

Baryon spectroscopy: new results and perspectives

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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 quarks are confined. Meson photo-and electro-production reactions have provided complementary information on light quark baryon spectroscopy for several decades, but a crucial step forward has been the advent of large solid angle detectors, together with polarized beam and targets, which gave access to single and double polarization observables. The Q^2 dependence of excited baryons electro-couplings has also been measured, gaining insight into the internal structure of baryons.

The CLAS12 energy upgrade opened an “exciting” new era in baryon spectroscopy, including the search for hybrid hadrons, in which gluons appear as constituent components beyond the valence quarks.

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