

Multi-meson photoproduction off the proton - recent results from the CBELSA/TAPS experiment

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A good understanding of the spectrum and the properties of baryon resonances requires a detailed study of the excited states and their decays. To extract contributing resonances from data, cross sections and polarization observables must be determined and further investigated by partial wave analysis.

Multi-meson final states are particularly important at high energies, where still resonances are predicted which remained so far unobserved. They also allow the interesting investigation of sequential decay chains, where a high mass resonance decays via an intermediate excited state down into the ground state.

The Crystal Barrel/TAPS experiment is ideally suited to measure the photoproduction of neutral mesons decaying into photons due to its good energy resolution, high detection efficiency for photons, and the nearly complete solid angle coverage. A longitudinally or transversely polarized target and a linearly or circularly polarized photon beam allow extensive measurements of polarization observables.

Recent results are presented, giving a particular emphasis to $\gamma p \rightarrow p\pi^0\pi^0$.

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