CHARMED MESONS
($C = \pm 1$)

$D^+ = c\overline{d}$, $D^0 = c\overline{u}$, $\overline{D}^0 = \overline{c}u$, $D^- = \overline{c}d$, similarly for D^*'s

$D^\pm$

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

Mass $m = 1869.3 \pm 0.5$ MeV (S = 1.1)
Mean life $\tau = (1.057 \pm 0.015) \times 10^{-12}$ s
$c\tau = 317$ μm

CP-violation decay-rate asymmetries

$A_{CP}(K^+K^-\pi^\pm) = -0.03 \pm 0.07$
$A_{CP}(K^\pm K^{*0}) = -0.12 \pm 0.13$
$A_{CP}(\phi\pi^\pm) = 0.07 \pm 0.09$

$D^+ \to \overline{K}^*(892)^0 \ell^+ \nu_\ell$ form factors

$r_2 = 0.73 \pm 0.15$
$r_v = 1.90 \pm 0.25$
$\Gamma_L/\Gamma_T = 1.23 \pm 0.13$
$\Gamma_+/\Gamma_- = 0.16 \pm 0.04$

D^- modes are charge conjugates of the modes below.

D^+ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Inclusive modes			
e^+ anything	(17.2 ±1.9) %		–
K^- anything	(24.2 ±2.8) %	S=1.4	–
$\overline{K}^0$ anything + K^0 anything	(59 ±7) %		–
K^+ anything	(5.8 ±1.4) %		–
η anything	[oo] < 13 %	CL=90%	–

Leptonic and semileptonic modes

$\mu^+ \nu_\mu$		< 7.2	$\times 10^{-4}$	CL=90%	932
$\overline{K}^0 \ell^+ \nu_\ell$	[pp]	(6.7 ± 0.8)	%		868
$\overline{K}^0 e^+ \nu_e$		(6.6 ± 0.9)	%		868
$\overline{K}^0 \mu^+ \nu_\mu$		$(7.0 \, ^{+3.0}_{-2.0})$	%		865
$K^- \pi^+ e^+ \nu_e$		$(4.2 \, ^{+0.9}_{-0.7})$	%		863
$\overline{K}^*(892)^0 e^+ \nu_e$ $\times$ B($\overline{K}^{*0} \to K^- \pi^+$)		(3.2 ± 0.33)	%		720
$K^- \pi^+ e^+ \nu_e$ nonresonant		< 7	$\times 10^{-3}$	CL=90%	863
$K^- \pi^+ \mu^+ \nu_\mu$		(3.2 ± 0.4)	%	S=1.1	851
$\overline{K}^*(892)^0 \mu^+ \nu_\mu$ $\times$ B($\overline{K}^{*0} \to K^- \pi^+$)		(3.0 ± 0.4)	%		715
$K^- \pi^+ \mu^+ \nu_\mu$ nonresonant		(2.7 ± 1.1)	$\times 10^{-3}$		851
$(\overline{K}^*(892)\pi)^0 e^+ \nu_e$		< 1.2	%	CL=90%	714
$(\overline{K}\pi\pi)^0 e^+ \nu_e$ non-$\overline{K}^*(892)$		< 9	$\times 10^{-3}$	CL=90%	846
$K^- \pi^+ \pi^0 \mu^+ \nu_\mu$		< 1.4	$\times 10^{-3}$	CL=90%	825
$\pi^0 \ell^+ \nu_\ell$	[qq]	(5.7 ± 2.2)	$\times 10^{-3}$		930

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

$\overline{K}^*(892)^0 \ell^+ \nu_\ell$	[pp]	(4.8 ± 0.4)	%		720
$\overline{K}^*(892)^0 e^+ \nu_e$		(4.8 ± 0.5)	%		720
$\overline{K}^*(892)^0 \mu^+ \nu_\mu$		(4.5 ± 0.6)	%	S=1.1	715
$\rho^0 e^+ \nu_e$		< 3.7	$\times 10^{-3}$	CL=90%	776
$\rho^0 \mu^+ \nu_\mu$		$(2.0 \, ^{+1.5}_{-1.3})$	$\times 10^{-3}$		772
$\phi e^+ \nu_e$		< 2.09	%	CL=90%	657
$\phi \mu^+ \nu_\mu$		< 3.72	%	CL=90%	651
$\eta'(958) \mu^+ \nu_\mu$		< 9	$\times 10^{-3}$	CL=90%	684

Hadronic modes with a $\overline{K}$ or $\overline{K}K\overline{K}$

$\overline{K}^0\pi^+$		(2.74±0.29) %		862
$K^-\pi^+\pi^+$	[rr]	(9.1 ±0.6) %		845
$\overline{K}^*(892)^0\pi^+$		(1.28±0.13) %		712
$\times$ B($\overline{K}^{*0} \rightarrow K^-\pi^+$)				
$\overline{K}_0^*(1430)^0\pi^+$		(2.3 ±0.3) %		368
$\times$ B($\overline{K}_0^*(1430)^0 \rightarrow K^-\pi^+$)				
$\overline{K}^*(1680)^0\pi^+$		(3.7 ±0.8) $\times 10^{-3}$		65
$\times$ B($\overline{K}^*(1680)^0 \rightarrow K^-\pi^+$)				
$K^-\pi^+\pi^+$ nonresonant		(8.6 ±0.9) %		845
$\overline{K}^0\pi^+\pi^0$	[rr]	(9.7 ±3.0) %	S=1.1	845
$\overline{K}^0\rho^+$		(6.6 ±2.5) %		680
$\overline{K}^*(892)^0\pi^+$		(6.4 ±0.6) $\times 10^{-3}$		712
$\times$ B($\overline{K}^{*0} \rightarrow \overline{K}^0\pi^0$)				
$\overline{K}^0\pi^+\pi^0$ nonresonant		(1.3 ±1.1) %		845
$K^-\pi^+\pi^+\pi^0$	[rr]	(6.4 ±1.1) %		816
$\overline{K}^*(892)^0\rho^+$ total		(1.4 ±0.9) %		423
$\times$ B($\overline{K}^{*0} \rightarrow K^-\pi^+$)				
$\overline{K}_1(1400)^0\pi^+$		(2.2 ±0.6) %		390
$\times$ B($\overline{K}_1(1400)^0 \rightarrow K^-\pi^+\pi^0$)				
$K^-\rho^+\pi^+$ total		(3.1 ±1.1) %		616
$K^-\rho^+\pi^+$ 3-body		(1.1 ±0.4) %		616
$\overline{K}^*(892)^0\pi^+\pi^0$ total		(4.5 ±0.9) %		687
$\times$ B($\overline{K}^{*0} \rightarrow K^-\pi^+$)				
$\overline{K}^*(892)^0\pi^+\pi^0$ 3-body		(2.8 ±0.9) %		687
$\times$ B($\overline{K}^{*0} \rightarrow K^-\pi^+$)				
$K^*(892)^-\pi^+\pi^+$ 3-body		(7 ±3) $\times 10^{-3}$		688
$\times$ B($K^{*-} \rightarrow K^-\pi^0$)				
$K^-\pi^+\pi^+\pi^0$ nonresonant	[ss]	(1.2 ±0.6) %		816
$\overline{K}^0\pi^+\pi^+\pi^-$	[rr]	(7.0 ±1.0) %		814
$\overline{K}^0 a_1(1260)^+$		(4.0 ±0.9) %		328
$\times$ B($a_1(1260)^+ \rightarrow \pi^+\pi^+\pi^-$)				
$\overline{K}_1(1400)^0\pi^+$		(2.2 ±0.6) %		390
$\times$ B($\overline{K}_1(1400)^0 \rightarrow \overline{K}^0\pi^+\pi^-$)				
$K^*(892)^-\pi^+\pi^+$ 3-body		(1.4 ±0.6) %		688
$\times$ B($K^{*-} \rightarrow \overline{K}^0\pi^-$)				
$\overline{K}^0\rho^0\pi^+$ total		(4.2 ±0.9) %		614
$\overline{K}^0\rho^0\pi^+$ 3-body		(5 ±5) $\times 10^{-3}$		614
$\overline{K}^0\pi^+\pi^+\pi^-$ nonresonant		(8 ±4) $\times 10^{-3}$		814
$K^-\pi^+\pi^+\pi^+\pi^-$		(8.2 ±1.4) $\times 10^{-3}$		772
$\overline{K}^*(892)^0\pi^+\pi^+\pi^-$		(6.8 ±1.8) $\times 10^{-3}$		642
$\times$ B($\overline{K}^{*0} \rightarrow K^-\pi^+$)				

$\overline{K}^*(892)^0\rho^0\pi^+$ $\times$ B($\overline{K}^{*0}\to K^-\pi^+$)		(5.1 $\pm$2.2) $\times 10^{-3}$		242
$K^-\pi^+\pi^+\pi^0\pi^0$		(2.2 $^{+5.0}_{-0.9}$) %		775
$\overline{K}^0\pi^+\pi^+\pi^-\pi^0$		(5.4 $^{+3.0}_{-1.4}$) %		773
$\overline{K}^0\pi^+\pi^+\pi^+\pi^-\pi^-$		(8 $\pm$7) $\times 10^{-4}$		714
$K^-\pi^+\pi^+\pi^+\pi^-\pi^0$		(2.0 $\pm$1.8) $\times 10^{-3}$		718
$\overline{K}^0\overline{K}^0K^+$		(1.8 $\pm$0.8) %		545

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

$\overline{K}^0\rho^+$		(6.6 $\pm$2.5) %		680
$\overline{K}^0a_1(1260)^+$		(8.1 $\pm$1.7) %		328
$\overline{K}^0a_2(1320)^+$		$<$ 3 $\times 10^{-3}$	CL=90%	199
$\overline{K}^*(892)^0\pi^+$		(1.92$\pm$0.19) %		712
$\overline{K}^*(892)^0\rho^+$ total		(2.1 $\pm$1.4) %		423
$\overline{K}^*(892)^0\rho^+$ S-wave	[ss]	(1.7 $\pm$1.6) %		423
$\overline{K}^*(892)^0\rho^+$ P-wave		$<$ 1 $\times 10^{-3}$	CL=90%	423
$\overline{K}^*(892)^0\rho^+$ D-wave		(10 $\pm$7) $\times 10^{-3}$		423
$\overline{K}^*(892)^0\rho^+$ D-wave longitudinal		$<$ 7 $\times 10^{-3}$	CL=90%	423
$\overline{K}_1(1270)^0\pi^+$		$<$ 7 $\times 10^{-3}$	CL=90%	487
$\overline{K}_1(1400)^0\pi^+$		(5.0 $\pm$1.3) %		390
$\overline{K}^*(1410)^0\pi^+$		$<$ 7 $\times 10^{-3}$	CL=90%	382
$\overline{K}_0^*(1430)^0\pi^+$		(3.7 $\pm$0.4) %		368
$\overline{K}^*(1680)^0\pi^+$		(1.45$\pm$0.31) %		65
$\overline{K}^*(892)^0\pi^+\pi^0$ total		(6.7 $\pm$1.4) %		687
$\overline{K}^*(892)^0\pi^+\pi^0$ 3-body		(4.2 $\pm$1.4) %		687
$K^*(892)^-\pi^+\pi^+$ 3-body		(2.1 $\pm$0.9) %		688
$K^-\rho^+\pi^+$ total		(3.1 $\pm$1.1) %		616
$K^-\rho^+\pi^+$ 3-body		(1.1 $\pm$0.4) %		616
$\overline{K}^0\rho^0\pi^+$ total		(4.2 $\pm$0.9) %	CL=90%	614
$\overline{K}^0\rho^0\pi^+$ 3-body		(5 $\pm$5) $\times 10^{-3}$		614
$\overline{K}^0f_0(980)\pi^+$		$<$ 5 $\times 10^{-3}$	CL=90%	461
$\overline{K}^*(892)^0\pi^+\pi^+\pi^-$		(1.02$\pm$0.27) %		642
$\overline{K}^*(892)^0\rho^0\pi^+$		(7.7 $\pm$3.3) $\times 10^{-3}$		242

Pionic modes

$\pi^+\pi^0$	$(\ 2.5\ \pm 0.7\ ) \times 10^{-3}$			925
$\pi^+\pi^+\pi^-$	$(\ 3.2\ \pm 0.6\ ) \times 10^{-3}$			908
$\rho^0\pi^+$	$<\ 1.4$	$\times 10^{-3}$	CL=90%	769
$\pi^+\pi^+\pi^-$ nonresonant	$(\ 2.5\ \pm 0.7\ ) \times 10^{-3}$			908
$\pi^+\pi^+\pi^-\pi^0$	$(\ 1.9\ ^{+1.5}_{-1.2}\ )$	%		882
$\eta\pi^+ \times$ B($\eta \to\ \pi^+\pi^-\pi^0$)	$(\ 1.8\ \pm 0.6\ ) \times 10^{-3}$			848
$\omega\pi^+ \times$ B($\omega \to\ \pi^+\pi^-\pi^0$)	$<\ 6$	$\times 10^{-3}$	CL=90%	764
$\pi^+\pi^+\pi^+\pi^-\pi^-$	$(\ 1.0\ ^{+0.8}_{-0.7}\ ) \times 10^{-3}$			845
$\pi^+\pi^+\pi^+\pi^-\pi^-\pi^0$	$(\ 2.9\ ^{+2.9}_{-2.0}\ ) \times 10^{-3}$			799

Fractions of some of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

$\eta\pi^+$	$(\ 7.5\ \pm 2.5\ ) \times 10^{-3}$			848
$\rho^0\pi^+$	$<\ 1.4$	$\times 10^{-3}$	CL=90%	769
$\omega\pi^+$	$<\ 7$	$\times 10^{-3}$	CL=90%	764
$\eta\rho^+$	$<\ 1.2$	%	CL=90%	658
$\eta'(958)\pi^+$	$<\ 9$	$\times 10^{-3}$	CL=90%	680
$\eta'(958)\rho^+$	$<\ 1.5$	%	CL=90%	355

Hadronic modes with a $K\overline{K}$ pair

$K^+\overline{K}^0$		$(\ 7.2\ \pm 1.2\ ) \times 10^{-3}$			792
$K^+K^-\pi^+$	[rr]	$(\ 8.9\ \pm 0.8\ ) \times 10^{-3}$			744
$\phi\pi^+ \times$ B($\phi \to\ K^+K^-$)		$(\ 3.0\ \pm 0.3\ ) \times 10^{-3}$			647
$K^+\overline{K}^*(892)^0$ $\times$ B($\overline{K}^{*0} \to\ K^-\pi^+$)		$(\ 2.8\ \pm 0.4\ ) \times 10^{-3}$			610
$K^+K^-\pi^+$ nonresonant		$(\ 4.6\ \pm 0.9\ ) \times 10^{-3}$			744
$K^0\overline{K}^0\pi^+$					741
$K^*(892)^+\overline{K}^0$ $\times$ B($K^{*+} \to\ K^0\pi^+$)		$(\ 2.0\ \pm 0.9\ )$ %			611
$K^+K^-\pi^+\pi^0$					682
$\phi\pi^+\pi^0 \times$ B($\phi \to\ K^+K^-$)		$(\ 1.1\ \pm 0.5\ )$ %			619
$\phi\rho^+ \times$ B($\phi \to\ K^+K^-$)		$<\ 7$	$\times 10^{-3}$	CL=90%	268
$K^+K^-\pi^+\pi^0$ non-ϕ		$(\ 1.5\ ^{+0.7}_{-0.6}\ )$ %			682
$K^+\overline{K}^0\pi^+\pi^-$		$<\ 2$	%	CL=90%	678
$K^0K^-\pi^+\pi^+$		$(\ 1.0\ \pm 0.6\ )$ %			678
$K^*(892)^+\overline{K}^*(892)^0$ $\times$ B^2($K^* \to\ K\pi^+$)		$(\ 1.2\ \pm 0.5\ )$ %			273
$K^0K^-\pi^+\pi^+$ non-$K^{*+}\overline{K}^{*0}$		$<\ 7.9$	$\times 10^{-3}$	CL=90%	678
$K^+K^-\pi^+\pi^+\pi^-$					600
$\phi\pi^+\pi^+\pi^-$ $\times$ B($\phi \to\ K^+K^-$)		$<\ 1$	$\times 10^{-3}$	CL=90%	565
$K^+K^-\pi^+\pi^+\pi^-$ nonresonant		$<\ 3$	%	CL=90%	600

Fractions of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

$\phi\pi^+$		$(\ 6.1\ \pm 0.6\ ) \times 10^{-3}$			647
$\phi\pi^+\pi^0$		$(\ 2.3\ \pm 1.0\ )$ %			619
$\phi\rho^+$		$<\ 1.5$	%	CL=90%	268
$\phi\pi^+\pi^+\pi^-$		$<\ 2$	$\times 10^{-3}$	CL=90%	565
$K^+\overline{K}^*(892)^0$		$(\ 4.2\ \pm 0.5\ ) \times 10^{-3}$			610
$K^*(892)^+\overline{K}^0$		$(\ 3.0\ \pm 1.4\ )$ %			611
$K^*(892)^+\overline{K}^*(892)^0$		$(\ 2.6\ \pm 1.1\ )$ %			273

Doubly Cabibbo suppressed (*DC*) modes,
$\Delta C = 1$ weak neutral current (*C1*) modes, or
Lepton Family number (*LF*) or Lepton number (*L*) violating modes

$K^+ \pi^+ \pi^-$	*DC*		(6.5 $\pm$2.6)	$\times 10^{-4}$		845
$K^+ \rho^0$	*DC*		$<$ 6	$\times 10^{-4}$	CL=90%	681
$K^*(892)^0 \pi^+$	*DC*		$<$ 1.9	$\times 10^{-4}$	CL=90%	712
$K^+ K^+ K^-$	*DC*		$<$ 1.5	$\times 10^{-4}$	CL=90%	550
ϕK^+	*DC*		$<$ 1.3	$\times 10^{-4}$	CL=90%	527
$\pi^+ e^+ e^-$	*C1*		$<$ 6.6	$\times 10^{-5}$	CL=90%	929
$\pi^+ \mu^+ \mu^-$	*C1*		$<$ 1.8	$\times 10^{-5}$	CL=90%	917
$\rho^+ \mu^+ \mu^-$	*C1*		$<$ 5.6	$\times 10^{-4}$	CL=90%	759
$K^+ e^+ e^-$		[*tt*]	$<$ 4.8	$\times 10^{-3}$	CL=90%	869
$K^+ \mu^+ \mu^-$		[*tt*]	$<$ 3.2	$\times 10^{-4}$	CL=90%	856
$\pi^+ e^\pm \mu^\mp$	*LF*	[*gg*]	$<$ 3.8	$\times 10^{-3}$	CL=90%	926
$\pi^+ e^+ \mu^-$	*LF*		$<$ 3.3	$\times 10^{-3}$	CL=90%	926
$\pi^+ e^- \mu^+$	*LF*		$<$ 3.3	$\times 10^{-3}$	CL=90%	926
$K^+ e^+ \mu^-$	*LF*		$<$ 3.4	$\times 10^{-3}$	CL=90%	866
$K^+ e^- \mu^+$	*LF*		$<$ 3.4	$\times 10^{-3}$	CL=90%	866
$\pi^- e^+ e^+$	*L*		$<$ 4.8	$\times 10^{-3}$	CL=90%	929
$\pi^- \mu^+ \mu^+$	*L*		$<$ 2.2	$\times 10^{-4}$	CL=90%	917
$\pi^- e^+ \mu^+$	*L*		$<$ 3.7	$\times 10^{-3}$	CL=90%	926
$\rho^- \mu^+ \mu^+$	*L*		$<$ 5.6	$\times 10^{-4}$	CL=90%	759
$K^- e^+ e^+$	*L*		$<$ 9.1	$\times 10^{-3}$	CL=90%	869
$K^- \mu^+ \mu^+$	*L*		$<$ 3.2	$\times 10^{-4}$	CL=90%	856
$K^- e^+ \mu^+$	*L*		$<$ 4.0	$\times 10^{-3}$	CL=90%	866
$K^*(892)^- \mu^+ \mu^+$	*L*		$<$ 8.5	$\times 10^{-4}$	CL=90%	703

D^0

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

Mass $m = 1864.5 \pm 0.5$ MeV (S = 1.1)
$|m_{D_1^0} - m_{D_2^0}| < 21 \times 10^{10}\ \hbar\ \mathrm{s}^{-1}$, CL = 90% [uu]
$m_{D^\pm} - m_{D^0} = 4.78 \pm 0.10$ MeV
Mean life $\tau = (0.415 \pm 0.004) \times 10^{-12}$ s
$c\tau = 124.4\ \mu$m
$|\Gamma_{D_1^0} - \Gamma_{D_2^0}|/\Gamma_{D^0} < 0.17$, CL = 90% [uu]
$\frac{\Gamma(K^+\pi^- \text{ or } K^+\pi^-\pi^+\pi^- (\text{via } \overline{D}^0))}{\Gamma(K^-\pi^+ \text{ or } K^-\pi^+\pi^+\pi^-)} < 0.0037$, CL = 90%
$\Gamma(\mu^- X \text{ (via } \overline{D}^0))/\Gamma(\mu^+ X) < 0.0056$, CL = 90%

CP-violation decay-rate asymmetries

$A_{CP}(K^+K^-) = 0.06 \pm 0.05$
$A_{CP}(K_S^0\phi) = -0.03 \pm 0.09$
$A_{CP}(K_S^0\pi^0) = -0.018 \pm 0.030$

$\overline{D}^0$ modes are charge conjugates of the modes below.

D^0 DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Inclusive modes				
e^+ anything		(7.7 ±1.2) %	S=1.1	–
μ^+ anything	[vv]	(6.8 ±1.0) %		–
K^- anything		(53 ±4) %	S=1.3	–
$\overline{K}^0$ anything + K^0 anything		(42 ±5) %		–
K^+ anything		(3.4 $^{+0.6}_{-0.4}$) %		–
η anything	[oo]	< 13 %	CL=90%	–
Semileptonic modes				
$K^-\ell^+\nu_\ell$	[pp]	(3.48±0.16) %	S=1.1	867
$K^- e^+ \nu_e$		(3.64±0.20) %	S=1.1	867
$K^-\mu^+\nu_\mu$		(3.23±0.19) %		863
$K^-\pi^0 e^+\nu_e$		(1.6 $^{+1.3}_{-0.5}$) %		861
$\overline{K}^0\pi^- e^+\nu_e$		(2.8 $^{+1.7}_{-0.9}$) %		860
$\overline{K}^*(892)^- e^+\nu_e$ × B($K^{*-} \to \overline{K}^0\pi^-$)		(1.34±0.22) %		719
$K^-\pi^+\pi^-\mu^+\nu_\mu$		< 1.2 $\times 10^{-3}$	CL=90%	821
$(\overline{K}^*(892)\pi)^-\mu^+\nu_\mu$		< 1.4 $\times 10^{-3}$	CL=90%	693
$\pi^- e^+\nu_e$		(3.8 $^{+1.2}_{-1.0}$) $\times 10^{-3}$		927

A fraction of the following resonance mode has already appeared above as a submode of a charged-particle mode.

$K^*(892)^- e^+ \nu_e$		(2.01±0.33) %		719

Hadronic modes with a $\overline{K}$ or $\overline{K}K\overline{K}$

$K^- \pi^+$		(3.83±0.12) %		861
$\overline{K}^0 \pi^0$		(2.11±0.21) %	S=1.1	860
$\overline{K}^0 \pi^+ \pi^-$	[rr]	(5.4 ±0.4) %	S=1.2	842
$\overline{K}^0 \rho^0$		(1.20±0.17) %		676
$\overline{K}^0 f_0(980)$		(3.0 ±0.8) × 10^{-3}		549
× B($f_0 \rightarrow \pi^+ \pi^-$)				
$\overline{K}^0 f_2(1270)$		(2.3 ±0.9) × 10^{-3}		263
× B($f_2 \rightarrow \pi^+ \pi^-$)				
$\overline{K}^0 f_0(1370)$		(4.3 ±1.3) × 10^{-3}		–
× B($f_0 \rightarrow \pi^+ \pi^-$)				
$K^*(892)^- \pi^+$		(3.3 ±0.3) %		711
× B($K^{*-} \rightarrow \overline{K}^0 \pi^-$)				
$K_0^*(1430)^- \pi^+$		(6.4 ±1.6) × 10^{-3}		364
× B($K_0^*(1430)^- \rightarrow \overline{K}^0 \pi^-$)				
$\overline{K}^0 \pi^+ \pi^-$ nonresonant		(1.46±0.24) %		842
$K^- \pi^+ \pi^0$	[rr]	(13.9 ±0.9) %	S=1.3	844
$K^- \rho^+$		(10.8 ±1.0) %		678
$K^*(892)^- \pi^+$		(1.7 ±0.2) %		711
× B($K^{*-} \rightarrow K^- \pi^0$)				
$\overline{K}^*(892)^0 \pi^0$		(2.1 ±0.3) %		709
× B($\overline{K}^{*0} \rightarrow K^- \pi^+$)				
$K^- \pi^+ \pi^0$ nonresonant		(6.9 ±2.5) × 10^{-3}		844
$\overline{K}^0 \pi^0 \pi^0$				843
$\overline{K}^*(892)^0 \pi^0$		(1.0 ±0.2) %		709
× B($\overline{K}^{*0} \rightarrow \overline{K}^0 \pi^0$)				
$\overline{K}^0 \pi^0 \pi^0$ nonresonant		(7.8 ±2.0) × 10^{-3}		843
$K^- \pi^+ \pi^+ \pi^-$	[rr]	(7.5 ±0.4) %	S=1.1	812
$K^- \pi^+ \rho^0$ total		(6.3 ±0.4) %		612
$K^- \pi^+ \rho^0$ 3-body		(4.7 ±2.1) × 10^{-3}		612
$\overline{K}^*(892)^0 \rho^0$		(9.8 ±2.2) × 10^{-3}		418
× B($\overline{K}^{*0} \rightarrow K^- \pi^+$)				
$K^- a_1(1260)^+$		(3.6 ±0.6) %		327
× B($a_1(1260)^+ \rightarrow \pi^+ \pi^+ \pi^-$)				
$\overline{K}^*(892)^0 \pi^+ \pi^-$ total		(1.5 ±0.4) %		683
× B($\overline{K}^{*0} \rightarrow K^- \pi^+$)				
$\overline{K}^*(892)^0 \pi^+ \pi^-$ 3-body		(9.5 ±2.1) × 10^{-3}		683
× B($\overline{K}^{*0} \rightarrow K^- \pi^+$)				
$K_1(1270)^- \pi^+$	[ss]	(3.6 ±1.0) × 10^{-3}		483
× B($K_1(1270)^- \rightarrow K^- \pi^+ \pi^-$)				

$K^-\pi^+\pi^+\pi^-$ nonresonant		(1.75±0.25) %		812
$\overline{K}^0\pi^+\pi^-\pi^0$	[rr]	(10.0 ±1.2) %		812
$\overline{K}^0\eta \times$ B($\eta \to \pi^+\pi^-\pi^0$)		(1.6 ±0.3) $\times 10^{-3}$		772
$\overline{K}^0\omega \times$ B($\omega \to \pi^+\pi^-\pi^0$)		(1.9 ±0.4) %		670
$K^*(892)^-\rho^+$		(4.0 ±1.6) %		422
$\times$ B($K^{*-} \to \overline{K}^0\pi^-$)				
$\overline{K}^*(892)^0\rho^0$		(4.9 ±1.1) $\times 10^{-3}$		418
$\times$ B($\overline{K}^{*0} \to \overline{K}^0\pi^0$)				
$K_1(1270)^-\pi^+$	[ss]	(5.1 ±1.4) $\times 10^{-3}$		483
$\times$ B($K_1(1270)^- \to \overline{K}^0\pi^-\pi^0$)				
$\overline{K}^*(892)^0\pi^+\pi^-$ 3-body		(4.7 ±1.1) $\times 10^{-3}$		683
$\times$ B($\overline{K}^{*0} \to \overline{K}^0\pi^0$)				
$\overline{K}^0\pi^+\pi^-\pi^0$ nonresonant		(2.1 ±2.1) %		812
$K^-\pi^+\pi^0\pi^0$		(15 ±5) %		815
$K^-\pi^+\pi^+\pi^-\pi^0$		(4.0 ±0.4) %		771
$\overline{K}^*(892)^0\pi^+\pi^-\pi^0$		(1.2 ±0.6) %		641
$\times$ B($\overline{K}^{*0} \to K^-\pi^+$)				
$\overline{K}^*(892)^0\eta$		(3.0 ±0.8) $\times 10^{-3}$		580
$\times$ B($\overline{K}^{*0} \to K^-\pi^+$)				
$\times$ B($\eta \to \pi^+\pi^-\pi^0$)				
$K^-\pi^+\omega \times$ B($\omega \to \pi^+\pi^-\pi^0$)		(2.7 ±0.5) %		605
$\overline{K}^*(892)^0\omega$		(7 ±3) $\times 10^{-3}$		406
$\times$ B($\overline{K}^{*0} \to K^-\pi^+$)				
$\times$ B($\omega \to \pi^+\pi^-\pi^0$)				
$\overline{K}^0\pi^+\pi^+\pi^-\pi^-$		(5.8 ±1.6) $\times 10^{-3}$		768
$\overline{K}^0\pi^+\pi^-\pi^0\pi^0(\pi^0)$		(10.6 $^{+7.3}_{-3.0}$) %		771
$\overline{K}^0K^+K^-$		(9.3 ±1.0) $\times 10^{-3}$		544
$\overline{K}^0\phi \times$ B($\phi \to K^+K^-$)		(4.2 ±0.5) $\times 10^{-3}$		520
$\overline{K}^0K^+K^-$ non-ϕ		(5.0 ±0.8) $\times 10^{-3}$		544
$K^0_SK^0_SK^0_S$		(9.7 ±2.3) $\times 10^{-4}$		538
$K^+K^-K^-\pi^+$		(2.1 ±0.5) $\times 10^{-4}$		434
$K^+K^-\overline{K}^0\pi^0$		(7.2 $^{+4.8}_{-3.5}$) $\times 10^{-3}$		435

Fractions of many of the following modes with resonances have already appeared above as submodes of particular charged-particle modes. (Modes for which there are only upper limits and $\overline{K}^*(892)\rho$ submodes only appear below.)

$\overline{K}^0\eta$	(7.0 ±1.0) $\times 10^{-3}$		772
$\overline{K}^0\rho^0$	(1.20±0.17) %		676
$K^-\rho^+$	(10.8 ±1.0) %	S=1.2	678
$\overline{K}^0\omega$	(2.1 ±0.4) %		670
$\overline{K}^0\eta'(958)$	(1.70±0.26) %		565
$\overline{K}^0f_0(980)$	(5.7 ±1.6) $\times 10^{-3}$		549

$\overline{K}^0\,\phi$		(8.5 ±1.0) $\times 10^{-3}$		520
$K^-\,a_1(1260)^+$		(7.3 ±1.1) %		327
$\overline{K}^0\,a_1(1260)^0$		< 1.9 %	CL=90%	322
$\overline{K}^0\,f_2(1270)$		(4.1 ±1.5) $\times 10^{-3}$		263
$\overline{K}^0\,f_0(1370)$		(6.9 ±2.1) $\times 10^{-3}$		–
$K^-\,a_2(1320)^+$		< 2 $\times 10^{-3}$	CL=90%	197
$K^*(892)^-\,\pi^+$		(5.0 ±0.4) %	S=1.2	711
$\overline{K}^*(892)^0\,\pi^0$		(3.1 ±0.4) %		709
$\overline{K}^*(892)^0\,\pi^+\,\pi^-$ total		(2.3 ±0.5) %		683
$\overline{K}^*(892)^0\,\pi^+\,\pi^-$ 3-body		(1.42±0.32) %		683
$K^-\,\pi^+\,\rho^0$ total		(6.3 ±0.4) %		612
$K^-\,\pi^+\,\rho^0$ 3-body		(4.7 ±2.1) $\times 10^{-3}$		612
$\overline{K}^*(892)^0\,\rho^0$		(1.47±0.33) %		418
$\overline{K}^*(892)^0\,\rho^0$ transverse		(1.5 ±0.5) %		418
$\overline{K}^*(892)^0\,\rho^0$ *S*-wave		(2.8 ±0.6) %		418
$\overline{K}^*(892)^0\,\rho^0$ *S*-wave long.		< 3 $\times 10^{-3}$	CL=90%	418
$\overline{K}^*(892)^0\,\rho^0$ *P*-wave		< 3 $\times 10^{-3}$	CL=90%	418
$\overline{K}^*(892)^0\,\rho^0$ *D*-wave		(1.9 ±0.6) %		418
$K^*(892)^-\,\rho^+$		(6.0 ±2.4) %		422
$K^*(892)^-\,\rho^+$ longitudinal		(2.9 ±1.2) %		422
$K^*(892)^-\,\rho^+$ transverse		(3.2 ±1.8) %		422
$K^*(892)^-\,\rho^+$ *P*-wave		< 1.5 %	CL=90%	422
$K^-\,\pi^+\,f_0(980)$		< 1.1 %	CL=90%	459
$\overline{K}^*(892)^0\,f_0(980)$		< 7 $\times 10^{-3}$	CL=90%	–
$K_1(1270)^-\,\pi^+$	[ss]	(1.06±0.29) %		483
$K_1(1400)^-\,\pi^+$		< 1.2 %	CL=90%	386
$\overline{K}_1(1400)^0\,\pi^0$		< 3.7 %	CL=90%	387
$K^*(1410)^-\,\pi^+$		< 1.2 %	CL=90%	378
$K_0^*(1430)^-\,\pi^+$		(1.04±0.26) %		364
$K_2^*(1430)^-\,\pi^+$		< 8 $\times 10^{-3}$	CL=90%	367
$\overline{K}_2^*(1430)^0\,\pi^0$		< 4 $\times 10^{-3}$	CL=90%	363
$\overline{K}^*(892)^0\,\pi^+\,\pi^-\,\pi^0$		(1.8 ±0.9) %		641
$\overline{K}^*(892)^0\,\eta$		(1.9 ±0.5) %		580
$K^-\,\pi^+\,\omega$		(3.0 ±0.6) %		605
$\overline{K}^*(892)^0\,\omega$		(1.1 ±0.4) %		406
$K^-\,\pi^+\,\eta'(958)$		(7.0 ±1.8) $\times 10^{-3}$		479
$\overline{K}^*(892)^0\,\eta'(958)$		< 1.1 $\times 10^{-3}$	CL=90%	99

Pionic modes

$\pi^+\,\pi^-$		(1.52±0.11) $\times 10^{-3}$		922
$\pi^0\,\pi^0$		(8.4 ±2.2) $\times 10^{-4}$		922
$\pi^+\,\pi^-\,\pi^0$		(1.6 ±1.1) %	S=2.7	907
$\pi^+\,\pi^+\,\pi^-\,\pi^-$		(7.4 ±0.6) $\times 10^{-3}$		879
$\pi^+\,\pi^+\,\pi^-\,\pi^-\,\pi^0$		(1.9 ±0.4) %		844
$\pi^+\,\pi^+\,\pi^+\,\pi^-\,\pi^-\,\pi^-$		(4.0 ±3.0) $\times 10^{-4}$		795

Hadronic modes with a $K\overline{K}$ pair

K^+K^-		$(\ 4.33\pm0.27)\times10^{-3}$		791
$K^0\overline{K}^0$		$(\ 1.3\ \pm0.4\ )\times10^{-3}$		788
$K^0K^-\pi^+$		$(\ 6.4\ \pm1.0\ )\times10^{-3}$	S=1.1	739
$\overline{K}^*(892)^0K^0$		$<\ 1.1\ \times10^{-3}$	CL=90%	605
$\times$ B($\overline{K}^{*0}\to\ K^-\pi^+$)				
$K^*(892)^+K^-$		$(\ 2.3\ \pm0.5\ )\times10^{-3}$		610
$\times$ B($K^{*+}\to\ K^0\pi^+$)				
$K^0K^-\pi^+$ nonresonant		$(\ 2.3\ \pm2.3\ )\times10^{-3}$		739
$\overline{K}^0K^+\pi^-$		$(\ 4.9\ \pm1.0\ )\times10^{-3}$		739
$K^*(892)^0\overline{K}^0$		$<\ 5\ \times10^{-4}$	CL=90%	605
$\times$ B($K^{*0}\to\ K^+\pi^-$)				
$K^*(892)^-K^+$		$(\ 1.2\ \pm0.7\ )\times10^{-3}$		610
$\times$ B($K^{*-}\to\ \overline{K}^0\pi^-$)				
$\overline{K}^0K^+\pi^-$ nonresonant		$(\ 3.8\ ^{+2.3}_{-1.9}\ )\times10^{-3}$		739
$K^+K^-\pi^+\pi^-$	[*ww*]	$(\ 2.58\pm0.28)\times10^{-3}$		676
$\phi\pi^+\pi^-\times$ B($\phi\to\ K^+K^-$)		$(\ 5.3\ \pm1.4\ )\times10^{-4}$		614
$\phi\rho^0\times$ B($\phi\to\ K^+K^-$)		$(\ 5.3\ \pm1.4\ )\times10^{-4}$		260
$K^+K^-\rho^0$ 3-body		$(\ 9.0\ \pm2.3\ )\times10^{-4}$		309
$K^*(892)^0K^-\pi^+$		$(\ 2.1\ \pm0.9\ )\times10^{-3}$		528
$\times$ B($K^{*0}\to\ K^+\pi^-$)				
$\overline{K}^*(892)^0K^+\pi^-$		$(\ 1.1\ \pm0.8\ )\times10^{-3}$		528
$\times$ B($\overline{K}^{*0}\to\ K^-\pi^+$)				
$K^*(892)^0\overline{K}^*(892)^0$		$(\ 6\ \ \pm2\ \ )\times10^{-4}$		257
$\times$ B^2($K^{*0}\to\ K^+\pi^-$)				
$K^+K^-\pi^+\pi^-$ non-ϕ		$(\ 1.7\ \pm0.5\ )\times10^{-3}$		676
$K^+K^-\pi^+\pi^-$ nonresonant		$<\ 8\ \times10^{-4}$	CL=90%	676
$K^0\overline{K}^0\pi^+\pi^-$		$(\ 6.8\ \pm2.7\ )\times10^{-3}$		673
$K^+K^-\pi^+\pi^-\pi^0$		$(\ 3.1\ \pm2.0\ )\times10^{-3}$		600

Fractions of most of the following modes with resonances have already appeared above as submodes of particular charged-particle modes.

$\overline{K}^*(892)^0K^0$	$<\ 1.6\ \times10^{-3}$	CL=90%	605
$K^*(892)^+K^-$	$(\ 3.5\ \pm0.8\ )\times10^{-3}$		610
$K^*(892)^0\overline{K}^0$	$<\ 8\ \times10^{-4}$	CL=90%	605
$K^*(892)^-K^+$	$(\ 1.8\ \pm1.0\ )\times10^{-3}$		610
$\phi\pi^0$	$<\ 1.4\ \times10^{-3}$	CL=90%	644
$\phi\eta$	$<\ 2.8\ \times10^{-3}$	CL=90%	489

$\phi\omega$		$<$ 2.1	$\times 10^{-3}$	CL=90%	239
$\phi\pi^+\pi^-$		(1.07±0.29)	$\times 10^{-3}$		614
$\phi\rho^0$		(1.07±0.29)	$\times 10^{-3}$		260
$\phi\pi^+\pi^-$ 3-body		$<$ 5	$\times 10^{-4}$	CL=90%	614
$K^*(892)^0 K^-\pi^+$		(3.2 ±1.3)	$\times 10^{-3}$		528
$\overline{K}^*(892)^0 K^+\pi^-$		(1.7 ±1.2)	$\times 10^{-3}$		528
$K^*(892)^0 \overline{K}^*(892)^0$		(1.4 ±0.5)	$\times 10^{-3}$		257

Doubly Cabibbo suppressed (*DC*) modes, $\Delta C = 2$ forbidden via mixing (*C2M*) modes, $\Delta C = 1$ weak neutral current (*C1*) modes, or Lepton Family number (*LF*) violating modes

$K^+\pi^-$	*DC*		(2.9 ±1.4)	$\times 10^{-4}$		861
$K^+\pi^-$ (via $\overline{D}^0$)	*C2M*	$<$ 1.9		$\times 10^{-4}$	CL=90%	861
$K^+\pi^-\pi^+\pi^-$	*DC*	$<$ 1.4		$\times 10^{-3}$	CL=90%	812
$K^+\pi^-\pi^+\pi^-$ (via $\overline{D}^0$)	*C2M*	$<$ 4		$\times 10^{-4}$	CL=90%	812
μ^- anything (via $\overline{D}^0$)	*C2M*	$<$ 4		$\times 10^{-4}$	CL=90%	–
e^+e^-	*C1*	$<$ 1.3		$\times 10^{-5}$	CL=90%	932
$\mu^+\mu^-$	*C1*	$<$ 7.6		$\times 10^{-6}$	CL=90%	926
$\pi^0 e^+ e^-$	*C1*	$<$ 4.5		$\times 10^{-5}$	CL=90%	927
$\pi^0\mu^+\mu^-$	*C1*	$<$ 1.8		$\times 10^{-4}$	CL=90%	915
$\eta e^+ e^-$	*C1*	$<$ 1.1		$\times 10^{-4}$	CL=90%	852
$\eta\mu^+\mu^-$	*C1*	$<$ 5.3		$\times 10^{-4}$	CL=90%	838
$\rho^0 e^+ e^-$	*C1*	$<$ 1.0		$\times 10^{-4}$	CL=90%	773
$\rho^0\mu^+\mu^-$	*C1*	$<$ 2.3		$\times 10^{-4}$	CL=90%	756
$\omega e^+ e^-$	*C1*	$<$ 1.8		$\times 10^{-4}$	CL=90%	768
$\omega\mu^+\mu^-$	*C1*	$<$ 8.3		$\times 10^{-4}$	CL=90%	751
$\phi e^+ e^-$	*C1*	$<$ 5.2		$\times 10^{-5}$	CL=90%	654
$\phi\mu^+\mu^-$	*C1*	$<$ 4.1		$\times 10^{-4}$	CL=90%	631
$\overline{K}^0 e^+ e^-$		[*tt*] $<$ 1.1		$\times 10^{-4}$	CL=90%	866
$\overline{K}^0\mu^+\mu^-$		[*tt*] $<$ 2.6		$\times 10^{-4}$	CL=90%	852
$\overline{K}^*(892)^0 e^+ e^-$		[*tt*] $<$ 1.4		$\times 10^{-4}$	CL=90%	717
$\overline{K}^*(892)^0\mu^+\mu^-$		[*tt*] $<$ 1.18		$\times 10^{-3}$	CL=90%	698
$\pi^+\pi^-\pi^0\mu^+\mu^-$	*C1*	$<$ 8.1		$\times 10^{-4}$	CL=90%	863
$\mu^\pm e^\mp$	*LF*	[*gg*] $<$ 1.9		$\times 10^{-5}$	CL=90%	929
$\pi^0 e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 8.6		$\times 10^{-5}$	CL=90%	924
$\eta e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 1.0		$\times 10^{-4}$	CL=90%	848
$\rho^0 e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 4.9		$\times 10^{-5}$	CL=90%	769
$\omega e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 1.2		$\times 10^{-4}$	CL=90%	764
$\phi e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 3.4		$\times 10^{-5}$	CL=90%	648
$\overline{K}^0 e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 1.0		$\times 10^{-4}$	CL=90%	862
$\overline{K}^*(892)^0 e^\pm\mu^\mp$	*LF*	[*gg*] $<$ 1.0		$\times 10^{-4}$	CL=90%	712

$D^*(2007)^0$

$I(J^P) = \frac{1}{2}(1^-)$
I, *J*, *P* need confirmation.

Mass $m = 2006.7 \pm 0.5$ MeV (S = 1.1)
$m_{D^{*0}} - m_{D^0} = 142.12 \pm 0.07$ MeV
Full width $\Gamma < 2.1$ MeV, CL = 90%

$\overline{D}^*(2007)^0$ modes are charge conjugates of modes below.

$D^*(2007)^0$ DECAY MODES	Fraction (Γ_i/Γ)	*p* (MeV/*c*)
$D^0\pi^0$	(61.9±2.9) %	43
$D^0\gamma$	(38.1±2.9) %	137

$D^*(2010)^\pm$

$I(J^P) = \frac{1}{2}(1^-)$
I, *J*, *P* need confirmation.

Mass $m = 2010.0 \pm 0.5$ MeV (S = 1.1)
$m_{D^*(2010)^+} - m_{D^+} = 140.64 \pm 0.09$ MeV
$m_{D^*(2010)^+} - m_{D^0} = 145.42 \pm 0.05$ MeV
Full width $\Gamma < 0.131$ MeV, CL = 90%

$D^*(2010)^-$ modes are charge conjugates of the modes below.

$D^*(2010)^\pm$ DECAY MODES	Fraction (Γ_i/Γ)	*p* (MeV/*c*)
$D^0\pi^+$	(68.3±1.4) %	39
$D^+\pi^0$	(30.6±2.5) %	38
$D^+\gamma$	($1.1^{+2.1}_{-0.7}$) %	136

$D_1(2420)^0$

$I(J^P) = \frac{1}{2}(1^+)$
I, *J*, *P* need confirmation.

Mass $m = 2422.2 \pm 1.8$ MeV (S = 1.2)
Full width $\Gamma = 18.9^{+4.6}_{-3.5}$ MeV

$\overline{D}_1(2420)^0$ modes are charge conjugates of modes below.

$D_1(2420)^0$ DECAY MODES	Fraction (Γ_i/Γ)	*p* (MeV/*c*)
$D^*(2010)^+\pi^-$	seen	355
$D^+\pi^-$	not seen	474

$D_2^*(2460)^0$ $I(J^P) = \frac{1}{2}(2^+)$

$J^P = 2^+$ assignment strongly favored (ALBRECHT 89B).

Mass $m = 2458.9 \pm 2.0$ MeV (S = 1.2)

Full width $\Gamma = 23 \pm 5$ MeV

$\overline{D}_2^*(2460)^0$ modes are charge conjugates of modes below.

$D_2^*(2460)^0$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$D^+\pi^-$	seen	503
$D^*(2010)^+\pi^-$	seen	387

$D_2^*(2460)^\pm$ $I(J^P) = \frac{1}{2}(2^+)$

$J^P = 2^+$ assignment strongly favored (ALBRECHT 89B).

Mass $m = 2459 \pm 4$ MeV (S = 1.7)

$m_{D_2^*(2460)^\pm} - m_{D_2^*(2460)^0} = 0.9 \pm 3.3$ MeV (S = 1.1)

Full width $\Gamma = 25^{+8}_{-7}$ MeV

$D_2^*(2460)^-$ modes are charge conjugates of modes below.

$D_2^*(2460)^\pm$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$D^0\pi^+$	seen	508
$D^{*0}\pi^+$	seen	390