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Polarization observables T and F in single π^0 and η-photoproduction off quasi-free nucleons

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Collaboration

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Abstract content

Meson photoproduction has developed into a powerful tool to study the nucleons excitation spectrum and test effective quark models which operate in the non-perturbative regime of QCD. An insight into the J^P configurations and isospin decompositions of the contributing resonances is gained by measuring a minimal set of polarization observables on both the proton and the neutron. Single π^0 and η-photoproduction off a transversally polarized D-butanol target has been measured with circularly polarized bremsstrahlung photons generated by the MAMI-C electron microtron. With the nearly 4π acceptance of the combined Crystal Ball/TAPS setup the double polarization observable F and the target asymmetry T can be extracted for the first time for polarized, quasi-free neutrons over a wide energy and angular range.

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