

Determination of the polarization observables T,P and H in the reaction $\gamma p \rightarrow p\pi^0$

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It is experimentally and theoretically challenging to determine the exact number of excited nucleon states and their properties, since the short lifetime of these excited states leads to strongly overlapping resonances. Using a polarized beam, a polarized target or using the polarization of the recoil nucleon helps to measure single or double polarization observables, that are needed for an unambiguous partial wave analysis solution.

The CBELSA/TAPS experiment in Bonn provides a polarized photon beam as well as a longitudinally or transversely polarized target, allowing for the determination of single and double polarization observables. The Crystal Barrel (CB) calorimeter, together with the MiniTAPS calorimeter in forward direction, give the opportunity for close to 4π coverage for the measurements.

This talk will present preliminary results of the determination of the polarization observables T, P and H, for energies between 600MeV and 3200MeV, using data collected after the recent upgrade of the CB calorimeters readout electronics and these results are compared to previous data and model predictions.

Parallel Session

Hadron Spectroscopy

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