

Measurement of polarisation transfer in hyperon photoproduction near threshold

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The photoproduction of mesons containing strange quarks is an important test of QCD based chiral perturbation theories and will be important in the study of nucleon excited states with strong branching ratios to strange particles. The first accurate measurement of the process near threshold (photon energies of 0.9 to 1.4 GeV) is being led by the Edinburgh group using the Glasgow photon tagger at the recently upgraded Mainz Microtron (MAMI) facility in Mainz, Germany.

The Crystal Ball detector was used to measure the photoproduced meson and hyperon for the reaction: $\gamma p \rightarrow K^+ \Lambda$. The angular distribution of the lambda decay products was used to deduce the spin transfer from the circularly polarised photon. The measurement pioneers a new technique for detecting strange mesons which removes the need for expensive magnetic field and tracking systems and will have applications to segmented calorimeter detector systems elsewhere.

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