STRANGE MESONS ($S = \pm1$, $C = B = 0$)

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

$K^\pm$

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

Mass $m = 493.677 \pm 0.016$ MeV [u] (S = 2.8)
Mean life $\tau = (1.2384 \pm 0.0024) \times 10^{-8}$ s (S = 2.0)
$c\tau = 3.713$ m

Slope parameter g [v]

(See Particle Listings for quadratic coefficients)

$K^+ \rightarrow \pi^+\pi^+\pi^- = -0.2154 \pm 0.0035$ (S = 1.4)
$K^- \rightarrow \pi^-\pi^-\pi^+ = -0.217 \pm 0.007$ (S = 2.5)
$K^\pm \rightarrow \pi^\pm\pi^0\pi^0 = 0.652 \pm 0.031$ (S = 2.7)

$K^\pm$ decay form factors [a,w]

Assuming μ-e universality

$\lambda_+(K^+_{\mu3}) = \lambda_+(K^+_{e3}) = 0.0282 \pm 0.0027$ (S = 1.5)
$\lambda_0(K^+_{\mu3}) = 0.013 \pm 0.005$ (S = 1.5)

Not assuming μ-e universality

$\lambda_+(K^+_{e3}) = 0.0278 \pm 0.0019$
$\lambda_+(K^+_{\mu3}) = 0.033 \pm 0.010$ (S = 1.8)
$\lambda_0(K^+_{\mu3}) = 0.004 \pm 0.009$ (S = 1.8)

K^+_{e3} $|f_S/f_+| = 0.045 \pm 0.033$ (S = 1.8)
K^+_{e3} $|f_T/f_+| = 0.31 \pm 0.25$ (S = 2.4)
$K^+_{\mu3}$ $|f_T/f_+| = 0.02 \pm 0.12$
$K^+ \rightarrow e^+\nu_e\gamma$ $|F_A + F_V| = 0.148 \pm 0.010$
$K^+ \rightarrow \mu^+\nu_\mu\gamma$ $|F_A + F_V| = 0.165 \pm 0.013$
$K^+ \rightarrow e^+\nu_e\gamma$ $|F_A - F_V| < 0.49$
$K^+ \rightarrow \mu^+\nu_\mu\gamma$ $|F_A - F_V|$

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

K^+ DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Leptonic and semileptonic modes				
$e^+ \nu_e$		$(1.55 \pm 0.07) \times 10^{-5}$		247
$\mu^+ \nu_\mu$		(63.43 ± 0.17) %	S=1.2	236
$\pi^0 e^+ \nu_e$		(4.87 ± 0.06) %	S=1.2	228
Called K^+_{e3}.				
$\pi^0 \mu^+ \nu_\mu$		(3.27 ± 0.06) %	S=1.2	215
Called $K^+_{\mu 3}$.				
$\pi^0 \pi^0 e^+ \nu_e$		$(2.1 \pm 0.4) \times 10^{-5}$		206
$\pi^+ \pi^- e^+ \nu_e$		$(4.08 \pm 0.09) \times 10^{-5}$		203
$\pi^+ \pi^- \mu^+ \nu_\mu$		$(1.4 \pm 0.9) \times 10^{-5}$		151
$\pi^0 \pi^0 \pi^0 e^+ \nu_e$		$< 3.5 \times 10^{-6}$	CL=90%	135
Hadronic modes				
$\pi^+ \pi^0$		(21.13 ± 0.14) %	S=1.1	205
$\pi^+ \pi^0 \pi^0$		(1.73 ± 0.04) %	S=1.2	133
$\pi^+ \pi^+ \pi^-$		(5.576 ± 0.031) %	S=1.1	125
Leptonic and semileptonic modes with photons				
$\mu^+ \nu_\mu \gamma$	[x,y]	$(5.50 \pm 0.28) \times 10^{-3}$		236
$\pi^0 e^+ \nu_e \gamma$	[x,y]	$(2.65 \pm 0.20) \times 10^{-4}$		228
$\pi^0 e^+ \nu_e \gamma$(SD)	[z]	$< 5.3 \times 10^{-5}$	CL=90%	228
$\pi^0 \mu^+ \nu_\mu \gamma$	[x,y]	$< 6.1 \times 10^{-5}$	CL=90%	215
$\pi^0 \pi^0 e^+ \nu_e \gamma$		$< 5 \times 10^{-6}$	CL=90%	206
Hadronic modes with photons				
$\pi^+ \pi^0 \gamma$	[x,y]	$(2.75 \pm 0.15) \times 10^{-4}$		205
$\pi^+ \pi^0 \gamma$(DE)	[y,aa]	$(4.7 \pm 0.9) \times 10^{-6}$		205
$\pi^+ \pi^0 \pi^0 \gamma$	[x,y]	$(7.4 {}^{+5.5}_{-2.9}) \times 10^{-6}$		133
$\pi^+ \pi^+ \pi^- \gamma$	[x,y]	$(1.04 \pm 0.31) \times 10^{-4}$		125
$\pi^+ \gamma \gamma$	[y]	$(1.10 \pm 0.32) \times 10^{-6}$		227
$\pi^+ 3\gamma$	[y]	$< 1.0 \times 10^{-4}$	CL=90%	227
Leptonic modes with $\ell\overline{\ell}$ pairs				
$e^+ \nu_e \nu \overline{\nu}$		$< 6 \times 10^{-5}$	CL=90%	247
$\mu^+ \nu_\mu \nu \overline{\nu}$		$< 6.0 \times 10^{-6}$	CL=90%	236
$e^+ \nu_e e^+ e^-$		$(3.1 {}^{+3.1}_{-1.6}) \times 10^{-8}$		247
$\mu^+ \nu_\mu e^+ e^-$		$(1.3 \pm 0.4) \times 10^{-7}$		236
$e^+ \nu_e \mu^+ \mu^-$		$< 5 \times 10^{-7}$	CL=90%	–
$\mu^+ \nu_\mu \mu^+ \mu^-$		$< 4.1 \times 10^{-7}$	CL=90%	185

Lepton Family number (*LF*), Lepton number (*L*), $\Delta S = \Delta Q$ (*SQ*) violating modes, or $\Delta S = 1$ weak neutral current (*S1*) modes

$\pi^+ \pi^+ e^- \overline{\nu}_e$	*SQ*		$< 1.2 \times 10^{-8}$	CL=90%	203
$\pi^+ \pi^+ \mu^- \overline{\nu}_\mu$	*SQ*		$< 3.0 \times 10^{-6}$	CL=95%	151
$\pi^+ e^+ e^-$	*S1*		$(2.88 \pm 0.13) \times 10^{-7}$		227
$\pi^+ \mu^+ \mu^-$	*S1*		$(7.6 \pm 2.1) \times 10^{-8}$	S=3.4	172
$\pi^+ \nu \overline{\nu}$	*S1*		$(1.6 ^{+1.8}_{-0.8}) \times 10^{-10}$		227
$\pi^+ \pi^0 \nu \overline{\nu}$	*S1*		$< 4.3 \times 10^{-5}$	CL=90%	–
$\mu^- \nu e^+ e^+$	*LF*		$< 2.0 \times 10^{-8}$	CL=90%	236
$\mu^+ \nu_e$	*LF*	[d]	$< 4 \times 10^{-3}$	CL=90%	236
$\pi^+ \mu^+ e^-$	*LF*		$< 2.8 \times 10^{-11}$	CL=90%	214
$\pi^+ \mu^- e^+$	*LF*		$< 5.2 \times 10^{-10}$	CL=90%	214
$\pi^- \mu^+ e^+$	*L*		$< 5.0 \times 10^{-10}$	CL=90%	214
$\pi^- e^+ e^+$	*L*		$< 6.4 \times 10^{-10}$	CL=90%	227
$\pi^- \mu^+ \mu^+$	*L*	[d]	$< 3.0 \times 10^{-9}$	CL=90%	172
$\mu^+ \overline{\nu}_e$	*L*	[d]	$< 3.3 \times 10^{-3}$	CL=90%	236
$\pi^0 e^+ \overline{\nu}_e$	*L*		$< 3 \times 10^{-3}$	CL=90%	228
$\pi^+ \gamma$		[bb]	$< 3.6 \times 10^{-7}$	CL=90%	–

K^0

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

50% K_S, 50% K_L

Mass $m = 497.672 \pm 0.031$ MeV

$m_{K^0} - m_{K^\pm} = 3.995 \pm 0.034$ MeV (S = 1.1)

$\left| m_{K^0} - m_{\overline{K}^0} \right| / m_{\text{average}} < 10^{-18}$, CL = 90% [cc]

T-violation parameters in K^0-$\overline{K}^0$ mixing [w]

Asymmetry A_T in K^0-$\overline{K}^0$ mixing $= (6.6 \pm 1.6) \times 10^{-3}$

CPT-violation parameters in K^0-$\overline{K}^0$ mixing [w]

Re $\delta = (2.9 \pm 2.7) \times 10^{-4}$

Im $\delta = (-0.8 \pm 3.1) \times 10^{-3}$

K^0_S

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

Mean life $\tau = (0.8935 \pm 0.0008) \times 10^{-10}$ s Assuming *CPT*
Mean life $\tau = (0.8937 \pm 0.0012) \times 10^{-10}$ s Not assuming *CPT*
$c\tau = 2.6786$ cm Assuming *CPT*

CP-violation parameters [dd]

$\mathrm{Im}(\eta_{+-0}) = -0.002 \pm 0.009$
$\mathrm{Im}(\eta_{000}) = -0.05 \pm 0.13$

K^0_S DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Hadronic modes				
$\pi^0\pi^0$		(31.40 ± 0.27) %	S=1.2	209
$\pi^+\pi^-$		(68.60 ± 0.27) %	S=1.2	206
$\pi^+\pi^-\pi^0$		$(3.2 {}^{+1.2}_{-1.0}) \times 10^{-7}$		133
Modes with photons or $\ell\overline{\ell}$ pairs				
$\pi^+\pi^-\gamma$	[x,ee]	$(1.78 \pm 0.05) \times 10^{-3}$		206
$\pi^+\pi^-e^+e^-$		$(4.5 \pm 0.8) \times 10^{-5}$		–
$\gamma\gamma$		$(2.5 \pm 0.4) \times 10^{-6}$		249
Semileptonic modes				
$\pi^\pm e^\mp \nu_e$	[ff]	$(7.2 \pm 1.4) \times 10^{-4}$		229
***CP* violating (*CP*) and $\Delta S = 1$ weak neutral current (*S1*) modes**				
$3\pi^0$	*CP*	$< 1.4 \times 10^{-5}$	CL=90%	139
$\mu^+\mu^-$	*S1*	$< 3.2 \times 10^{-7}$	CL=90%	225
e^+e^-	*S1*	$< 1.4 \times 10^{-7}$	CL=90%	249
$\pi^0 e^+e^-$	*S1*	$< 1.4 \times 10^{-7}$	CL=90%	231

K^0_L

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

$m_{K_L} - m_{K_S}$
$= (0.5303 \pm 0.0009) \times 10^{10}\ \hbar\ \mathrm{s}^{-1}$ Assuming *CPT*
$= (3.490 \pm 0.006) \times 10^{-12}$ MeV Assuming *CPT*
$= (0.5301 \pm 0.0016) \times 10^{10}\ \hbar\ \mathrm{s}^{-1}$ Not assuming *CPT*
Mean life $\tau = (5.17 \pm 0.04) \times 10^{-8}$ s (S = 1.1)
$c\tau = 15.51$ m

Slope parameter g [v]

(See Particle Listings for quadratic coefficients)
$K^0_L \to \pi^+\pi^-\pi^0 = 0.678 \pm 0.008$ (S = 1.5)

K_L decay form factors [w]

Assuming μ-e universality

$\lambda_+(K^0_{\mu 3}) = \lambda_+(K^0_{e3}) = 0.0300 \pm 0.0020$ (S = 2.0)

$\lambda_0(K^0_{\mu 3}) = 0.030 \pm 0.005$ (S = 2.0)

Not assuming μ-e universality

$\lambda_+(K^0_{e3}) = 0.0291 \pm 0.0018$ (S = 1.5)

$\lambda_+(K^0_{\mu 3}) = 0.033 \pm 0.005$ (S = 2.3)

$\lambda_0(K^0_{\mu 3}) = 0.027 \pm 0.006$ (S = 2.3)

K^0_{e3} $\left|f_S/f_+\right| < 0.04$, CL = 68%

K^0_{e3} $\left|f_T/f_+\right| < 0.23$, CL = 68%

$K^0_{\mu 3}$ $\left|f_T/f_+\right| = 0.12 \pm 0.12$

$K_L \rightarrow e^+ e^- \gamma$: $\alpha_{K^*} = -0.33 \pm 0.05$

$\alpha_{K^*} = -0.158 \pm 0.027$

$\alpha^{\mathrm{eff}}_{K^*} = -0.14 \pm 0.22$

$a_V = -0.72 \pm 0.07$

CP-violation parameters [dd]

$\delta_L = (0.327 \pm 0.012)\%$

$\left|\eta_{00}\right| = (2.274 \pm 0.017) \times 10^{-3}$

$\left|\eta_{+-}\right| = (2.286 \pm 0.017) \times 10^{-3}$

$\left|\eta_{00}/\eta_{+-}\right| = 0.9946 \pm 0.0013$ [gg] (S = 2.3)

$\mathrm{Re}(\epsilon'/\epsilon) = (1.8 \pm 0.4) \times 10^{-3}$ [gg] (S = 2.3)

Assuming *CPT*

$\phi_{+-} = \phi_{00} = (43.51 \pm 0.06)^\circ$

Not assuming CPT

$\phi_{+-} = (43.4 \pm 0.7)^\circ$

$\phi_{00} = (43.2 \pm 1.0)^\circ$

$\phi_{00} - \phi_{+-} = (-0.1 \pm 0.8)^\circ$

CP asymmetry A in $K^0_L \to \pi^+\pi^- e^+ e^- = (13.6 \pm 2.8)\%$

β_{CP} from $K_L \to e^+ e^- e^+ e^- = -0.23 \pm 0.09$

γ_{CP} from $K^0_L \to e^+ e^- e^+ e^- = -0.09 \pm 0.09$

j for $K^0_L \to \pi^+\pi^-\pi^0 = 0.0011 \pm 0.0008$

f for $K^0_L \to \pi^+\pi^-\pi^0 = 0.004 \pm 0.006$

$|\eta_{+-\gamma}| = (2.35 \pm 0.07) \times 10^{-3}$

$\phi_{+-\gamma} = (44 \pm 4)^\circ$

$|\epsilon'_{+-\gamma}|/\epsilon < 0.3$, CL = 90%

$\Delta S = -\Delta Q$ in $K^0_{\ell 3}$ decay

Re $x = -0.002 \pm 0.006$

Im $x = 0.0012 \pm 0.0021$

K^0_L DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
Semileptonic modes				
$\pi^\pm e^\mp \nu_e$ Called K^0_{e3}.	[ff]	(38.79 ± 0.27) %	S=1.1	229
$\pi^\pm \mu^\mp \nu_\mu$ Called $K^0_{\mu 3}$.	[ff]	(27.18 ± 0.25) %	S=1.1	216
$(\pi\mu\text{atom})\nu$		$(1.06 \pm 0.11) \times 10^{-7}$		188
$\pi^0\pi^\pm e^\mp \nu$	[ff]	$(5.18 \pm 0.29) \times 10^{-5}$		207
Hadronic modes, including Charge conjugation×Parity Violating (*CPV*) modes				
$3\pi^0$		(21.08 ± 0.27) %	S=1.1	139
$\pi^+\pi^-\pi^0$		(12.58 ± 0.19) %	S=1.7	133
$\pi^+\pi^-$	*CPV*	$(2.084 \pm 0.032) \times 10^{-3}$	S=1.1	206
$\pi^0\pi^0$	*CPV*	$(9.42 \pm 0.19) \times 10^{-4}$	S=1.1	209
Semileptonic modes with photons				
$\pi^\pm e^\mp \nu_e \gamma$	[x,ff,hh]	$(3.53 \pm 0.06) \times 10^{-3}$		229
$\pi^\pm \mu^\mp \nu_\mu \gamma$		$(5.7\ ^{+0.6}_{-0.7}) \times 10^{-4}$		–

Hadronic modes with photons or $\ell\overline{\ell}$ pairs

$\pi^0\pi^0\gamma$		$<\ 5.6\ \times 10^{-6}$			209
$\pi^+\pi^-\gamma$	[x,hh]	$(\ 4.38\ \pm 0.13\ )\times 10^{-5}$	S=1.8		206
$\pi^0 2\gamma$	[hh]	$(\ 1.68\ \pm 0.10\ )\times 10^{-6}$			231
$\pi^0\gamma e^+e^-$		$(\ 2.3\ \pm 0.4\ )\times 10^{-8}$			–

Other modes with photons or $\ell\overline{\ell}$ pairs

2γ		$(\ 5.96\ \pm 0.15\ )\times 10^{-4}$			249
3γ		$<\ 2.4\ \times 10^{-7}$	CL=90%		249
$e^+e^-\gamma$		$(10.0\ \pm 0.5\ )\times 10^{-6}$	S=1.5		249
$\mu^+\mu^-\gamma$		$(\ 3.59\ \pm 0.11\ )\times 10^{-7}$	S=1.3		225
$e^+e^-\gamma\gamma$	[hh]	$(\ 5.95\ \pm 0.33\ )\times 10^{-7}$			249
$\mu^+\mu^-\gamma\gamma$	[hh]	$(\ 1.0\ {}^{+0.8}_{-0.6}\ )\times 10^{-8}$			–

Charge conjugation × Parity (*CP*) or Lepton Family number (*LF*) violating modes, or $\Delta S = 1$ weak neutral current (*S1*) modes

$\mu^+\mu^-$	*S1*		$(\ 7.25\ \pm 0.16\ )\times 10^{-9}$		225
e^+e^-	*S1*		$(\ 9\ {}^{+6}_{-4}\ )\times 10^{-12}$		249
$\pi^+\pi^-e^+e^-$	*S1*	[hh]	$(\ 3.5\ \pm 0.6\ )\times 10^{-7}$		206
$\mu^+\mu^-e^+e^-$	*S1*		$(\ 2.6\ \pm 0.4\ )\times 10^{-9}$		225
$e^+e^-e^+e^-$	*S1*		$(\ 3.75\ \pm 0.27\ )\times 10^{-8}$		249
$\pi^0\mu^+\mu^-$	*CP,S1*	[ii]	$<\ 3.8\ \times 10^{-10}$	CL=90%	177
$\pi^0 e^+e^-$	*CP,S1*	[ii]	$<\ 5.1\ \times 10^{-10}$	CL=90%	231
$\pi^0\nu\overline{\nu}$	*CP,S1*	[jj]	$<\ 5.9\ \times 10^{-7}$	CL=90%	231
$e^\pm\mu^\mp$	*LF*	[ff]	$<\ 4.7\ \times 10^{-12}$	CL=90%	238
$e^\pm e^\pm\mu^\mp\mu^\mp$	*LF*	[ff]	$<\ 1.23\ \times 10^{-10}$	CL=90%	–
$\pi^0\mu^\pm e^\mp$	*LF*	[ff]	$<\ 6.2\ \times 10^{-9}$	CL=90%	–

***K**(892)**

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

$K^*(892)^\pm$ mass $m = 891.66 \pm 0.26$ MeV
$K^*(892)^0$ mass $m = 896.10 \pm 0.27$ MeV (S = 1.4)
$K^*(892)^\pm$ full width $\Gamma = 50.8 \pm 0.9$ MeV
$K^*(892)^0$ full width $\Gamma = 50.7 \pm 0.6$ MeV (S = 1.1)

***K**(892) DECAY MODES**	Fraction (Γ_i/Γ)	Confidence level	*p* (MeV/*c*)
$K\pi$	~ 100 %		291
$K^0\gamma$	$(\ 2.30\pm 0.20)\times 10^{-3}$		310
$K^\pm\gamma$	$(\ 9.9\ \pm 0.9\ )\times 10^{-4}$		309
$K\pi\pi$	$<\ 7\ \times 10^{-4}$	95%	224

$K_1(1270)$

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

Mass $m = 1273 \pm 7$ MeV [m]
Full width $\Gamma = 90 \pm 20$ MeV [m]

K_1(1270) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K\rho$	(42 ± 6) %	76
$K_0^*(1430)\pi$	(28 ± 4) %	–
$K^*(892)\pi$	(16 ± 5) %	301
$K\omega$	(11.0 ± 2.0) %	–
$K f_0(1370)$	(3.0 ± 2.0) %	–

$K_1(1400)$

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

Mass $m = 1402 \pm 7$ MeV
Full width $\Gamma = 174 \pm 13$ MeV (S = 1.6)

K_1(1400) DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K^*(892)\pi$	(94 ± 6) %	401
$K\rho$	(3.0 ± 3.0) %	298
$K f_0(1370)$	(2.0 ± 2.0) %	–
$K\omega$	(1.0 ± 1.0) %	285
$K_0^*(1430)\pi$	not seen	–

$K^*(1410)$

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

Mass $m = 1414 \pm 15$ MeV (S = 1.3)
Full width $\Gamma = 232 \pm 21$ MeV (S = 1.1)

K^*(1410) DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$K^*(892)\pi$	> 40 %	95%	408
$K\pi$	(6.6 ± 1.3) %		611
$K\rho$	< 7 %	95%	309

$K_0^*(1430)$ [kk]

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

Mass $m = 1412 \pm 6$ MeV
Full width $\Gamma = 294 \pm 23$ MeV

$K_0^*(1430)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K\pi$	(93 ± 10) %	621

$K_2^*(1430)$

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

$K_2^*(1430)^\pm$ mass $m = 1425.6 \pm 1.5$ MeV (S = 1.1)
$K_2^*(1430)^0$ mass $m = 1432.4 \pm 1.3$ MeV
$K_2^*(1430)^\pm$ full width $\Gamma = 98.5 \pm 2.7$ MeV (S = 1.1)
$K_2^*(1430)^0$ full width $\Gamma = 109 \pm 5$ MeV (S = 1.9)

$K_2^*(1430)$ DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
$K\pi$	(49.9 ± 1.2) %		622
$K^*(892)\pi$	(24.7 ± 1.5) %		423
$K^*(892)\pi\pi$	(13.4 ± 2.2) %		375
$K\rho$	(8.7 ± 0.8) %	S=1.2	331
$K\omega$	(2.9 ± 0.8) %		319
$K^+\gamma$	$(2.4 \pm 0.5) \times 10^{-3}$	S=1.1	627
$K\eta$	$(1.5^{+3.4}_{-1.0}) \times 10^{-3}$	S=1.3	492
$K\omega\pi$	$< 7.2 \times 10^{-4}$	CL=95%	110
$K^0\gamma$	$< 9 \times 10^{-4}$	CL=90%	631

$K^*(1680)$

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

Mass $m = 1717 \pm 27$ MeV (S = 1.4)
Full width $\Gamma = 322 \pm 110$ MeV (S = 4.2)

$K^*(1680)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K\pi$	(38.7 ± 2.5) %	779
$K\rho$	$(31.4^{+4.7}_{-2.1})$ %	571
$K^*(892)\pi$	$(29.9^{+2.2}_{-4.7})$ %	615

$K_2(1770)$ [ll]

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

Mass $m = 1773 \pm 8$ MeV
Full width $\Gamma = 186 \pm 14$ MeV

$K_2(1770)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K\pi\pi$		–
$K_2^*(1430)\pi$	dominant	287
$K^*(892)\pi$	seen	653
$K f_2(1270)$	seen	–
$K\phi$	seen	441
$K\omega$	seen	608

$K_3^*(1780)$

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

Mass $m = 1776 \pm 7$ MeV (S = 1.1)
Full width $\Gamma = 159 \pm 21$ MeV (S = 1.3)

$K_3^*(1780)$ DECAY MODES	Fraction (Γ_i/Γ)	Confidence level	p (MeV/c)
$K\rho$	(31 ± 9) %		612
$K^*(892)\pi$	(20 ± 5) %		651
$K\pi$	(18.8± 1.0) %		810
$K\eta$	(30 ±13) %		715
$K_2^*(1430)\pi$	< 16 %	95%	284

$K_2(1820)$ [mm]

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

Mass $m = 1816 \pm 13$ MeV
Full width $\Gamma = 276 \pm 35$ MeV

$K_2(1820)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K_2^*(1430)\pi$	seen	325
$K^*(892)\pi$	seen	680
$K f_2(1270)$	seen	186
$K\omega$	seen	638

$K_4^*(2045)$

$I(J^P) = \frac{1}{2}(4^+)$

Mass $m = 2045 \pm 9$ MeV (S = 1.1)
Full width $\Gamma = 198 \pm 30$ MeV

$K_4^*(2045)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$K\pi$	(9.9 ± 1.2) %	958
$K^*(892)\pi\pi$	$(9\ \pm5\ )$ %	800
$K^*(892)\pi\pi\pi$	$(7\ \pm5\ )$ %	764
$\rho K\pi$	(5.7 ± 3.2) %	742
$\omega K\pi$	(5.0 ± 3.0) %	736
$\phi K\pi$	(2.8 ± 1.4) %	591
$\phi K^*(892)$	(1.4 ± 0.7) %	363