

$K^0\Sigma^0$ photoproduction at the BGO-OD experiment

Thursday, 13 June 2019 18:00 (20 minutes)

The BGO-OD experiment at the ELSA accelerator facility uses an energy tagged bremsstrahlung photon beam to investigate the excitation structure of the nucleon in meson photoproduction.

The setup with a BGO calorimeter surrounding the target and an open dipole spectrometer covering the forward region is ideally suited for investigating low momentum transfer processes, in particular in strangeness photoproduction.

The associated photoproduction of K_S^0 and hyperons is essential to understand the role of K^* exchange mechanisms.

A cusp-like structure observed in the $\gamma p \rightarrow K_S^0 \Sigma^+$ reaction at the K^* threshold is described by models including dynamically generated resonances from vector meson-baryon interactions.

Such interactions are predicted to give a peak like structure in $K_S^0 \Sigma^0$ photoproduction off the neutron.

This talk presents a preliminary analysis of the reaction $\gamma n \rightarrow K_S^0 \Sigma^0$ from a new deuterium target dataset taken in 2018.

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