

# XXIV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS16)



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## Pion structure function from leading neutron electroproduction and SU(2) flavor asymmetry

*Wednesday, April 13, 2016 12:40 PM (15 minutes)*

We examine the efficacy of pion exchange models to simultaneously describe leading neutron electroproduction at HERA and the  $d\text{-bar} - u\text{-bar}$  flavor asymmetry in the proton. A detailed  $\chi^2$  analysis of the ZEUS and H1 cross sections, when combined with constraints on the pion flux from Drell-Yan data, allows regions of applicability of one-pion exchange to be delineated. 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  $4 \times 10^{-4} < x_{\pi} < 0.05$  at a scale of  $Q^2=10 \text{ GeV}^2$ . Based on the fit results, we provide estimates for leading proton structure functions in upcoming tagged deep-inelastic scattering experiments at Jefferson Lab on the deuteron with forward protons.

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