# Measurement of the G Double Polarisation Observable in Pion Photoproduction

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Accurate measurements of double-polarisation observables over a wide kinematic range are crucial for minimising the errors in the extraction of reaction amplitudes in scalar-meson photoproduction. There is a current world effort at modern tagged-photon facilities to measure a "complete set" of observables amongst the 16 accessible. This programme will significantly reduce model dependencies in the extraction of the nucleon excitation spectrum from experimental data. There are many nucleon excited states predicted by recent Lattice-QCD calculations and by quark models which are not observed experimentally. It is possible that the current world data set in meson photoproduction is not sufficiently comprehensive to achieve the sensitivity required to disentangle the broad overlapping excited states. Alternatively it may be found that the resonances do not exist in nature, providing important information about the degrees of freedom in the nucleon and non-perturbative QCD.

The g9a experiment using the CLAS detector in Hall B of Jefferson Lab will measure double-polarisation observables using a polarised energy-tagged photon beam in conjunction with the frozen spin target, FROST. In my talk I will describe the extraction of the "G" double polarisation observable in the single pion photoproduction for photon energies from 730-2300 MeV.