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Pion and Kaon multiplicities from muon-deuteron deep inelastic scattering at COMPASS

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Fragmentation functions, which turn partons into non-perturbative hadronic bound states in hard-scattering reactions, play a very important role in our understanding of the proton structure. Currently, our knowledge of fragmentation functions originates mainly from existing global QCD analyses which are mostly based on inclusive measurements in electron-positron annihilation process. While the latter mainly fixes the flavour singlet combinations of fragmentation functions, semi-inclusive deep inelastic scattering gives access to the flavour structure of FFs via hadron multiplicities. The COMPASS collaboration has recently measured pion and kaon multiplicities, in different combinations of bins in x , z and Q^2 , using 160 GeV/c muons off deuteron target. This measurement makes an experimental contribution for a deeper understanding on the fragmentation process.

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