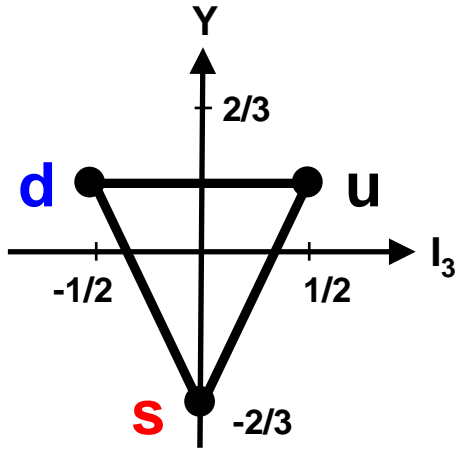


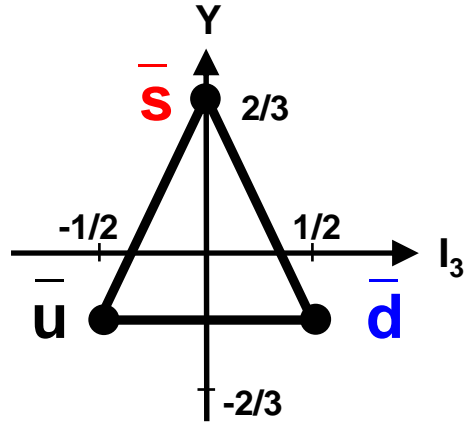
# Quarks

Quark	Q	$I_3$	B	S	Y
u	+2/3	+1/2		0	+1/3
d	-1/3	-1/2	1/3	0	+1/3
s	-1/3	0		-1	-2/3

spin  
 $J = 1/2$



Quark



Antiquark

$Y = B + S$

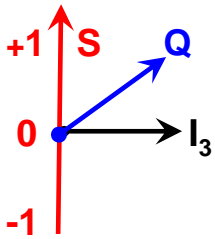
hypercharge

$I_3 = Q - Y/2$

Gell-Mann - Nishijima rule

# The Quark Model

## MESONS



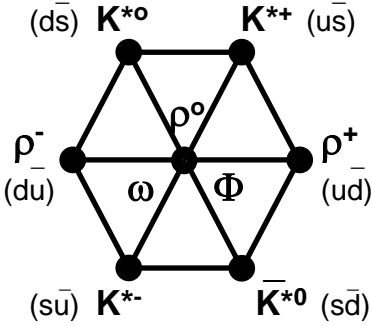
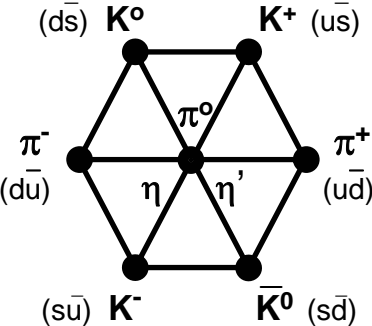
Mass  
MeV

$J^P = 0^-$   
( $\uparrow\downarrow$ )

$J^P = 1^-$   
( $\uparrow\uparrow$ )

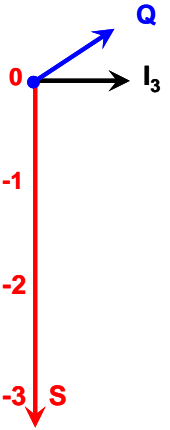
Mass  
MeV

494/498  
  
135  
140  
548/958  
  
494/498



892  
  
770  
782 / 1020  
  
892

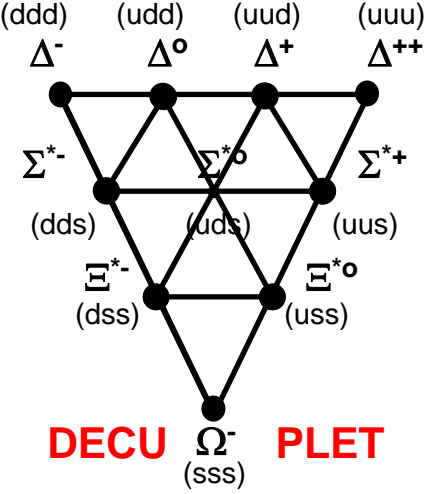
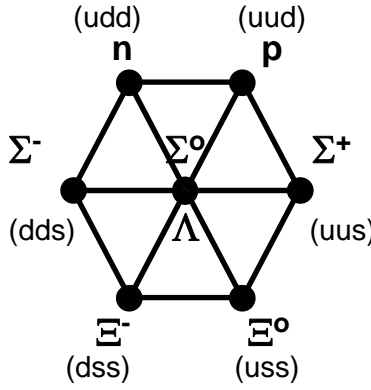
## BARYONS



$J^P = 1/2^+$   
( $\uparrow\downarrow\uparrow$ )

$J^P = 3/2^+$   
( $\uparrow\uparrow\uparrow$ )

939 / 938  
  
1197/1193/1189  
1116  
  
1321 / 1315



1232  
  
1385  
  
1532  
  
1672

OCTET

DECU PLET  
 $\Omega^-$   
(sss)