

Determination of Strange Sea Distributions from $bm\nu N$ Deep Inelastic Scattering

We present an analysis of the nucleon strange sea extracted from a global Parton Distribution Function fit including the neutrino and anti-neutrino dimuon data by the CCFR and NuTeV collaborations, the inclusive charged lepton-nucleon Deep Inelastic Scattering and Drell-Yan data. The (anti-)neutrino induced dimuon analysis is constrained by the semi-leptonic charmed-hadron branching ratio $B_\mu = (8.8 \pm 0.5)\%$, determined from the inclusive charmed hadron measurements performed by the FNAL-E531 and CHORUS neutrino emulsion experiments.

Our analysis yields a strange sea suppression factor $\kappa(20 \text{ GeV}^2) = 0.62 \pm 0.04(\text{exp.}) \pm 0.03(\text{QCD})$, the most precise value available, an x -distribution of total strange sea that is slightly softer than the non-strange sea, and an asymmetry between strange and anti-strange quark distributions consistent with zero (integrated over x it is equal to $S^-(20 \text{ GeV}^2) = 0.0013 \pm 0.0009(\text{exp.}) \pm 0.0002(\text{QCD})$).

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