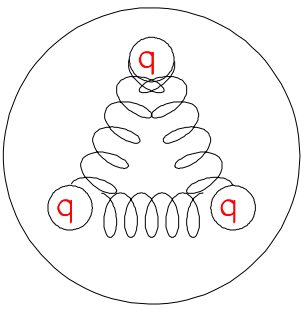
An introduction to $q\bar{q}$ mesons

Originally the quark model predicted that only two types of quark configurations were required to account for all strongly interacting particles

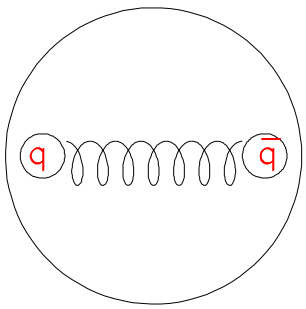
Baryons

qqq



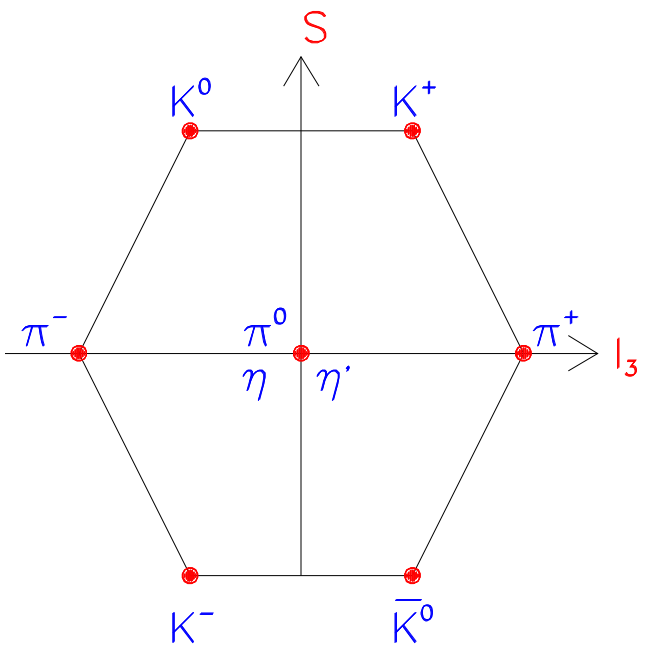
Mesons

$q\bar{q}$



This description was found to be very successful in grouping the particles into multiplets of a given spin parity

For example the ground state 0^{-+} meson nonet

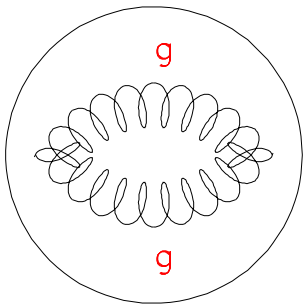


An introduction to non−$q\bar{q}$ mesons

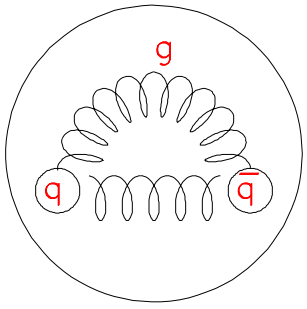
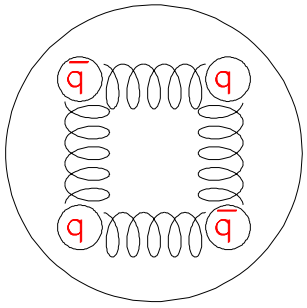
Quantum Chromo Dynamics the field theory describing strong interactions not only describes how quarks and antiquarks interact by the exchange of gluons to form mesons

− it also predicts a rich spectrum of non−$q\bar{q}$ states

Glueballs gg, ggg



Hybrids $q\bar{q}\,g$



4−quark states $q\bar{q}\,q\bar{q}$