

# Klassifizierung der Baryonen nach Isospin

3 u/d-Quarks:  $\underline{\frac{1}{2}} \otimes \underline{\frac{1}{2}} \otimes \underline{\frac{1}{2}} = \underline{\frac{1}{2}} \oplus \underline{\frac{1}{2}} \oplus \underline{\frac{3}{2}} \Rightarrow I = \frac{1}{2}, \frac{3}{2}$

2 u/d-Quarks:  $\underline{\frac{1}{2}} \otimes \underline{\frac{1}{2}} = \underline{0} \oplus \underline{1} \Rightarrow I = 0, 1$

1 u/d-Quarks:  $I = \underline{\frac{1}{2}}$

0 u/d-Quarks:  $I = 0$

$3_{u/d} \left\{ \begin{array}{l} I = \frac{3}{2} \quad (\Delta^{++}, \Delta^+, \Delta^0, \Delta^-) \\ I = \frac{1}{2} \quad (N^+, N^0) \end{array} \right.$

$2_{u/d} \left\{ \begin{array}{l} I = 1 \quad (\Sigma^+, \Sigma^0, \Sigma^-), (\Sigma_b^+, \Sigma_b^0, \Sigma_b^-), (\Sigma_c^{++}, \Sigma_c^+, \Sigma_c^0) \\ I = 0 \quad \Lambda^0, \Lambda_b^0, \Lambda_c^+ \end{array} \right.$

$1_{u/d} \left\{ \begin{array}{l} I = \frac{1}{2} \quad (\Xi^0, \Xi^-), (\Xi_b^0, \Xi_b^-), (\Xi_{bb}^0, \Xi_{bb}^-), \\ (\Xi_c^+, \Xi_c^0), (\Xi_{cc}^{++}, \Xi_{cc}^+), (\Xi_{cb}^+, \Xi_{cb}^0) \end{array} \right.$

$0_{u/d} \left\{ \begin{array}{l} I = 0 \quad \Omega^-, \Omega_b^-, \Omega_{bb}^-, \Omega_{bbb}^-, \\ \Omega_c^0, \Omega_{cc}^+, \Omega_{ccc}^{++}, \Omega_{cb}^0, \Omega_{cbb}^0, \Omega_{ccb}^+ \end{array} \right.$

Mesonen:  ~~$q\bar{q}$~~   $q\bar{q}'$  mit  $q, q' = u \text{ oder } d \Rightarrow I = 0, 1$   
 $(u\bar{q}'', d\bar{q}'')$  mit  $q'' \neq u \text{ oder } d \Rightarrow I = \frac{1}{2}$