Studies of partonic distributions using semi-inclusive production of Kaons

FATIHA BENMOKHTAR, Duquesne University, Pittsburgh, PA — Measurements towards the studies of partonic distributions using semi-inclusive production of Kaons will be performed in Hall B of Jefferson lab. Multiplicities for several hadron species ($\pi^+$, $\pi^-$, $\pi^0$, $K^+$, $K^-$, $K^0_s$) using both hydrogen and deuterium targets will be extracted. The goal is the control of the fragmentation functions used in the extraction of the individual quark and antiquark contributions to the nucleon spin. In addition, the shape of the strange parton distribution functions for several $z$ and $Q^2$ bins with three independent measurements ($\pi^+ + \pi^-$, $K^+ + K^-$ and $K^0_s$) will be extracted. A good charged Kaon identification for the whole momentum range and to enhance the existing particle identification, a RICH detector for CLAS12 is under construction.