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## The study of unconventional baryon structure in the light quark sector with the BGOOD experiment

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The existence of exotic multi-quark states beyond the conventional valence three quark and quark-antiquark systems has been unambiguously confirmed in the heavy quark sectors. Such states could manifest as single colour bound objects, or evolve from meson-baryon and meson-meson interactions, creating molecular like systems and re-scattering effects near production thresholds. Equivalent structures may be evidenced in the light,  $uds$  sector. The BGOOD photoproduction experiment at ELSA is ideal to study spatially extended, molecular-like structure which may manifest in reaction mechanisms. BGOOD is comprised of a central calorimeter for neutral meson momentum reconstruction and complemented by a magnetic spectrometer in forward directions for charged particle identification.

Our published results in the strangeness sector may suggest a dominant role of meson-baryon dynamics which has an equivalence to the  $P_C$  states in the charmed sector. This includes structure in  $K^0\Sigma^0$  and  $K^+(\Lambda(1405) \rightarrow \pi^0\Sigma^0)$  photoproduction at the  $K^*Y$  thresholds having a direct analogue to the  $P_C(4457)$  at the  $\Sigma_C\bar{D}^*$  threshold.

In the non-strange baryon-baryon sector, coherent meson photoproduction off the deuteron enables access to proposed dibaryon states, including the recently discovered candidate,  $d^*(2380)$ . Our measured differential cross sections at forward angles challenge conventional descriptions of coherent photoproduction, which should be suppressed due to the large momentum transferred to the deuteron.

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### session

B. Hadron Spectroscopy

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