Contribution ID: 80 Type: not specified

Photoproduction of η and η' mesons on proton and neutron

Friday, 29 July 2016 16:50 (30 minutes)

New high-precision total and differential cross sections for η and η' photoproduction on the proton obtained by the A2 Collaboration at the Mainz Microtron are presented. The total cross section for η photoproduction demonstrates a cusp at the energy W \sim 1.9 $^{\sim}$ GeV. Furthermore, we present a new version of the η MAID model for η and η' photoproduction. The model includes 23 nucleon resonances parameterized with Breit-Wigner shapes. The background is described by vector and axial-vector meson exchanges in the t channel using the Regge phenomenology. Parameters of the resonances were obtained from a fit to the new experimental data of the A2 Collaboration and available data from CBELSA/TAPS, CLAS, and GRAAL Collaborations for η and η' photoproduction on protons and neutrons. Dominant role of $1/2^-$ resonances is discussed. The cusp is explained as a threshold effect due to the opening $\eta'p$ decay channel of the $N(1895)1/2^-$ resonance.

Presenter: KASHEVAROV, Victor (Institut für Kernphysik, Universität Mainz)

Session Classification: Mesons