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The baryon spectroscopy program at Jefferson Lab

Prof. Annalisa D'Angelo

University of Rome Tor Vergata and INFN Roma Tor Vergata
Department of Physics – Via della Ricerca Scientifica, 1 – 00133 Rome, Italy

ABSTRACT

The study of baryonic excited states provides fundamental information on the internal structure of the nucleon and on the degrees of freedom that are relevant for strong QCD. Excited baryons are composite states and are sensitive to details of how quarks are confined.

Meson photo-production reactions have provided complementary information to pion-induced reactions since many decades but the recent advent of large solid angle detectors, together with polarized beam and targets, gave access to “complete experiments”, where all independent spin observables of a reaction are measured. Constraints from polarization measurements on the experimental side and latest results from Lattice QCD calculations on the theoretical one have opened an “exciting” new era in our understanding of the spectrum of light-quarks baryons. Latest results and some future perspectives from the CLAS collaboration are presented.