Contribution ID: **340** Type: **Oral Presentation**

A RICH Detector for CLAS12 Spectrometer

Saturday 11 June 2011 09:45 (20 minutes)

The upgrade of the Jefferson Lab accelerator to 12 GeV electron beam energy, combined with that of the CEBAF Large Acceptance Spectrometer (CLAS12) located in Hall B, will provide the unique combination of wide kinematical coverage, high beam intensity (luminosity), high energy, high polarization, and advanced detection capabilities required to study Quantum Chromodynamics (QCD) in greater details. A Ring Imaging Cherenkov (RICH) will greatly enhance CLAS12 particle identification capabilities by providing clean separation between pions, kaons and protons over a momentum range from 2 to 10 GeV/c. A detailed simulation of a preliminary design of the RICH detector for CLAS12 using GEANT-4 Monte-Carlo will be presented. A reconstruction algorithm based on a likelihood approach will be discussed.

Author: Dr EL ALAOUI, Ahmed (Argonne National Laboratory)

Co-authors: Dr CISBANI, Evaristo (ISS and INFN Roma); Dr HAFIDI, Kawtar (Argonne National Laboratory); Dr PAPPALARDO, Luciano (INFN Ferrara); Dr CONTALBRIGO, Marco (INFN Ferrara); Dr UNGARO, Maurizio (University of Connecticut); Dr BALTZELL, Nathan (Argonne National Laboratory); Mr HARISSON, Nathan (University of Connecticut); Dr ROSSI, Patrizia (INFN Frascati)

Presenter: Dr EL ALAOUI, Ahmed (Argonne National Laboratory)

Session Classification: Photon Detectors

Track Classification: Photon Detectors