

# Charged-hadron lepto-production off unpolarized protons and deuterons at HERMES

TBA, for the HERMES Collaboration

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The HERMES Collaboration has measured charge-separated pion and kaon multiplicities in semi-inclusive deep-inelastic scattering using a 27.6 GeV electron or positron beam scattering off a hydrogen or deuterium target. The results are presented as functions of the Bjorken variable  $x$ , the negative squared four-momentum transfer  $Q^2$ , the hadron fractional energy, and the hadron's transverse momentum. These data will be very useful to understand the quark-fragmentation process in deep-inelastic hadron electro-production and will serve as crucial input in the understanding of charge/flavour separated fragmentation functions. Furthermore, it provides important information on the transverse-momentum dependence of hadron production. Using the multiplicity data base, the distribution of strange quarks has been investigated at leading order in QCD. Limits on using multiplicities for making statements about flavor-separated quark distributions are also discussed.