

Unquenching the quark model

Elena Santopinto (INFN, Genova, Italy)

The formalism for a new generation of Constituent Quark Models, in which the higher Fock components of the baryon wave functions are explicitly and systematically introduced through a QCD inspired pair-creation mechanism, has been recently constructed [1]. This unquenching of the Quark Model will be presented and discussed. It will be shown how after renormalization, the unquenching [2] is able to preserve the phenomenological successes of the old constituent quark model, but opening the possibility to address open problems in hadron structure and spectroscopy. Interesting results for the spin of the proton [2] and the flavor asymmetry of the nucleon sea [3] will be presented.

References

- [1] E. Santopinto and R. Bijker, *Few-Body Systems* 44, 95 (2008).
- [2] R. Bijker and E. Santopinto, *Phys. Rev. C* 80, 065210 (2009).
- [3] E. Santopinto and R. Bijker, *Phys. Rev. C* 82, 062202R (2010).