

# XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



Contribution ID: 447

Type: **Contributed Talk**

## Simultaneous Extraction of Spin-Dependent and Spin-Averaged PDFs from W Production Data

*Wednesday, 14 April 2021 13:27 (18 minutes)*

We present a new global QCD analysis of spin-averaged and spin-dependent PDFs from high- $x$  DIS and  $W$  production data using a Monte Carlo approach. This analysis includes the first extraction of the helicity-dependent antiquark asymmetry  $\Delta\bar{u} - \Delta\bar{d}$  using  $W$  production data in  $\bar{p}p$  collisions at RHIC. We also focus on the high- $x$ , low- $W$  region, where effects from power corrections, such as target mass corrections (TMCs) and higher twists, are particularly important. We quantify the effects on the extracted PDFs from various theoretical treatments of the power corrections and cuts on the experimental kinematics.

**Primary authors:** COCUZZA, Christopher (Temple University); Dr ETHIER, Jacob (Nikhef); Mr MELNITCHOUK, Wally (Jefferson Lab); METZ, Andreas (Temple University); Mr SATO-GONZALEZ, Nobuo (Jefferson Lab)

**Presenter:** COCUZZA, Christopher (Temple University)

**Session Classification:** Spin Physics

**Track Classification:** Spin Physics