

η and η' photoproduction with η MAID

Tuesday, 26 September 2017 17:10 (20 minutes)

Photoproduction of η and η' on the nucleons was analyzed within a new version of the η MAID model.

The model includes 23 nucleon resonances in the s channel and t -channel exchange of vector and axial-vector mesons with Regge cuts.

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 total cross section for the $\gamma p \rightarrow \eta p$ reaction demonstrates a cusp at the energy $W \sim 1.9$ GeV.

The cusp is explained as a threshold effect due to the opening $\eta' p$ decay channel of the $N(1895)1/2^-$ resonance.

The model well describes both differential cross sections and polarisation observables for photoproduction of η and η' on the nucleons at photon beam energies from the threshold upto 8 GeV.

The model does not require additional contributions from exotic resonances to explain a narrow structure observed in $\gamma n \rightarrow \eta n$ reaction at $W \sim 1.67$ GeV.

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Session Classification: Spectroscopy of baryons

Track Classification: Spectroscopy of baryons