Meson photoproduction at GRAAL

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Abstract

Beam asymmetry and differential cross section in the the photoproduction of the η and π meson on the proton target were carried out at GRAAL. A tagged and linearly polarized photon beam was produced by Compton backscattering of a laser beam on a electron beam (6GeV, 200mA) of the ESRF at Grenoble. Depending on the laser line which we use we can obtain photon gamma beam of maximum energy of 1100 or 1500 MeV. Using a 4π detector with azimutal symmetry we can easily measure the beam asymmetry and differential cross section for the reaction of $\vec{\gamma} + p \to p + \pi^o$, $\vec{\gamma} + p \to n + \pi^+$, $\vec{\gamma} + p \to p + \eta$, $\vec{\gamma} + p \to \Lambda + K$. From the comparison of these experimental data and the theoretical model we can extract the properties of the nucleon resonances in the energy range 1-2 GeV.