

Meson Investigations by the MAMI A2 Collaboration

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Collaboration

A2

Abstract content

The A2 Collaboration has endeavored to improve the understanding of the structure of mesons and nucleons by studying the photoproduction of the former off of the latter. These studies were performed in the A2 hall at the Mainz Microtron (MAMI), where tagged photons, unpolarized or either linearly or circularly polarized, up to energies of 1.6 GeV impinge upon proton or deuteron targets, also either unpolarized or polarized, or a range of other targets. Beyond looking at just the cross section, various polarization observables are accessible with the inclusion of these polarized initial states. The resulting photoproduced mesons are detected in the nearly 4π steradian system composed of the Crystal Ball and TAPS detectors. The combination of the Bremsstrahlung distribution of photon energies from the selectable initial electron beam energy has provided the ability to investigate the excitation spectrum of the nucleon down to the thresholds of the η and π mesons, among others. This talk will give an overview of the studies that have been performed and those that are planned for the future.

Primary author(s) : MARTEL, Philippe (Johannes Gutenberg-Universität Mainz)

Presenter(s) : MARTEL, Philippe (Johannes Gutenberg-Universität Mainz)

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