

[http://www.if.pw.edu.pl/~wosinska/372,20,hiperon\\_omega](http://www.if.pw.edu.pl/~wosinska/372,20,hiperon_omega)

$$\begin{array}{ccccc}
 & |K^0\rangle = |d\bar{s}\rangle & & |K^+\rangle = |u\bar{s}\rangle & \\
 |\pi^-\rangle = |\bar{u}d\rangle & & \pi^0, \eta_8 & & |\pi^+\rangle = |u\bar{d}\rangle \\
 & |K^-\rangle = |\bar{u}s\rangle & & |\bar{K}^0\rangle = |\bar{d}s\rangle & 
 \end{array}$$

czyli

$$|\pi^0\rangle = \frac{1}{\sqrt{2}}(u\bar{u} - d\bar{d}), \dots, |\eta_8\rangle = \frac{1}{\sqrt{6}}(u\bar{u} + d\bar{d} - 2s\bar{s})$$

liczby kwantowe zapachowe będą odpowiednio  $S, I_3$

$$\begin{array}{ccc}
 +1, -\frac{1}{2} & +1, +\frac{1}{2} & \\
 0, -1 & 0, 0 & 0, +1 \\
 -1, -\frac{1}{2} & -1, +\frac{1}{2} & 
 \end{array}$$

raz singlet zwany  $\eta_1$  o liczbach zapachu 0,0:

$$|\eta_1\rangle = \frac{1}{\sqrt{3}}(u\bar{u} + d\bar{d} + s\bar{s})$$

$$\pi^0 = \frac{1}{\sqrt{2}}(u\bar{u} - d\bar{d})$$

$$\eta^0 = \frac{1}{\sqrt{6}}(u\bar{u} + d\bar{d} - 2s\bar{s})$$

$$\eta'^0 = \frac{1}{\sqrt{3}}(u\bar{u} + d\bar{d} + s\bar{s})$$

# Mesons

Particle	Symbol	Anti-particle	Makeup	Rest mass MeV/c <sup>2</sup>	S	C	B	Lifetime	Decay Modes
<a href="#">Pion</a>	$\pi^+$	$\pi^-$	$\underline{u}\underline{d}$	139.6	0	0	0	$2.60 \times 10^{-8}$	$\mu^+ \nu_\mu$
<a href="#">Pion</a>	$\pi^0$	Self	$\frac{\bar{u}u + \bar{d}d}{\sqrt{2}}$	135.0	0	0	0	$0.83 \times 10^{-16}$	$2\gamma$
<a href="#">Kaon</a>	$K^+$	$K^-$	$\underline{u}\underline{s}$	493.7	+1	0	0	$1.24 \times 10^{-8}$	$\mu^+ \nu_\mu, \pi^+ \pi^0$
<a href="#">Kaon</a>	$K_S^0$	$K_S^0$	1*	497.7	+1	0	0	$0.89 \times 10^{-10}$	$\pi^+ \pi^-, 2\pi^0$
<a href="#">Kaon</a>	$K_L^0$	$K_L^0$	1*	497.7	+1	0	0	$5.2 \times 10^{-8}$	$\pi^+ e^- \bar{\nu}_e$
<a href="#">Eta</a>	$\eta^0$	Self	2*	548.8	0	0	0	$< 10^{-18}$	$2\gamma, 3\mu$
<a href="#">Eta prime</a>	$\eta'^0$	Self	2*	958	0	0	0	...	...
<a href="#">Rho</a>	$\rho^+$	$\rho^-$	$\underline{u}\underline{d}$	770	0	0	0	$0.4 \times 10^{-23}$	$\pi, \pi$
<a href="#">Rho</a>	$\rho^0$	Self	$\underline{u}\underline{u}, \underline{d}\underline{d}$	770	0	0	0	...	...
<a href="#">Omega</a>	$\omega^0$	Self	$\underline{u}\underline{u}, \underline{d}\underline{d}$	782	0	0	0	...	...
<a href="#">Phi</a>	$\phi$	Self	$\underline{s}\underline{s}$	1020	0	0	0	$20 \times 10^{-23}$	$K^+ K^-, K^0 \bar{K}^0$
<a href="#">D</a>	$D^+$	$D^-$	$\underline{c}\underline{d}$	1869.4	0	+1	0	$10.6 \times 10^{-13}$	$K^+ \pi^-, e^+ \pi^-$
<a href="#">D</a>	$D^0$	$\bar{D}^0$	$\underline{c}\underline{u}$	1864.6	0	+1	0	$4.2 \times 10^{-13}$	$[K, \mu, e]^+ \pi^-$
<a href="#">D</a>	$D_S^+$	$D_S^-$	$\underline{c}\underline{s}$	1969	+1	+1	0	$4.7 \times 10^{-13}$	$K^+ \pi^-$
<a href="#">J/Psi</a>	$J/\psi$	Self	$\underline{c}\underline{c}$	3096.9	0	0	0	$0.8 \times 10^{-20}$	$e^+ e^-, \mu^+ \mu^-, \dots$
<a href="#">B</a>	$B^-$	$B^+$	$\underline{b}\underline{u}$	5279	0	0	-1	$1.5 \times 10^{-12}$	$D^0 \pi^+$
<a href="#">B</a>	$B^0$	$\bar{B}^0$	$\underline{d}\underline{b}$	5279	0	0	-1	$1.5 \times 10^{-12}$	$D^0 \pi^+$
<a href="#">B<sub>s</sub></a>	$B_s^0$	$\bar{B}_s^0$	$\underline{s}\underline{b}$	5375	0	0	-1	...	...
<a href="#">Upsilon</a>	$Y$	Self	$\underline{b}\underline{b}$	9460.4	0	0	0	$1.3 \times 10^{-20}$	$e^+ e^-, \mu^+ \mu^-, \dots$

2\*  $\rightarrow (\bar{u}u + \bar{d}d - 2\bar{s}s) / \sqrt{6}$

Kaon	$K^+$	$K^-$	$\underline{u}\underline{s}$	493.7	+1	0	0	$1.24 \times 10^{-8}$	$\mu^+ \nu_\mu, \pi^+ \pi^0$
Kaon	$K_S^0$	$K_S^0$	1*	497.7	+1	0	0	$0.89 \times 10^{-10}$	$\pi^+ \pi^-, 2\pi^0$
Kaon	$K_L^0$	$K_L^0$	1*	497.7	+1	0	0	$5.2 \times 10^{-8}$	$\pi^+ e^- \bar{\nu}_e$

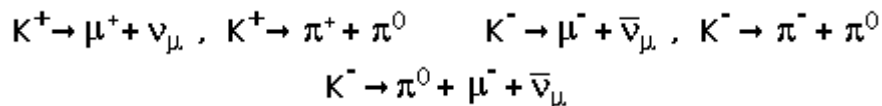
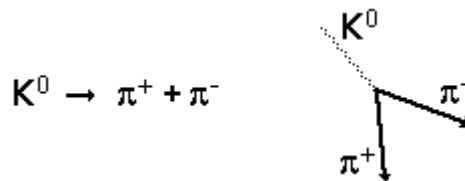
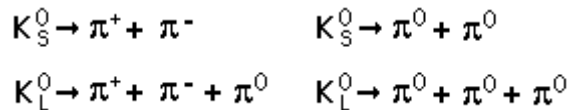
1\* The neutral [Kaons](#)  $K_S^0$  and  $K_L^0$  represent symmetric and antisymmetric mixtures

<http://hyperphysics.phy-astr.gsu.edu/hbase/particles/meson.html>

One is called K-zero-short  $K_S^0 = \frac{\Psi(d\bar{s}) + \Psi(\bar{d}s)}{\sqrt{2}}$  Lifetime  $9 \times 10^{-11}$  s

The other is called K-zero-long.  $K_L^0 = \frac{\Psi(d\bar{s}) - \Psi(\bar{d}s)}{\sqrt{2}}$  Lifetime  $5 \times 10^{-8}$  s

These two particles are considered to be combinations of down-antistrange and antidown-strange quarks. These particles decay into pions by



[http://home.nycap.rr.com/leptonjim/physics/1\\_model/after.html](http://home.nycap.rr.com/leptonjim/physics/1_model/after.html) model mezonů z kvarků

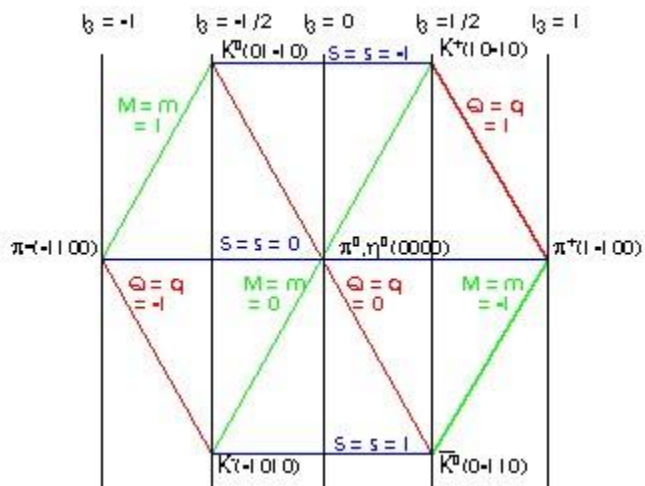
Commonly Stated Reaction	Proposed Reaction Statement	Balanced (qmsc) Description
$K^- \rightarrow \mu^- \nu_\mu$	$K^- \rightarrow \mu^- \nu_\mu (\nu_\mu \nu_e)$	$(-1010) \rightarrow (-1110) + (00-10) + (0010) + (0-100)$
$K^- \rightarrow \mu^- \pi^0 \nu_\mu$	$K^- \rightarrow \mu^- \pi^0 \nu_\mu (\nu_\mu \nu_e)$	$(-1010) \rightarrow (-1110) + (0000) + (00-10) + (0010) + (0-100)$
$K^- \rightarrow e^- \pi^0 \nu_e$	$K^- \rightarrow e^- \pi^0 \nu_e (\nu_\mu \nu_e)$	$(-1010) \rightarrow (-1000) + (0000) + (0100) + (0-100) + (0010)$
$K^- \rightarrow \pi^- \pi^0$	$K^- \rightarrow \pi^- \pi^0 (\nu_\mu \nu_e)$	$(-1010) \rightarrow (-1100) + (0000) + (0010) + (0-100)$
$K^- \rightarrow \pi^- \pi^+ \pi^-$	$K^- \rightarrow \pi^- \pi^+ \pi^- (\nu_\mu \nu_e)$	$(-1010) \rightarrow (-1100) + (1-100) + (-1100) + (0010) + (0-100)$
$K^0 \rightarrow \pi^- \pi^+ \pi^0$	$K^0 \rightarrow \pi^- \pi^+ \pi^0 (\nu_\mu \nu_e)$	$(0-110) \rightarrow (1-100) + (-1100) + (0000) + (0010) + (0-100)$
$K^0 \rightarrow \pi^+ e^- \nu_e$	$K^0 \rightarrow \pi^+ e^- \nu_e (\nu_\mu \nu_e)$	$(0-110) \rightarrow (1-100) + (-1000) + (0100) + (0-100) + (0010)$
$K^0 \rightarrow \pi^- \pi^+$	$K^0 \rightarrow \pi^- \pi^+ (\nu_\mu \nu_e)$	$(0-110) \rightarrow (1-100) + (-1100) + (0010) + (0-100)$

Particle	Lepton Excess/Charge				Isospin $I_3$	Uph- ish- ness U	Down- ish- ness D	Anti- strange -ness S	Charm C
	$e^+$	$\nu_e$	$\nu_\mu$	$\nu_\tau$					
	q	m	s	c					
$\mu^-$	-1	1	1	0	-1	-3	-1	0	1
$\tau^-$	-1	1	0	1	-1	-2	0	-1	0
$\tau^+$	1	-1	0	-1	1	2	0	1	0
$\mu^+$	1	-1	-1	0	1	3	1	0	-1

Particle	Lepton Excess/Charge				Isospin $I_3$	Uph- ish- ness U	Down- ish- ness D	Anti- strange -ness S	Charm C
	$e^+$	$\nu_e$	$\nu_\mu$	$\nu_\tau$					
	q	m	s	c					
$e^+$	1	0	0	0	+1/2	-1	-2	-1	1
$\nu_e$	0	1	0	0	-1/2	-2	-1	-1	1
$\nu_\mu$	0	0	1	0	0	-2	-2	0	1
$\nu_\tau$	0	0	0	1	0	-1	-1	-1	0
$\nu_\tau$	0	0	0	-1	0	1	1	1	0
$\nu_\mu$	0	0	-1	0	0	2	2	0	-1
$\nu_e$	0	-1	0	0	+1/2	2	1	1	-1
$e^-$	-1	0	0	0	-1/2	1	2	1	-1

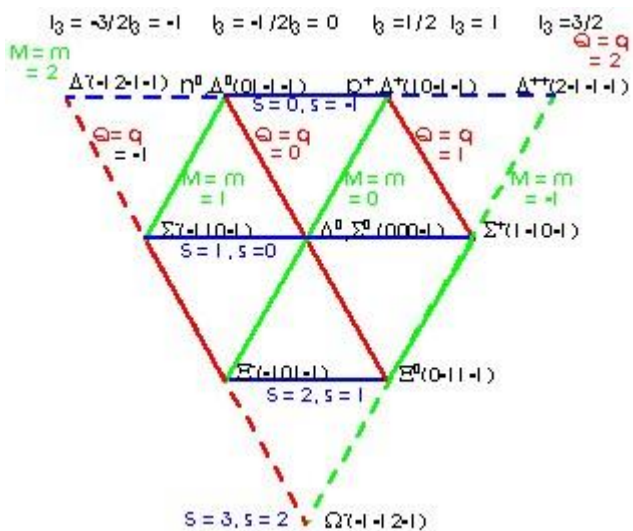
Particle	Lepton Excess/Charge				Isospin	Uph-	Down-	Anti-	Charm
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	$e^+$	$\nu_e$	$\nu_\mu$	$\nu_\tau$		ish-ness	ish-ness	strange-ness	
	q	m	s	c	$I_3$	U	D	S	C
$\pi^-$	-1	1	0	0	-1	-1	1	0	0
$K^-$	-1	0	1	0	-1/2	-1	0	1	0
$K^0$	0	-1	1	0	1/2	0	-1	1	0
$\pi^0$	0	0	0	0	0	0	0	0	0
$\eta^0$	0	0	0	0	0	0	0	0	0
$K^0$	0	1	-1	0	-1/2	0	1	-1	0
$K^+$	1	0	-1	0	1/2	1	0	-1	0
$\pi^+$	1	-1	0	0	1	1	-1	0	0



Particle	Lepton Excess/Charge				Isospin	Up-ish-ness	Down-ish-ness	Anti-strange-ness	Charm
	$e^+$	$\nu_e$	$\nu_\mu$	$\nu_\tau$					
	q	m	s	c	$I_3$	U	D	S	C

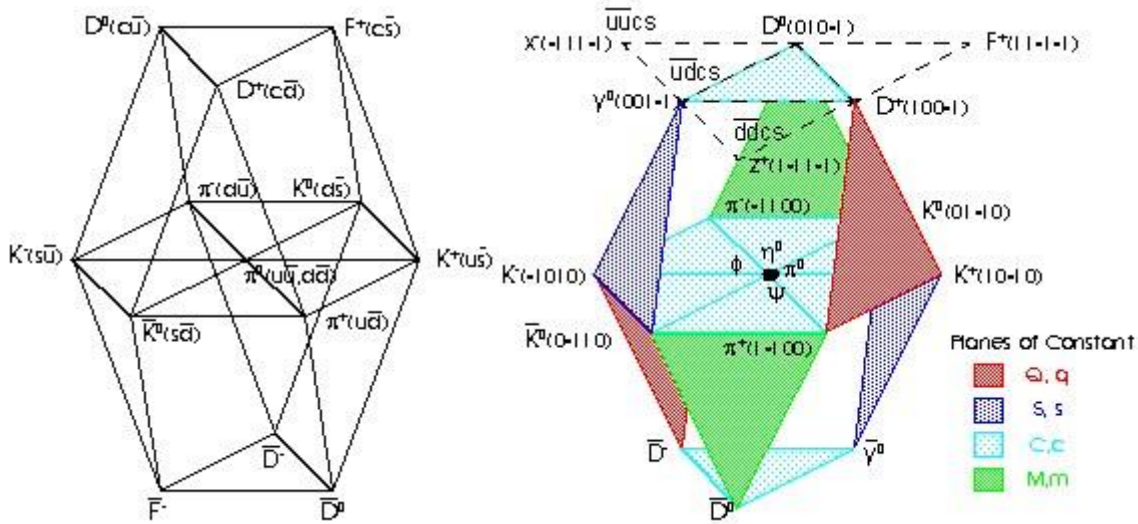
$n^0$	0	1	-1	-1	-1/2	1	2	0	0
$p^+$	1	0	-1	-1	+1/2	2	1	0	0
$\Lambda^0$	0	0	0	-1	0	1	1	1	0
$\Delta^-$	-1	2	-1	-1	-3/2	0	3	0	0
$\Delta^0$	0	1	-1	-1	-1/2	1	2	0	0
$\Delta^+$	1	0	-1	-1	+1/2	2	1	0	0
$\Delta^{++}$	2	-1	-1	-1	+3/2	3	0	0	0
$\Sigma^-$	-1	1	0	-1	-1	0	2	1	0
$\Sigma^0$	0	0	0	-1	0	1	1	1	0
$\Sigma^+$	1	-1	0	-1	1	2	0	1	0
$\Xi^-$	-1	0	1	-1	-1/2	0	1	2	0
$\Xi^0$	0	-1	1	-1	+1/2	1	0	2	0
$\Omega^-$	-1	1	2	-1	0	0	0	3	0



Commonly Stated	Proposed Reaction	Balanced (qmsc) Description
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Reaction	Statement	
$n^0 \rightarrow p^+ e^- \bar{\nu}_e$	$n^0 \rightarrow p^+ e^- \bar{\nu}_e$	(01-1-1)→(10-1-1)+(-1000)+(0100)
$\Lambda^0 \rightarrow p^+ \pi^-$	$\Lambda^0 \rightarrow p^+ \pi^- (\nu_\mu \nu_e)$	(000-1)→(10-1-1)+(-1100)+(0-100)+(0010)
$\Lambda^0 \rightarrow n^0 \pi^0$	$\Lambda^0 \rightarrow n^0 \pi^0 (\nu_\mu \nu_e)$	(000-1)→(01-1-1)+(0000)+(0-100)+(0010)
$\Sigma^0 \rightarrow \Lambda^0 \gamma$	$\Sigma^0 \rightarrow \Lambda^0 \gamma$	(000-1)→(000-1)+(0000)
$\Sigma^+ \rightarrow p^+ \pi^0$	$\Sigma^+ \rightarrow p^+ \pi^0 (\nu_\mu \nu_e)$	(1-10-1)→(10-1-1)+(0000)+(0-100)+(0010)
$\Sigma^+ \rightarrow n^0 \pi^+$	$\Sigma^+ \rightarrow n^0 \pi^+ (\nu_\mu \nu_e)$	(1-10-1)→(01-1-1)+(1-100)+(0-100)+(0010)
$\Sigma^- \rightarrow n^0 \pi^-$	$\Sigma^- \rightarrow n^0 \pi^- (\nu_\mu \nu_e)$	(-110-1)→(01-1-1)+(-1100)+(0-100)+(0010)
$\Xi^0 \rightarrow \Lambda^0 \gamma$	$\Xi^0 \rightarrow \Lambda^0 \gamma (\nu_\mu \nu_e)$	(0-11-1)→(000-1)+(0000)+(0-100)+(0010)
$\Xi^- \rightarrow \Lambda^0 \pi^-$	$\Xi^- \rightarrow \Lambda^0 \pi^- (\nu_\mu \nu_e)$	(-101-1)→(000-1)+(-1100)+(0-100)+(0010)
$\Omega^- \rightarrow \Lambda^0 K^-$	$\Omega^- \rightarrow \Lambda^0 K^- (\nu_\mu \nu_e)$	(-1-12-1)→(000-1)+(-1010)+(0-100)+(0010)
$\Omega^- \rightarrow \Xi^0 \pi^-$	$\Omega^- \rightarrow \Xi^0 \pi^- (\nu_\mu \nu_e)$	(-1-12-1)→(0-11-1)+(-1100)+(0-100)+(0010)
$\Omega^- \rightarrow \Xi^- \pi^0$	$\Omega^- \rightarrow \Xi^- \pi^0 (\nu_\mu \nu_e)$	(-1-12-1)→(-101-1)+(0000)+(0-100)+(0010)

Commonly Stated and Proposed Reaction Statement	Balanced (qmsc) Description
$n^0 + p^+ \rightarrow p^+ p^+ \pi^-$	(01-1-1)+(10-1-1)→(10-1-1)+(10-1-1)+(-1100)
$\pi^- + p^+ \rightarrow n^0 \pi^0$	(-1100)+(10-1-1)→(01-1-1)+(0000)
$\mu^- + p^+ \rightarrow n^0 \nu_\mu$	(-1110)+(10-1-1)→(01-1-1)+(0010)
$K^- + p^+ \rightarrow \Sigma^+ \pi^-$	(-1010)+(10-1-1)→(1-10-1)+(-1100)
$K^- + p^+ \rightarrow \Sigma^- \pi^+$	(-1010)+(10-1-1)→(-110-1)+(1-100)
$\pi^- + p^+ \rightarrow \Lambda^0 K^0$	(-1100)+(10-1-1)→(000-1)+(01-10)
$p^+ + p^+ \rightarrow \Xi^0 p^+ K^0 K^+$	(10-1-1)+(10-1-1)→(0-11-1)+(10-1-1)+(01-10)+(10-10)
$K^- + p^+ \rightarrow \Omega^- K^0 K^+$	(-1010)+(10-1-1)→(-1-12-1)+(01-10)+(10-10)



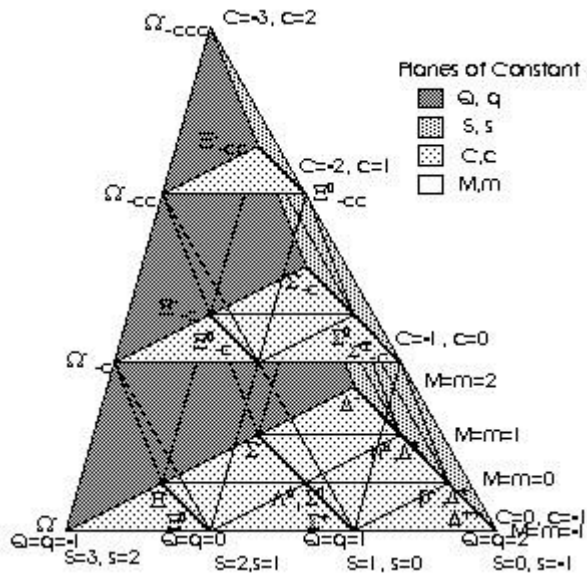
[http://home.nycap.rr.com/leptonjim/physics/l\\_model/fl.html](http://home.nycap.rr.com/leptonjim/physics/l_model/fl.html)

Particle	Lepton Excess/Charge				Isospin	Uphish-ness	Downish-ness	Anti-strange-ness	Charm
	e <sup>+</sup>	v <sub>e</sub>	v <sub>μ</sub>	v <sub>τ</sub>					
	q	m	s	c					
D <sup>0</sup>	0	1	0	-1	-1/2	-1	0	0	1
y <sup>0</sup>	0	0	1	-1	0	-1	-1	1	1
D <sup>+</sup>	1	0	0	-1	+1/2	0	-1	0	1
D <sup>-</sup>	-1	0	0	1	-1/2	0	1	0	-1
y <sup>0</sup>	0	0	-1	1	0	1	1	-1	-1
D <sup>0</sup>	0	-1	0	1	1/2	1	0	0	-1
φ, ψ	0	0	0	0	0	0	0	0	0
x <sup>-</sup>	-1	1	1	-1	-1	-2	0	1	1
F <sup>+</sup>	1	1	-1	-1	0	0	0	-1	1
z <sup>+</sup>	1	-1	1	-1	1	0	-2	1	1
z <sup>-</sup>	-1	1	-1	1	-1	0	2	-1	-1
F <sup>-</sup>	-1	-1	1	1	0	0	0	1	-1
x <sup>+</sup>	1	-1	-1	1	1	2	0	-1	-1



Commonly Stated Reaction	Proposed Reaction Statement	Balanced (qmsc) Description
$D^0 \rightarrow K^- \pi^+$	$D^0 \rightarrow K^- \pi^+ (\nu_e \nu_\mu) (\nu_e \nu_\tau)$	$(010-1) \rightarrow (-1010) + (1-100) + 2x(0100) + (00-10) + (000-1)$
	or	or
	$D^0 \rightarrow y^0 (\nu_e \nu_\mu)$	$(010-1) \rightarrow (001-1) + (0100) + (00-10)$
	then	then
	$y^0 \rightarrow K^- \pi^+ (\nu_e \nu_\tau)$	$(001-1) \rightarrow (-1010) + (1-100) + (0100) + (000-1)$
$D^0 \rightarrow K^0 \pi^+ \pi^+ \pi^- \pi^-$	$D^0 \rightarrow K^0 \pi^+ \pi^+ \pi^- \pi^- (\nu_\mu \nu_\tau)$	$(0-101) \rightarrow (0-110) + 2x(1-100) + 2x(-1100) + (00-10) + (0001)$
$\varphi \rightarrow \phi \gamma$	$\varphi \rightarrow \phi \gamma (\nu_e \nu_\tau)$	$(0000) \rightarrow (010-1) + (0-100) + (0001)$
$B^- \rightarrow D^0 \pi^-$	$B^- \rightarrow D^0 \pi^- (\nu_e \nu_\mu)$	$(-111-1) \rightarrow (010-1) + (-1100) + (0-100) + (0010)$
$B^0 \rightarrow D^0 \pi^+ \pi^-$	$B^0 \rightarrow D^0 \pi^+ \pi^- (\nu_e \nu_\mu)$	$(00-11)(0-101) \rightarrow (1-100) + (-1100) + (0100) + (00-10)$

Particle	Lepton Excess/Charge				Isospin $I_3$	Uph- ish- ness U	Down- ish- ness D	Anti- strange -ness S	Charm C
	$e^+$	$\nu_e$	$\nu_\mu$	$\nu_\tau$					
	q	m	s	c					
$\Sigma_{-c}^-$	-1	1	-1	0	-1	1	3	0	-1
$\Sigma_{-c}^0$	0	0	-1	0	0	2	2	0	-1
$\Sigma_{-c}^+$	1	-1	-1	0	1	3	1	0	-1
$\Xi_{-c}^-$	-1	0	0	0	-1/2	1	2	1	-1
$\Xi_{-c}^0$	0	-1	0	0	+1/2	2	1	1	-1
$\Omega_{-c}^-$	-1	-1	1	0	0	1	1	2	-1
$\Xi_{-2c}^-$	-1	0	-1	1	-1/2	2	3	0	-2
$\Xi_{-2c}^0$	0	-1	-1	1	+1/2	3	2	0	-2
$\Omega_{-2c}^-$	-1	-1	0	1	0	2	2	1	-2
$\Omega_{-3c}^-$	-1	-1	-1	2	0	3	3	0	-3

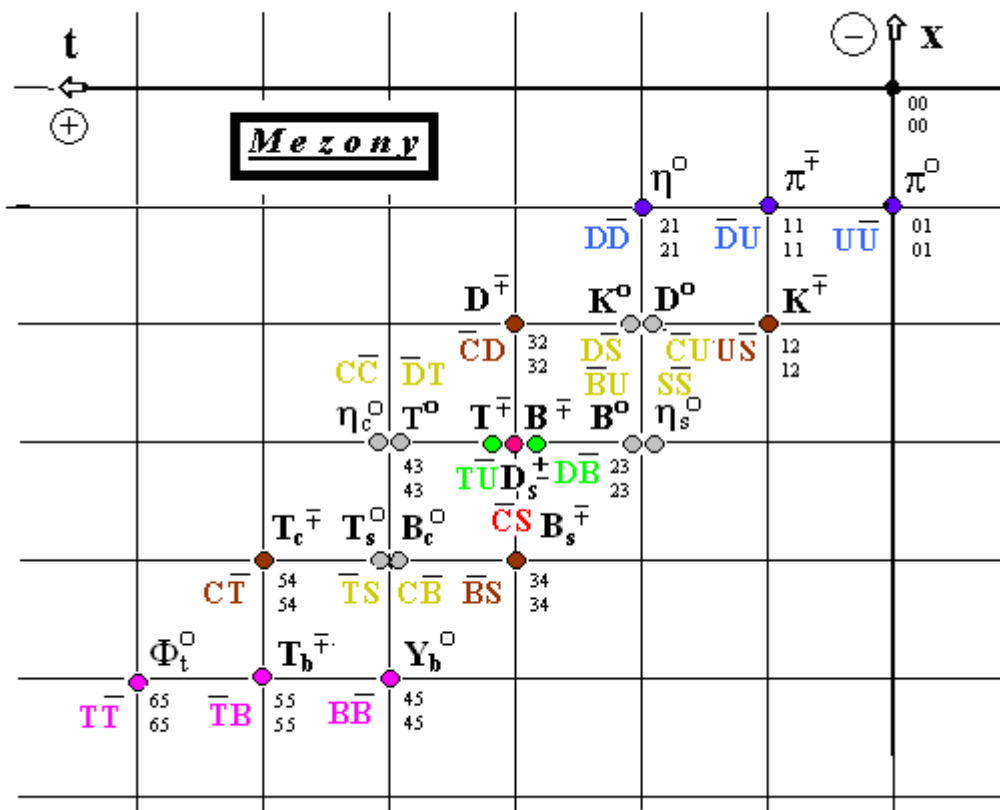


Particle	Lepton Excess/Charge				Isospin	Up-ish-ness	Down-ish-ness	Anti-strange-ness	Charm
	e <sup>+</sup>	<span style="color: red;">ν<sub>e</sub></span>	ν <sub>μ</sub>	ν <sub>τ</sub>					
	q	m	s	c	I <sub>3</sub>	U	D	S	C
	0	2	-1	-2	-1	0	2	0	1
Λ <sub>c</sub> <sup>+</sup>	1	1	-1	-2	0	1	1	0	1
Σ <sub>c</sub> <sup>++</sup>	2	0	-1	-2	1	2	0	0	1
	0	1	0	-2	-1/2	0	1	1	1
	1	0	0	-2	+1/2	1	0	1	1
	0	0	1	-2	0	0	0	2	1
	1	2	-1	-3	-1/2	0	1	0	2
	2	1	-1	-3	+1/2	1	0	0	2
	1	1	0	-3	0	0	0	1	2
	2	2	-1	-4	0	0	0	0	3

Commonly Stated Reaction	Proposed Reaction Statement	Balanced (qmsc) Description
$\nu_{\mu}+p^{+} \rightarrow \Sigma_c^{++}\mu^{-}$	$\nu_{\mu}+p^{+} \rightarrow \Sigma_c^{++}\mu^{-}(\nu_e\nu_{\tau})$	(0010)+(10-1-1)→(20-1-2)+(-1110)+(0-100)+(0001)
then	then	then
$\Sigma_c^{++} \rightarrow \Lambda_c^{+}\pi^{+}$	$\Sigma_c^{++} \rightarrow \Lambda_c^{+}\pi^{+}$	(20-1-2)→(11-1-2)+(1-100)
then	then	then
$\Lambda_c^{+} \rightarrow \Lambda^0\mu^{+}\nu$	$\Lambda_c^{+} \rightarrow \Lambda^0\mu^{+}\nu_e(\nu_e\nu_{\tau})$	(11-1-2)→(000-1)+(1-1-10)+2x(0100)+(000-1)
or	or	or
$\Lambda_c^{+} \rightarrow \Lambda^0\pi^{+}\pi^{+}\pi^{-}$	$\Lambda_c^{+} \rightarrow \Lambda^0\pi^{+}\pi^{+}\pi^{-}(\nu_e\nu_{\mu})(\nu_e\nu_{\tau})$	(11-1-2)→(000-1)+2x(1-1-100)+(-1100)+2x(0100)+(00-10)+(000-1)

Commonly Stated Reaction	Proposed Reaction Statement	Balanced (qmsc) Description
$\nu_{\mu}+p^{+} \rightarrow \Sigma_c^{++}\mu^{-}$	$\nu_{\mu}+p^{+} \rightarrow \Delta^{++*}\mu^{-}$	(0010)+(10-1-1)→(2-1-1-1)+(-1110)
then	then	then
$\Sigma_c^{++} \rightarrow \Lambda_c^{+}\pi^{+}$	$\Delta^{++*} \rightarrow \Delta^{+*}\pi^{+}$	(2-1-1-1)→(10-1-1)+(1-100)
then	then	then
$\Lambda_c^{+} \rightarrow \Lambda^0\mu^{+}\nu$	$\Delta^{+*} \rightarrow \Lambda^0\mu^{+}\nu_e$	(10-1-1)→(000-1)+(1-1-10)+(0100)
or	or	or
$\Lambda_c^{+} \rightarrow \Lambda^0\pi^{+}\pi^{+}\pi^{-}$	$\Delta^{+*} \rightarrow \Lambda^0\pi^{+}\pi^{+}\pi^{-}(\nu_e\nu_{\mu})$	(10-1-1)→(000-1)+2x(1-1-100)+(-1100)+(0100)+(00-10)

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[http://home.nycap.rr.com/leptonjm/physics/l\\_model/intro.html](http://home.nycap.rr.com/leptonjm/physics/l_model/intro.html)



Takto postavil tabulku mezonů ( ve snaze o symetrii pan Bc. D. Zoevistian ) v r. 2004 ZOE se zamlžující pravou pyramidální symetrií :

	$d^-$	$u^-$	$s^-$	$c^-$	$b^-$	$t^-$
$d$	$\eta^0$	$\pi^{+-}$	$K^0$	$D^{+-}$	$B^0$	$T^{+-}$
$u$		$\pi^0$	$K^{+-}$	$D^0$	$B^{+-}$	$T^0$
$s$			$\eta_s^0$	$D_s^{+-}$	$B_s^0$	$T_s^{+-}$
$c$				$\eta_c^0$	$B_c^{+-}$	$T_c^0$
$b$					$Y_b^0$	$T_b^{+-}$
$t$						$\Phi_t^0$