

Light Meson Photoproduction: Recent Results from GlueX

The light hadron spectroscopy is a prime tool for studying the structure of matter and quantum chromodynamics. Using the coherent bremsstrahlung technique, the GlueX Experiment at 12 GeV upgraded Jefferson Lab produces 9 GeV linearly polarized photon beam. The long-term aim of the GlueX experiment is to understand the quark and gluon interaction and the search for the hybrid mesons, for which the light meson photoproduction is a vital experimental way. Besides, the meson photoproduction can also provide constraints on the quantum mechanical amplitudes to extract the spectrum of excited baryons at low energy and information on the dominant meson production mechanics at high energy. GlueX has began data taking in high-energy meson photoproduction since last spring, and a broad meson photoproduction program is under analysis. The first physics paper on the beam asymmetry Σ in high-energy π^0/η photoproduction has been published, in which the highest precision measurement of the π^0 asymmetry and the first measurement of η beam asymmetry at the energy above $E_\gamma = 3$ GeV are obtained. In this talk, we will report the status of the GlueX experiment and the results on π^0/η photoproduction, then review other preliminary results for high-energy light meson photoproduction at GlueX.