

# Configuration mixing in the quark model

Roelof Bijker (ICN-UNAM, Mexico) and Elena Santopinto (INFN, Genova, Italy)

The constituent quark model treats hadrons in terms of valence-quark configurations ( $q\bar{q}$  for mesons and  $qqq$  for baryons). Despite its successes in describing the properties of hadrons, there is compelling evidence for the importance of exotic degrees of freedom in hadrons (other than valence quarks), in particular quark-antiquark pair creation. In this contribution, I review some recent results of applications of the unquenched quark model in baryon spectroscopy in which the effects of  $q\bar{q}$  sea quarks are taken into account in an explicit form via a  ${}^3P_0$  coupling mechanism [1, 2] between the  $qqq$  and  $qqq - q\bar{q}$  configurations.

## References

- [1] R. Bijker and E. Santopinto, Phys. Rev. C **80**, 065210 (2009);  
E. Santopinto and R. Bijker, Phys. Rev. C **82**, 062202(R) (2010).
- [2] E. Santopinto, J. Ferretti and R. Bijker, Few-Body Systems **50**, 199-201 (2011);  
R. Bijker, J. Ferretti and E. Santopinto, Phys. Rev. C **85**, 035204 (2012).