# The meson spectroscopy program at JLAB

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The mechanism at the basis of the quark confinement within hadrons is one of the main open unknown of today's hadron physics. To get insight into this fascinating topic, several experiments have been performed in the last decades. Their purpose was a precise determination of the hadron spectrum, not only to assess the properties of baryons and mesons in their fundamental and excited states, but also to investigate for the existence of alternative quark and quark-gluon configurations, allowed by QCD. So far, searches for such objects, namely glueballs (composed by gluons only), hybrid mesons ($q\bar{q}g$) or mesons with exotic quantum numbers and many-quark configurations, though producing quite a wealth of observations, haven't been conclusive yet to identify any signal of exotic hadrons in an uncontroverted way. Experiments have been using a wide variety of beams to pursue new hadron searches in the most extensive and thorough way. The study of hadron production and decays in different experimental environments is in fact fundamental to fully understand their phenomenology. Presently, many experiments are active on the subject at different facilities around the world (CERN, BEPC, KEK), or are planned to start taking data in the near future (FAIR, JLAB12, KEKII).

In Jefferson Lab (Virginia, USA) a wide scientific program involving hadron spectroscopy as one of the main search items has been deployed, and is ready to start with the upcoming upgrade of the CEBAF machine. Real and quasi-real photon beams will be shortly available with unprecedented intensity and momentum resolution, and will allow for the first time ever high precision and high statistics hadron spectroscopy studies. Experiments in Hall-D (GluEX) and Hall-B (CLAS12) will be devoted to these searches. In this talk the physics case of hadron spectroscopy in photoproduction reactions, and the adopted approach of JLAB experiments to these searches, will be discussed. In particular, a description of the results achieved so far by the CLAS experiment, that operated in Hall-B with real photons of energy around 5 GeV, and the capabilities and expected performances of the future CLAS12 detector, in which a dedicated part has been conceived to tag quasi-real photons for hadron spectroscopy purposes, will be reported.