Investigation of the Hadronic Decay $\eta \to \pi^+\pi^-\pi^0$ with CLAS

The amplitude of the isospin violating decay $\eta \to \pi^+\pi^-\pi^0$ is sensitive to the ratio Q of the light quark masses. This decay amplitude is accessible via a Dalitz Plot analysis, resulting in a set of parameters which can be compared to theoretical predictions. The latest measurements on those parameters have been performed by the KLOE and the WASA-at-COSY experiment. The results of both experiments are consistent with each other, but show discrepancies to recent theoretical calculations. A different approach is given by a partial wave analysis which has been performed on the WASA-at-COSY data set and lead to a direct determination of Q.
The goal of this analysis is to determine the Dalitz Plot parameters for the decay $\eta \to \pi^+\pi^-\pi^0$ and compare them to existing results. Additionally, a partial wave analysis shall be performed.
The decay mode $\eta \to \pi^+\pi^-\pi^0$ has been measured with the large acceptance spectrometer CLAS at the Jefferson Laboratory. The η-mesons are produced via the photoproduction reaction $\gamma p \to p\eta$.
This talk will give an overview about the current status of the analysis of the CLAS g12 data set with respect to the decay $\eta \to \pi^+\pi^-\pi^0$.