BARYON SPECTRUM AND STRUCTURE

Annalisa D'Angelo[1]
[1]University of Roma Tor Vergata and INFN Roma Tor Vergata, Via della Ricerca Scientifica 1, 00133 Rome, Italy

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 QCD at low energies. N* are composite states and are sensitive to details of the how quark are confined.
Most of the information on baryonic resonances comes from meson-nucleon scattering reactions but the observed states are far less abundant than those predicted by quark models.
Meson photo-and electro-production reactions have provided complementary information since many decades but only the recent advent of large solid angle detectors, together with polarized beam and targets, gave access to single and double polarization observables. "Complete experiments", where all independent spin observables of a reaction are measured, are now possible. The Q^2 dependence of excited baryons electro-couplings has been measured, gaining additional insight on baryon internal structure and on the relevant degrees of freedom.
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.