

Recent results from LEPS2/BGOegg on light-quark baryon spectroscopy

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At SPring-8 LEPS2 beamline, a linearly polarized photon beam is available in the tagged energy range of 1.3–2.4 GeV. In this facility, the BGOegg experiment has been carried out using a detector setup with a large-acceptance electromagnetic calorimeter, which has the world's best resolution in the energy range around 1 GeV. A main physics subject in this experiment is the spectroscopy of light-quark baryon resonances, which are excited from a target proton in the photoproduction of a neutral meson decaying into multiple gammas. Differential cross sections and polarization observables for such reactions have been measured as the basic data that should be input into partial wave analyses. Particularly, high linear polarization of the photon beam is unique in the energy region around 2 GeV and useful to obtain photon beam asymmetries Σ for the decomposition of overlapping resonances. In this talk, I will discuss our recent results on π^0 , η , and ω photoproduction, an on-going analysis about η' photoproduction, and future prospects in the upgraded BGOegg experiment that is being conducted with nearly full coverage of solid angles by electromagnetic calorimeters.

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