

Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Extracting the Proton Longitudinal Structure Function Moments from World Data PETER MONAGHAN, Hampton University — We present an extraction of the lowest three moments of the proton longitudinal structure function F_L from available world data between $Q^2 = 0.75$ and 45.0 $(\text{GeV}/c)^2$. This analysis utilizes new data from DESY at low Bjorken x and from Jefferson Lab at high x , allowing the moments to be determined relatively free from uncertainties due to extrapolations into unmeasured regions. The moments are compared with several parton distribution function parameterizations, which tend to underestimate the higher order moments. This suggests either the presence of significant higher twist effects in F_L or a larger gluon distribution at high x .

Peter Monaghan
Hampton University

Date submitted: 06 Jan 2012

Electronic form version 1.4