v tom appletu 2 je nějaká nábojově vadná rovnice : $K^- + p \;=\; \Omega^- + K^+ + K^- + \pi^-$ .....

$K^- + p \;=\; \Omega^- + K^+ + K^0$

US + UUD = SSS + US$^-$ + DS$^-$

Particle	Symbol	Anti-particle	Makeup	Rest mass MeV/c^2	S	C	B	Lifetime	Decay Modes
Kaon	$\mathbf{K^+}$	$\mathbf{K^-}$	$u\underline{s}$	493.7	+1	0	0	1.24 x10^{-8}	$\mu^+\nu_\mu$, $\pi^+\pi^0$
Kaon	$\mathbf{K^0_S}$	$\mathbf{K^0_S}$	1*	497.7	+1	0	0	0.89 x10^{-10}	$\pi^+\pi^-$,$2\pi^0$
Kaon	$\mathbf{K^0_L}$	$\mathbf{K^0_L}$	1*	497.7	+1	0	0	5.2 x10^{-8}	$\pi^+e^-\underline{\nu}_e$

$$K^+ \rightarrow \mu^+ + \nu_\mu\ ,\ K^+ \rightarrow \pi^+ + \pi^0 \qquad K^- \rightarrow \mu^- + \bar{\nu}_\mu\ ,\ K^- \rightarrow \pi^- + \pi^0$$

and

$$K^- \rightarrow \pi^0 + \mu^- + \bar{\nu}_\mu$$

One is called K-zero-short $\quad K^0_S \quad \dfrac{\psi(d\bar{s}) + \psi(\bar{d}s)}{\sqrt{2}}$ Lifetime 9×10^{-11} s

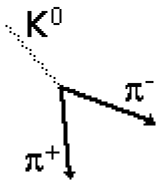
The other is called K-zero-long. $\quad K^0_L \quad \dfrac{\psi(d\bar{s}) - \psi(\bar{d}s)}{\sqrt{2}}$ Lifetime 5×10^{-8} s

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

$$K^0_S \rightarrow \pi^+ + \pi^- \qquad K^0_S \rightarrow \pi^0 + \pi^0$$

$$K^0_L \rightarrow \pi^+ + \pi^- + \pi^0 \qquad K^0_L \rightarrow \pi^0 + \pi^0 + \pi^0$$

$K^0 \rightarrow \pi^+ + \pi^-$



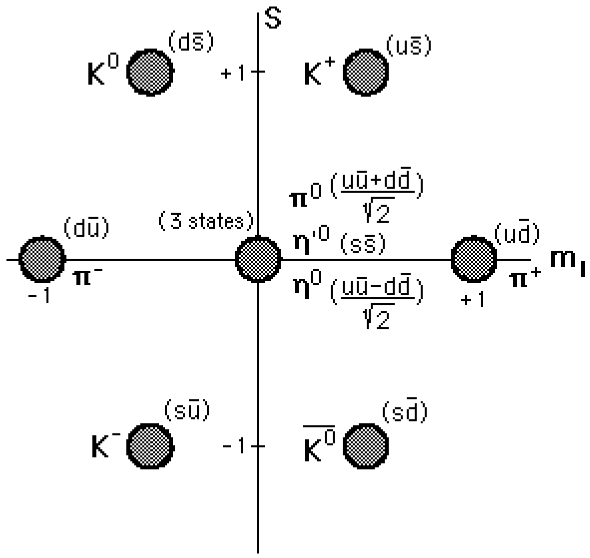
$$\underset{\bar{u}s}{K^-} + \underset{uud}{p} \rightarrow \underset{sss}{\Omega^-} + \underset{u\bar{s}}{K^+} + \underset{d\bar{s}}{K^0}$$

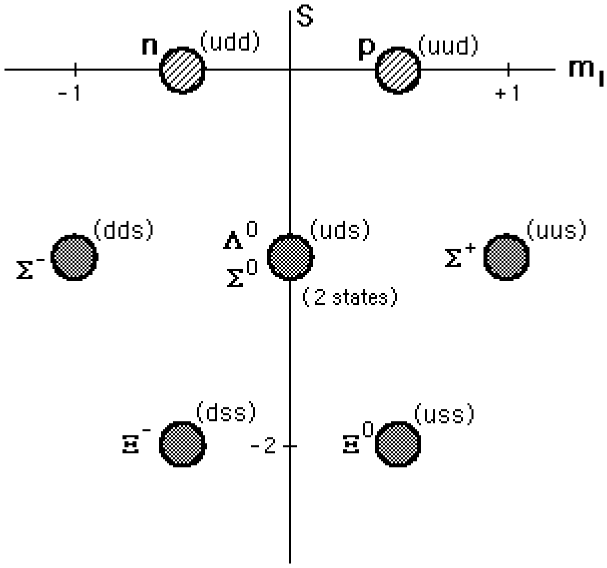
Decay				Lifetime
$\Omega^- \rightarrow$	Ξ^0	+	π^-	$.8 \times 10^{-10}$ s
sss	uss		$\bar{u}d$	
$\Xi^0 \rightarrow$	Λ^0	+	2γ	2.9×10^{-10} s
uss	uds			
$\Lambda^0 \rightarrow$	p	+	π^-	2.6×10^{-10} s
uds	uud		$\bar{u}d$	

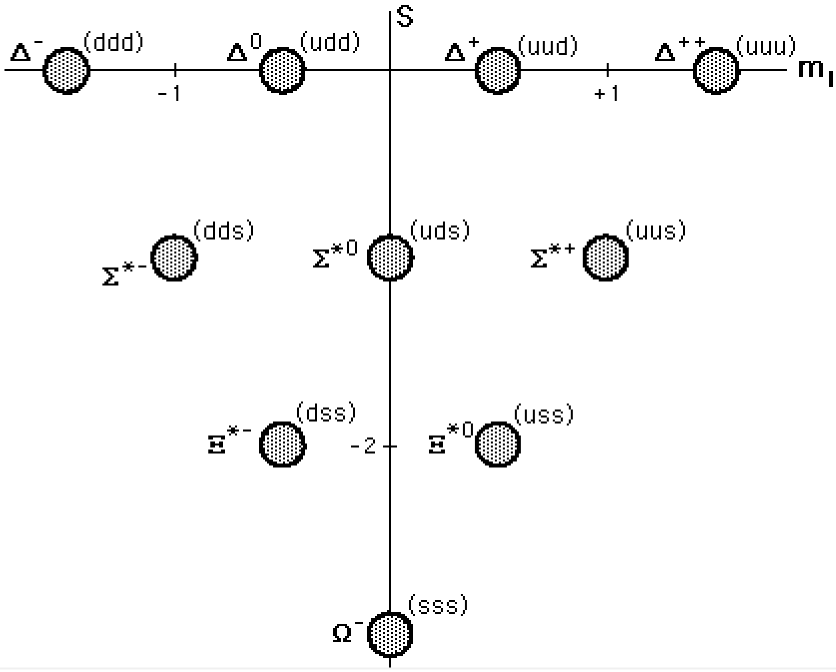
$\Sigma^+ \rightarrow p + \pi^0$ and $\Sigma^+ \rightarrow n + \pi^+$

$$\underset{uds}{\Lambda^0} \rightarrow \underset{uud}{p} + \underset{\bar{u}d}{\pi^-} \qquad S = -1 \neq 0 + 0$$

$$\underset{uds}{\Lambda^0} \rightarrow \underset{udd}{n} + \underset{\frac{\bar{u}u+\bar{d}d}{\sqrt{2}}}{\pi^0} \qquad S = -1 \neq 0 + 0$$







Particle	Symbol	Makeup	Rest mass MeV/c^2	Spin	B	S	Lifetime	Decay Modes
Lambda	Λ^0	uds	1115.6	1/2	+1	-1	2.6 $\times 10^{-10}$	$p\pi^-$, $n\pi^0$
Lambda	Λ^+_c	udc	2281	1/2	+1	0	2×10^{-13}	...

$$K^- + p = \Omega^- + K^+ + K^0$$

$U^-S + UUD = SSS + US^- + DS^-$ ……. kvarková rovnice

$$K^- + p = \Omega^- + K^+ + K^0$$

$$\Downarrow \quad \Downarrow \quad \Downarrow \quad \Downarrow \quad \Downarrow$$

$$\frac{x^2 . t^1}{x^2 . t^1} . \frac{x^3 . t^0}{x^0 . t^2} = \frac{x^6 . t^2}{x^3 . t^4} . \frac{x^2 . t^1}{x^2 . t^1} . \frac{x^2 . t^2}{x^2 . t^2}$$

(12 8)

? nepravá rovnováha a tedy nestabilní

(12 8)

zde jsem opsal (!) z literatury dvě interakce, které se liší ?, proč ?, která je správná

$$K^+ \qquad \mu^+ + \nu_\mu$$

$$\frac{x^2. t^1}{x^2. t^1} = \frac{x^1. t^1}{x^1. t^2} . \frac{x^1. t^1}{x^1. t^0}$$

(4 3)

? nepravá rovnováha a tedy nestabilní

(4 3)

$$\pi^+ = \mu^+ + \nu_\mu$$

$$\frac{x^1. t^1}{x^1. t^1} = \frac{x^1. t^1}{x^1. t^2} . \frac{x^1. t^1}{x^1. t^0}$$

(3 3)

pravá rovnováha, produkty se už dál rozpadat nebudou

(3 3)

$$\hookrightarrow \mu^+ = e^+ + \nu_e + \nu_\mu^-$$

$$\frac{x^1. t^1}{x^1. t^2} = \frac{x^2. t^1}{x^2. t^2} . \frac{x^0. t^1}{x^0. t^0} . \frac{x^1. t^0}{x^1. t^1}$$

(4 4)

(4 4)

To, jak vznikl „vzoreček“ pro elementární částici složením z kvarků si můžete přečíst na mých www-stránkách

$$(U\,U^-)\qquad \frac{x^{1}.t^{-1/3}}{x^{0}.t^{+1/3}} \;.\; \frac{x^{0}.t^{+1/3}}{x^{1}.t^{-1/3}} = \frac{x^{1}.t^{0}}{x^{1}.t^{0}}$$

$\omega^{o} \equiv \eta^{o}$; $\rho^{-} \equiv \pi^{-}$

$$(D^-\,U)\qquad \frac{x^{0}.t^{4/3}}{x^{1}.t^{2/3}} \;.\; \frac{x^{1}.t^{-1/3}}{x^{0}.t^{+1/3}} = \frac{x^{1}.t^{1}}{x^{1}.t^{1}}$$

$\rho^{+-} \equiv \pi^{+-}$; $\omega^{o} \equiv \eta^{o}$; $\rho^{o} \equiv \pi^{o}$

$$(D\,D^-)\qquad \frac{x^{1}.t^{2/3}}{x^{0}.t^{4/3}} \;.\; \frac{x^{0}.t^{4/3}}{x^{1}.t^{2/3}} = \frac{x^{1}.t^{2}}{x^{1}.t^{2}}$$

$\rho^{o} \equiv \pi^{o}$; $\rho^{+} \equiv \pi^{+}$

$$(U\,S^-)\qquad \frac{x^{1}.t^{-1/3}}{x^{0}.t^{+1/3}} \;.\; \frac{x^{1}.t^{4/3}}{x^{2}.t^{2/3}} = \frac{x^{2}.t^{1}}{x^{2}.t^{1}}$$

$*K^{+-} \equiv K^{+-}$

$$(C^-\,U)\qquad \frac{x^{1}.t^{7/3}}{x^{2}.t^{5/3}} \;.\; \frac{x^{1}.t^{-1/3}}{x^{0}.t^{+1/3}} = \frac{x^{2}.t^{2}}{x^{2}.t^{2}}$$

$*D^{0} \equiv D^{0}$

$$(D\,S^-)\qquad \frac{x^{1}.t^{2/3}}{x^{0}.t^{4/3}} \;.\; \frac{x^{1}.t^{4/3}}{x^{2}.t^{2/3}} = \frac{x^{2}.t^{2}}{x^{2}.t^{2}}$$

$*K^{0} \equiv K^{0}$