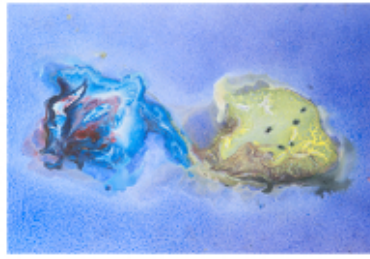


Quark Confinement and the Hadron Spectrum XI



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Hadron spectroscopy at CLAS and CLAS12

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The known hadron matter is made of two possible configurations: baryons, combination of 3 quarks and mesons, made by a quark and an anti-quark pair. QCD, the fundamental theory of strong interaction does not exclude the existence of states made by different combination of quarks and gluons: tetra-quarks, exotic and hybrid mesons, glue-balls. Precise determination of the hadron spectrum as well as finding evidence for such configurations would help in understanding one of the main open question in hadron physics: how the quark are confined within hadrons. In spite of a several decades of investigation, the experimental proof of the existence of such states is still under debate and the excited spectrum of mesons and baryons produced with different beams represent one of the main topic in the research programs of many existing (CERN, SLAC, BES, JLab ..) and future (JLAB12, FAIR ...) facilities. In my talk I will present the the results obtained at Jefferson Lab with the CLAS detector and the physic program that will be pursued in the Hall-B using the CLAS12 detector and the energy-upgraded beam of JLab. The physic case as well as the quasi-real photon tagger facility proposed for that experimental Hall will be described and some expected results will be shown.

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