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$K^0\Sigma^0$ 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 exitation
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^0_S and hyperons is essential to understand the role of K^* exchange mechanisms.
A cusp-like structure observed in the $\gamma p \rightarrow K^0_S\Sigma^+$ 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 $K^0_S\Sigma^0$ photoproduction off the neutron.

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

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