

INVESTIGATION OF THE INFLUENCE OF NUCLEAR MATTER ON HARD LEPTON-NUCLEI AND HADRON-NUCLEI INTERACTIONS USING MONTE CARLO GENERATOR HARDPING

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Hadron and lepton production in hard interaction of high-energy particles with nuclei are considered in context of developing of Monte Carlo generator HARDPING (Hard Probe Interaction Generator). Such effects as energy losses and multiple re-scattering initial and produced hadrons and their constituents are taken into account. These effects are implemented in current version of generator HARDPING.

Data of experiments HERMES [1] (see Fig. 1) on hadron production in lepton-nuclei collisions and E866 [2] on muon pair production in proton-nuclei collisions were described with current version of generator HARDPING.

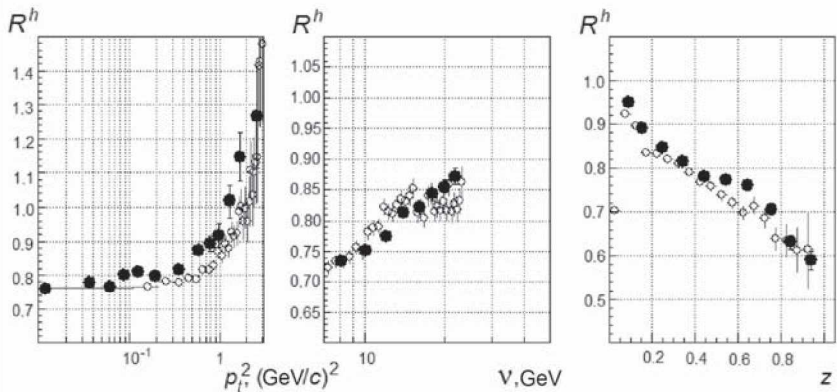


Fig. 1. Multiplicity ratio (R^h) of charged hadrons for krypton (Kr) and deuteron (D) targets as a function of p_T^2 , as a function of virtual photon energy (ν) and as a function of z_h at positron beam energy 27.6 GeV. The solid points correspond to HERMES data [1] and the open points are obtained by HARDPING.

1. A.Airapetian *et al.* // Phys. Lett. B. 2003. V.577. P.37.

2. M.A.Vasilev *et al.* // Phys. Rev. Lett. 1999. V.83. P.2304 [hep-ex/9906010].