

Pion structure function and SU(2) flavor asymmetry

Thursday, 2 June 2016 16:00 (30 minutes)

We refine the computation of the $\bar{d} - \bar{u}$ flavor asymmetry in the proton sea with a complementary effort to reveal the dynamics of pion exchange in high-energy processes. In particular, we discuss the efficacy of pion exchange models to simultaneously describe leading neutron electroproduction at HERA along with the $\bar{d} - \bar{u}$ flavor asymmetry in the proton. The analysis disfavors several models of the pion flux used in the literature, and yields an improved extraction of the pion structure function and its uncertainties at parton momentum fractions in the pion of $4 \times 10^{-4} < x < 0.05$ at a scale of $Q^2 = 10 \text{ GeV}^2$. Based on the fit results, we also address a possible estimate for leading proton structure functions in upcoming tagged deep-inelastic scattering experiments at Jefferson Lab on the deuteron with forward protons.

Presenter: JI, Chueng-Ryong

Session Classification: Talks