{+0.16}_{-0.08}$ MeV NODE=B104D+;DTYPE=D

$m_{\Sigma_{c2455}^0} - m_{\Lambda_c^+} = 167.290 \pm 0.017$ MeV NODE=B104D0;DTYPE=D

$m_{\Sigma_c(2455)^{++}} - m_{\Sigma_c(2455)^0} = 0.220 \pm 0.013$ MeV NODE=B104D13;DTYPE=D

$m_{\Sigma_c(2455)^{+}} - m_{\Sigma_c(2455)^0} = -1.10^{+0.16}_{-0.08}$ MeV NODE=B104D14;DTYPE=D

$\Sigma_c(2455)^{++}$ full width $\Gamma = 1.89^{+0.09}_{-0.18}$ MeV (S = 1.1) NODE=B104W++;DTYPE=G

$\Sigma_c(2455)^{+}$ full width $\Gamma = 2.3 \pm 0.4$ MeV NODE=B104W+;DTYPE=G

$\Sigma_c(2455)^{0}$ full width $\Gamma = 1.83^{+0.11}_{-0.19}$ MeV (S = 1.2) NODE=B104W0;DTYPE=G

$\Lambda_c^+\pi$ is the only strong decay allowed to a Σ_c having this mass. NODE=B104215;NODE=B104

$\Sigma_c(2455)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+\pi$	≈ 100 %	94	DESIG=1;OUR EST;→ UNCHECKED ←

$\Sigma_c(2520)$

$I(J^P) = 1(\frac{3}{2}^+)$ NODE=B115

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) NODE=B115M++;DTYPE=M

$\Sigma_c(2520)^{+}$ mass $m = 2517.4^{+0.7}_{-0.5}$ MeV NODE=B115M+;DTYPE=M

$\Sigma_c(2520)^{0}$ mass $m = 2518.48 \pm 0.21$ MeV (S = 1.2) NODE=B115M0;DTYPE=M

$m_{\Sigma_c(2520)^{++}} - m_{\Lambda_c^+} = 231.95 \pm 0.18$ MeV (S = 1.8) NODE=B115D++;DTYPE=D

$m_{\Sigma_c(2520)^{+}} - m_{\Lambda_c^+} = 230.9^{+0.7}_{-0.5}$ MeV NODE=B115D+;DTYPE=D

$m_{\Sigma_c(2520)^{0}} - m_{\Lambda_c^+} = 232.02 \pm 0.15$ MeV (S = 1.4) NODE=B115D0;DTYPE=D

$m_{\Sigma_c(2520)^{++}} - m_{\Sigma_c(2520)^0} = 0.01 \pm 0.15$ MeV NODE=B115DI;DTYPE=D

$\Sigma_c(2520)^{++}$ full width $\Gamma = 14.78^{+0.30}_{-0.40}$ MeV NODE=B115W++;DTYPE=G

$\Sigma_c(2520)^{+}$ full width $\Gamma = 17.2^{+4.0}_{-2.2}$ MeV NODE=B115W+;DTYPE=G

$\Sigma_c(2520)^{0}$ full width $\Gamma = 15.3^{+0.4}_{-0.5}$ MeV NODE=B115W0;DTYPE=G

$\Lambda_c^+ \pi$ is the only strong decay allowed to a Σ_c having this mass. NODE=B115220;NODE=B115

$\Sigma_c(2520)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+ \pi$	≈ 100 %	179	DESIG=1;OUR EST;→ UNCHECKED ←

$\Sigma_c(2800)$

$I(J^P) = 1(?^?)$ NODE=B155

$\Sigma_c(2800)^{++}$ mass $m = 2801^{+4}_{-6}$ MeV NODE=B155M++;DTYPE=M
$\Sigma_c(2800)^{+}$ mass $m = 2792^{+14}_{-5}$ MeV NODE=B155M+;DTYPE=M
$\Sigma_c(2800)^{0}$ mass $m = 2806^{+5}_{-7}$ MeV (S = 1.3) NODE=B155M0;DTYPE=M
$m_{\Sigma_c(2800)^{++}} - m_{\Lambda_c^+} = 514^{+4}_{-6}$ MeV NODE=B155D++;DTYPE=D
$m_{\Sigma_c(2800)^{+}} - m_{\Lambda_c^+} = 505^{+14}_{-5}$ MeV NODE=B155D+;DTYPE=D
$m_{\Sigma_c(2800)^{0}} - m_{\Lambda_c^+} = 519^{+5}_{-7}$ MeV (S = 1.3) NODE=B155D0;DTYPE=D
$\Sigma_c(2800)^{++}$ full width $\Gamma = 75^{+22}_{-17}$ MeV NODE=B155W++;DTYPE=G
$\Sigma_c(2800)^{+}$ full width $\Gamma = 60^{+60}_{-40}$ MeV NODE=B155W+;DTYPE=G
$\Sigma_c(2800)^{0}$ full width $\Gamma = 72^{+22}_{-15}$ MeV NODE=B155W0;DTYPE=G

$\Sigma_c(2800)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+ \pi$	seen	443	NODE=B155220;DESIG=1;OUR EST

Ξ_c^+

$I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$ NODE=S045

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) NODE=S045M;DTYPE=M
Mean life $\tau = (453 \pm 5) \times 10^{-15}$ s NODE=S045T;DTYPE=T
$c\tau = 135.8$ μm NODE=S045CTA;DTYPE=C;OUR EVAL

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 $\Xi_c^+ \to \Sigma^+ \overline{K}^*(892)^0$ 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. NODE=S045215;NODE=S045

Ξ_c^+ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)	
				NODE=S045;CLUMP=A
Cabibbo-favored ($S = -2$) decays				
$p 2K_S^0$	$(2.5 \pm 1.3) \times 10^{-3}$		766	DESIG=21
$\Lambda \overline{K}^0 \pi^+$	—		852	DESIG=15;OUR EST;→ UNCHECKED ←
$\Sigma(1385)^+ \overline{K}^0$	[a] (2.9 ± 2.0) %		746	DESIG=16
$\Lambda K^- 2\pi^+$	$(9 \pm 4) \times 10^{-3}$		787	DESIG=1
$\Lambda \overline{K}^*(892)^0 \pi^+$	[a] $< 5 \times 10^{-3}$	CL=90%	608	DESIG=8
$\Sigma(1385)^+ K^- \pi^+$	[a] $< 6 \times 10^{-3}$	CL=90%	678	DESIG=9
$\Sigma^+ K^- \pi^+$	(2.7 ± 1.2) %		810	DESIG=4
$\Sigma^+ \overline{K}^*(892)^0$	[a] (2.3 ± 1.1) %		658	DESIG=6
$\Sigma^0 K^- 2\pi^+$	$(8 \pm 5) \times 10^{-3}$		735	DESIG=2
$\Xi^0 \pi^+$	(1.6 ± 0.8) %		876	DESIG=11
$\Xi^- 2\pi^+$	(2.9 ± 1.3) %		851	DESIG=3
$\Xi(1530)^0 \pi^+$	[a] $< 2.9 \times 10^{-3}$	CL=90%	749	DESIG=10
$\Xi(1620)^0 \pi^+$	seen		–	DESIG=24
$\Xi(1690)^0 \pi^+$	seen		644	DESIG=25
$\Xi^0 \pi^+ \pi^0$	(6.7 ± 3.5) %		856	DESIG=7
$\Xi^0 \pi^- 2\pi^+$	(5.0 ± 2.6) %		818	DESIG=12
$\Xi^0 e^+ \nu_e$	(7 ± 4) %		884	DESIG=5
$\Omega^- K^+ \pi^+$	$(2.0 \pm 1.5) \times 10^{-3}$		399	DESIG=17

Cabibbo-suppressed decays NODE=S045;CLUMP=B

$pK^-\pi^+$		$(6.2\pm3.0)\times10^{-3}$	S=1.5	944	DESIG=13
$p\overline{K}^*(892)^0$	[a]	$(3.3\pm1.7)\times10^{-3}$		828	DESIG=14
$\Sigma^+\pi^+\pi^-$		(1.4 ± 0.8) %		922	DESIG=22
$\Sigma^-2\pi^+$		$(5.1\pm3.4)\times10^{-3}$		918	DESIG=23
$\Sigma^+K^+K^-$		$(4.3\pm2.5)\times10^{-3}$		579	DESIG=18
$\Sigma^+\phi$	[a]	$<3.2\times10^{-3}$	CL=90%	549	DESIG=19
$\Xi(1690)^0K^+$, $\Xi^0\to\Sigma^+K^-$		$<1.3\times10^{-3}$	CL=90%	501	DESIG=20
$p\phi(1020)$		$(1.2\pm0.6)\times10^{-4}$		751	DESIG=26

Ξ_c^0

$I(J^P)=\frac{1}{2}(\frac{1}{2}^+)$ NODE=S048

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

Mass $m = 2470.44 \pm 0.28$ MeV (S = 1.2) NODE=S048M;DTYPE=M

$m_{\Xi_c^0} - m_{\Xi_c^+} = 2.72 \pm 0.23$ MeV (S = 1.1) NODE=S048D;DTYPE=D

Mean life $\tau = (150.4 \pm 2.8)\times10^{-15}$ s (S = 1.4) NODE=S048T;DTYPE=T

$c\tau = 45.1\ \mu$m NODE=S048CTA;DTYPE=C;OUR EVAL

Decay asymmetry parameters CLUMP=D

$\Xi^-\pi^+$ $\alpha = -0.64 \pm 0.05$ NODE=S048A;DTYPE=d;CLUMP=D

α FOR $\overline{\Xi}_c^0\to\overline{\Xi}^+\pi^-=0.61\pm0.05$ NODE=S048A01;DTYPE=d;CLUMP=D

α FOR $\Xi_c^0\to\Lambda\overline{K}^*(892)^0=0.15\pm0.22$ NODE=S048A02;DTYPE=d;CLUMP=D

α FOR $\Xi_c^0\to\Sigma^+K^*(892)^-=-0.52\pm0.30$ NODE=S048A03;DTYPE=d;CLUMP=D

α FOR $\Xi_c^0\to\Xi^0\pi^0=-0.90\pm0.27$ NODE=S048A04;DTYPE=d;CLUMP=D

τ_{mix}, $\Xi_c^0-\overline{\Xi}_c^0$ oscillation period $>1.3\times10^{-12}$ s NODE=S048B00;DTYPE=d

Ξ_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)	
Cabibbo-favored decays				NODE=S048215;NODE=S048;CLUMP=A
$pK^-K^-\pi^+$	$(4.9\ \pm1.0\ )\times10^{-3}$		676	DESIG=10
$pK^-\overline{K}^*(892)^0$, $\overline{K}^{*0}\to K^-\pi^+$	$(2.0\ \pm0.6\ )\times10^{-3}$		413	DESIG=2
$pK^-K^-\pi^+$ (no $\overline{K}^{*0}$)	$(3.0\ \pm0.8\ )\times10^{-3}$		676	DESIG=11
ΛK_S^0	$(3.2\ \pm0.6\ )\times10^{-3}$		906	DESIG=6
$\Lambda K^-\pi^+$	(1.45 ± 0.28) %		856	DESIG=12
$\Lambda\overline{K}^*(892)^0$	$(2.6\ \pm0.6\ )\times10^{-3}$		717	DESIG=19
$\Lambda\overline{K}^0\pi^+\pi^-$	seen		786	DESIG=8
$\Lambda K^-\pi^+\pi^+\pi^-$	seen		703	DESIG=9
$\Sigma^0K_S^0$	$(5.4\ \pm1.4\ )\times10^{-4}$		864	DESIG=25
Σ^+K^-	$(1.8\ \pm0.4\ )\times10^{-3}$		868	DESIG=26
$\Sigma^0\overline{K}^*(892)^0$	$(9.9\ \pm1.9\ )\times10^{-3}$		658	DESIG=20
$\Sigma^+K^*(892)^-$	$(4.9\ \pm1.3\ )\times10^{-3}$		661	DESIG=21
$\Xi^-\pi^+$	(1.43 ± 0.27) %		875	DESIG=1
$\Xi^-\pi^+\pi^+\pi^-$	$(4.8\ \pm2.3\ )$ %		816	DESIG=3
$\Xi^0\pi^0$	$(6.9\ \pm1.4\ )\times10^{-3}$		879	DESIG=30
$\Xi^0\eta$	$(1.6\ \pm0.4\ )\times10^{-3}$		771	DESIG=31
$\Xi^0\eta'$	$(1.1\ \pm0.4\ )\times10^{-3}$		479	DESIG=32
$\Xi^0\phi$, $\phi\to K^+K^-$	$(5.2\ \pm1.2\ )\times10^{-4}$		–	DESIG=23
$\Xi^0K^+K^-$ nonresonant	$(5.6\ \pm1.2\ )\times10^{-4}$		444	DESIG=24
Ω^-K^+	$(4.2\ \pm0.9\ )\times10^{-3}$		522	DESIG=4
$\Xi^-e^+\nu_e$	(1.05 ± 0.20) %		882	DESIG=7
$\Xi^-\mu^+\nu_\mu$	(1.01 ± 0.21) %		878	DESIG=18
$\Xi^0\gamma$	$<1.7\times10^{-4}$	90%	885	DESIG=27
$\Xi^0\mu^+\mu^-$	$<6\times10^{-5}$	90%	869	DESIG=28
$\Xi^0e^+e^-$	$<1.0\times10^{-4}$	90%	885	DESIG=29

Cabibbo-suppressed decays

NODE=S048;CLUMP=B

$\Lambda_c^+ \pi^-$	$(5.5 \pm 1.1) \times 10^{-3}$	115	DESIG=17
$\Xi^- K^+$	$(3.9 \pm 1.1) \times 10^{-4}$	789	DESIG=13
$\Lambda K^+ K^-$ (no ϕ)	$(4.1 \pm 1.3) \times 10^{-4}$	648	DESIG=14
$\Lambda\phi$	$(4.9 \pm 1.3) \times 10^{-4}$	621	DESIG=15

$\Xi_c'^+$

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

NODE=S058

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)

NODE=S058M;DTYPE=M

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

NODE=S058D;DTYPE=D

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

NODE=S058DM0;DTYPE=D

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

NODE=S058215;NODE=S058

$\Xi_c'^+$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ \gamma$	seen	108	DESIG=1;OUR EST;→ UNCHECKED ←

$\Xi_c'^0$

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

NODE=S059

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

Mass $m = 2578.7 \pm 0.5$ MeV

NODE=S059M;DTYPE=M

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

NODE=S059D;DTYPE=D

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

NODE=S059215;NODE=S059

$\Xi_c'^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^0 \gamma$	seen	106	DESIG=1;OUR EST;→ UNCHECKED ←

$\Xi_c(2645)$

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

NODE=B146

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

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

NODE=B146M+;DTYPE=M

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

NODE=B146M0;DTYPE=M

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

NODE=B146D+;DTYPE=D

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

NODE=B146D0;DTYPE=D

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

NODE=B146DD;DTYPE=D

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

NODE=B146W+;DTYPE=G

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

NODE=B146W0;DTYPE=G

$\Xi_c\pi$ is the only strong decay allowed to a Ξ_c resonance having this mass. NODE=B146215;NODE=B146

$\Xi_c(2645)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^0\pi^+$	seen	102	DESIG=2;OUR EST;→ UNCHECKED ←
$\Xi_c^+\pi^-$	seen	106	DESIG=1;OUR EST;→ UNCHECKED ←

$\Xi_c(2790)$ $I(J^P) = \frac{1}{2}(\frac{1}{2}^-)$ NODE=B149

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

$\Xi_c(2790)^+$ mass = 2791.9 ± 0.5 MeV NODE=B149M+;DTYPE=M
$\Xi_c(2790)^0$ mass = 2793.9 ± 0.5 MeV NODE=B149M0;DTYPE=M
$m_{\Xi_c(2790)^+} - m_{\Xi_c'^0} = 213.20 \pm 0.22$ MeV NODE=B149DP+;DTYPE=D
$m_{\Xi_c(2790)^0} - m_{\Xi_c'^+} = 215.70 \pm 0.22$ MeV NODE=B149DP0;DTYPE=D
$m_{\Xi_c(2790)^+} - m_{\Xi_c(2790)^0} = -2.0 \pm 0.7$ MeV NODE=B149D+0;DTYPE=D
$\Xi_c(2790)^+$ width = 8.9 ± 1.0 MeV NODE=B149W+;DTYPE=G
$\Xi_c(2790)^0$ width = 10.0 ± 1.1 MeV NODE=B149W0;DTYPE=G

$\Xi_c(2790)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c'\pi$	seen	159	NODE=B149215;DESIG=1
$\Lambda_c^+K^-$	seen	98	DESIG=5

$\Xi_c(2815)$ $I(J^P) = \frac{1}{2}(\frac{3}{2}^-)$ NODE=B148

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

$\Xi_c(2815)^+$ mass m = 2816.51 ± 0.25 MeV (S = 1.2) NODE=B148M+;DTYPE=M
$\Xi_c(2815)^0$ mass m = 2819.79 ± 0.30 MeV (S = 1.1) NODE=B148M0;DTYPE=M
$m_{\Xi_c(2815)^+} - m_{\Xi_c^+} = 348.80 \pm 0.10$ MeV NODE=B148D+;DTYPE=D
$m_{\Xi_c(2815)^0} - m_{\Xi_c^0} = 349.35 \pm 0.11$ MeV NODE=B148D0;DTYPE=D
$m_{\Xi_c(2815)^+} - m_{\Xi_c(2815)^0} = -3.27 \pm 0.27$ MeV NODE=B148DD;DTYPE=D
$\Xi_c(2815)^+$ full width $\Gamma = 2.43 \pm 0.26$ MeV NODE=B148W+;DTYPE=G
$\Xi_c(2815)^0$ full width Γ = 2.54 ± 0.25 MeV NODE=B148W0;DTYPE=G

The $\Xi_c\pi\pi$ modes are consistent with being entirely via $\Xi_c(2645)\pi$. NODE=B148215;NODE=B148

$\Xi_c(2815)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c'\pi$	seen	188	DESIG=3
$\Xi_c(2645)\pi$	seen	102	DESIG=5
$\Xi_c^0\gamma$	seen	325	DESIG=6;OUR EVAL

$\Xi_c(2970)$ $I(J^P) = \frac{1}{2}(\frac{1}{2}^+)$ NODE=B130

was $\Xi_c(2980)$

$\Xi_c(2970)^+$ m = 2964.3 ± 1.5 MeV (S = 3.9) NODE=B130M+;DTYPE=M
$\Xi_c(2970)^0$ m = 2967.1 ± 1.7 MeV (S = 6.7) NODE=B130M0;DTYPE=M
$m_{\Xi_c(2970)^+} - m_{\Xi_c^+} = 496.6 \pm 1.5$ MeV (S = 3.7) NODE=B130DM+;DTYPE=D
$m_{\Xi_c(2970)^0} - m_{\Xi_c^0} = 496.7 \pm 1.8$ MeV (S = 5.3) NODE=B130DM0;DTYPE=D
$m_{\Xi_c(2970)^+} - m_{\Xi_c(2970)^0} = -2.8 \pm 1.9$ MeV (S = 4.8) NODE=B130D+0;DTYPE=D
$\Xi_c(2970)^+$ width $\Gamma = 20.9^{+2.4}_{-3.5}$ MeV (S = 1.2) NODE=B130W+;DTYPE=G

$\Xi_c(2970)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+ \overline{K}\pi$	seen	223	NODE=B130215;DESIG=1
$\Sigma_c(2455)\overline{K}$	seen	122	DESIG=2;OUR EST
$\Lambda_c^+ \overline{K}$	not seen	410	DESIG=3;OUR EST
$\Lambda_c^+ K^-$	seen	410	DESIG=7
$\Xi_c 2\pi$	seen	381	DESIG=4;OUR EST
$\Xi_c'\pi$	seen	–	DESIG=6
$\Xi_c(2645)\pi$	seen	274	DESIG=5

$\Xi_c(3055)$

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

NODE=B157

Mass $m = 3055.9 \pm 0.4$ MeV — NODE=B157M+;DTYPE=M

Full width $\Gamma = 7.8 \pm 1.9$ MeV — NODE=B157W+;DTYPE=G

$\Xi_c(3055)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Sigma^{++}K^-$	seen	–	NODE=B157215;DESIG=1;OUR EST
ΛD^+	seen	316	DESIG=2;OUR EST

$\Xi_c(3080)$

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

NODE=B147

$\Xi_c(3080)^+$ $m = 3077.2 \pm 0.4$ MeV — NODE=B147M+;DTYPE=M

$\Xi_c(3080)^0$ $m = 3079.9 \pm 1.4$ MeV (S = 1.3) — NODE=B147M0;DTYPE=M

$\Xi_c(3080)^+$ width $\Gamma = 3.6 \pm 1.1$ MeV (S = 1.5) — NODE=B147W+;DTYPE=G

$\Xi_c(3080)^0$ width $\Gamma = 5.6 \pm 2.2$ MeV — NODE=B147W0;DTYPE=G

$\Xi_c(3080)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Lambda_c^+ \overline{K}\pi$	seen	415	NODE=B147215;DESIG=1;OUR EST; → UNCHECKED ←
$\Sigma_c(2455)\overline{K}$	seen	342	DESIG=2;OUR EST;→ UNCHECKED ←
$\Sigma_c(2455)^{++}K^-$	seen	342	DESIG=7;OUR EST;→ UNCHECKED ←
$\Sigma_c(2520)^{++}K^-$	seen	239	DESIG=8;OUR EST;→ UNCHECKED ←
$\Sigma_c(2455)\overline{K}$ + $\Sigma_c(2520)\overline{K}$	seen	–	DESIG=3;OUR EST;→ UNCHECKED ←
$\Lambda_c^+ \overline{K}$	not seen	536	DESIG=4;OUR EST;→ UNCHECKED ←
$\Lambda_c^+ \overline{K}\pi^+\pi^-$	not seen	144	DESIG=5;OUR EST;→ UNCHECKED ←
ΛD^+	seen	362	DESIG=6;OUR EST;→ UNCHECKED ←

Ω_c^0

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

NODE=S047

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

Mass $m = 2695.3 \pm 0.4$ MeV — NODE=S047M;DTYPE=M

Mean life $\tau = (273 \pm 12) \times 10^{-15}$ s — NODE=S047T;DTYPE=T

$c\tau = 82$ μm — NODE=S047CTA;DTYPE=C;OUR EVAL

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

NODE=S047215;NODE=S047

Ω_c^0 DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)	
Cabibbo-favored ($S=-3$) decays — relative to $\Omega^-\pi^+$				NODE=S047;CLUMP=A
$\Omega^-\pi^+$	**DEFINED AS 1**		821	DESIG=2
$\Omega^-\pi^+\pi^0$	1.80 ±0.33		797	DESIG=6
$\Omega^-\rho^+$	>1.3	90%	532	DESIG=12
$\Omega^-\pi^-2\pi^+$	0.31 ±0.05		753	DESIG=3
$\Omega^- e^+\nu_e$	1.98 ±0.29		829	DESIG=7
$\Omega^-\mu^+\nu_\mu$	1.94 ±0.21		824	DESIG=20
$\Xi^0\overline{K}^0$	1.64 ±0.29		950	DESIG=9
$\Xi^0 K^-\pi^+$	1.20 ±0.18		901	DESIG=5
$\Xi^0\overline{K}^{*0}$, $\overline{K}^{*0}\to K^-\pi^+$	0.68 ±0.16		764	DESIG=15
$\Omega(2012)^-\pi^+$, $\Omega(2012)^-\to\Xi^0 K^-$	0.12 ±0.05		–	DESIG=17
$\Xi^-\overline{K}^0\pi^+$	2.12 ±0.28		895	DESIG=10
$\Omega(2012)^-\pi^+$, $\Omega(2012)^-\to\Xi^-\overline{K}^0$	0.12 ±0.06		–	DESIG=18
$\Xi^- K^-2\pi^+$	0.63 ±0.09		830	DESIG=1
$\Xi(1530)^0 K^-\pi^+$, $\Xi^{*0}\to\Xi^-\pi^+$	0.21 ±0.06		757	DESIG=13
$\Xi^-\overline{K}^{*0}\pi^+$	0.34 ±0.11		653	DESIG=14
$p K^- K^-\pi^+$	seen		864	DESIG=16
$\Sigma^+ K^- K^-\pi^+$	<0.32	90%	689	DESIG=4
$\Lambda\overline{K}^0\overline{K}^0$	1.72 ±0.35		837	DESIG=8
Singly Cabibbo-suppressed modes — relative to $\Omega^-\pi^+$				NODE=S047;CLUMP=B
$\Xi^-\pi^+$	0.161±0.010		–	DESIG=21
$\Omega^- K^+$	0.061±0.006		–	DESIG=23
Doubly Cabibbo-suppressed modes — relative to $\Omega^-\pi^+$				NODE=S047;CLUMP=C
$\Xi^- K^+$	<0.07	90%	–	DESIG=22

$\Omega_c(2770)^0$

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

NODE=S053

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

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

NODE=S053M;DTYPE=M

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

NODE=S053D;DTYPE=D

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

NODE=S053215;NODE=S053

$\Omega_c(2770)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Omega_c^0\gamma$	presumably 100%	70	DESIG=1;OUR EST;→ UNCHECKED ←

$\Omega_c(3000)^0$

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

NODE=B173

Mass $m = 3000.46 \pm 0.25$ MeV

NODE=B173M;DTYPE=M

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

NODE=B173W;DTYPE=G

$\Omega_c(3000)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	182	NODE=B173215;DESIG=1

$\Omega_c(3050)^0$ $I(J^P) = ?(?^?)$

NODE=B174

Mass $m = 3050.17 \pm 0.19$ MeV
NODE=B174M;DTYPE=M
Full width $\Gamma < 1.8$ MeV, CL = 95%
NODE=B174W;DTYPE=G

$\Omega_c(3050)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	278	NODE=B174215;DESIG=1

$\Omega_c(3065)^0$ $I(J^P) = ?(?^?)$

NODE=B175

Mass $m = 3065.58 \pm 0.21$ MeV
NODE=B175M;DTYPE=M
Full width $\Gamma = 3.4^{+0.7}_{-0.8}$ MeV (S = 1.7)
NODE=B175W;DTYPE=G

$\Omega_c(3065)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	303	NODE=B175215;DESIG=1

$\Omega_c(3090)^0$ $I(J^P) = ?(?^?)$

NODE=B176

Mass $m = 3090.15 \pm 0.26$ MeV
NODE=B176M;DTYPE=M
Full width $\Gamma = 8.5^{+0.8}_{-1.7}$ MeV
NODE=B176W;DTYPE=G

$\Omega_c(3090)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	340	NODE=B176215;DESIG=1

$\Omega_c(3120)^0$ $I(J^P) = ?(?^?)$

NODE=B177

Mass $m = 3118.98^{+0.27}_{-0.35}$ MeV
NODE=B177M;DTYPE=M
Full width $\Gamma < 2.5$ MeV, CL = 95%
NODE=B177W;DTYPE=G

$\Omega_c(3120)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	379	NODE=B177215;DESIG=1

$\Omega_c(3185)^0$ $I(J^P) = ?(?^?)$

NODE=B209

Mass $m = 3185^{+7.6}_{-1.9}$ MeV
NODE=B209M;DTYPE=M
Full width $\Gamma = 50^{+12}_{-21}$ MeV
NODE=B209W;DTYPE=G

$\Omega_c(3185)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	460	NODE=B209215;DESIG=1

$\Omega_c(3327)^0$ $I(J^P) = ?(?^?)$

NODE=B210

Mass $m = 3327.1^{+1.2}_{-1.8}$ MeV
NODE=B210M;DTYPE=M
Full width $\Gamma = 20^{+14}_{-5}$ MeV
NODE=B210W;DTYPE=G

$\Omega_c(3327)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)	
$\Xi_c^+ K^-$	seen	610	NODE=B210215;DESIG=1

NOTES

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

[b] Here γ_D stands for a dark photon. LINKAGE=DPT

[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. LINKAGE=LC

[d] A test that the isospin is indeed 0, so that the particle is indeed a Λ_c^+. LINKAGE=B19

[e] In the isospin limit, this braching fraction would be 2/3, the other 1/3 being decays to $\Lambda_c^+ \pi^0 \pi^0$. LINKAGE=ISP