

Abstract

Photo-production experiments with the CEBAF Large Acceptance Spectrometer (CLAS) at the Thomas Jefferson National Laboratory produce data sets with unprecedented statistics of light mesons. With these data sets, measurements of transition form factors for η , ω , and η' via conversion decays can be performed using a line shape analysis on the invariant mass of the final state dileptons. Tests of fundamental symmetries and information on the light quark mass difference can be performed using a Dalitz plot analysis of the meson decay. In addition, the data allows for a search for dark matter, such as the heavy photon via conversion decays of light mesons and physics beyond the Standard Model can be searched for via invisible decays of η mesons. An overview of the first results and future prospects will be given.