

Unpolarized and polarized elementary kaon electroproduction cross sections measured at MAMI

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Present and future research into the electroproduction of kaons plays an important role at Mainz Microtron MAMI. With the KAOS spectrometer employed for kaon detection in the multi-spectrometer facility, cross section measurements of the exclusive $p(e, e'K^+)\Lambda, \Sigma^0$ reactions at low momentum transfers have been performed [1].

Isobar and Regge-plus-resonance models are compared with the data. These measurements have clearly discriminated between effective Lagrangian models for photo- and electroproduction of strangeness.

New experiments with polarized beam at very low Q^2 are addressing the imaginary part of the longitudinal-transverse response in this process, that can be separated by flipping the electron helicity [2].

These studies are important for the understanding of basic coupling constants in the isobar models and the electromagnetic form factors of the hadrons and their resonances involved in the process.

[1] P. Achenbach et al. (A1 Collaboration), Eur. Phys. J. A48 (2012) 14.

[2] P. Achenbach et al. (A1 Collaboration), Nucl. Phys. A. (2012), doi:10.1016/j.nuclphysa.2012.01.008

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