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Measurement of multiplicities of charged hadrons, pions and kaons in DIS at COMPASS

Precise measurements of multiplicities of charged hadrons, pions and kaons in deep inelastic scattering were performed. The results are presented in three-dimensional bins of the Bjorken scaling variable x, the relative virtual-photon energy y, and the fraction z of the virtual-photon energy carried by the produced hadron. The data were obtained by the COMPASS Collaboration by scattering 160 GeV muons off an isoscalar 6LiD target. A leading-order pQCD analysis was performed using the pion multiplicity results to extract quark fragmentation functions into pions. The results for the sum of the z-integrated multiplicities for pions and for kaons, differ from earlier results from the HERMES experiment. The results from the sum of the z-integrated K+ and K− multiplicities at high x point to a value of the non-strange quark fragmentation function larger than obtained by the earlier DSS fit. Preliminary results on the kaon multiplicity ratio K+/K- at high z will also be shown.

Primary author: МИТРОФАНОВ, Николай (Олегович)

Presenter: МИТРОФАНОВ, Николай (Олегович)

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