Contribution ID: **114** Type: **Oral**

Fragmentation Functions of Charged Hadrons at NNLO and Constraints on the Proton PDFs

We present the first global analysis of fragmentation functions (FFs) for light charged hadrons ($\pi^{\pm}$, $K^{\pm}$) at full next-to-next-to-leading order in QCD, incorporating world data from both single-inclusive electron-positron annihilation and semi-inclusive deep-inelastic scattering. The collinear factorization has been tested with low-momentum-transfer data and has demonstrated success at high hadron momenta. Additionally, we study the impact of current global data on hadron production to the parton distribution functions (PDFs), and find they favor a reduced asymmetry in the strange (anti)quark PDFs, as compared to the asymmetry predicted by state-of-the-art PDFs derived from inclusive data.

Primary authors: Dr SHEN, XiaoMin (Institute of Modern Physics (IMP), CAS); GAO, Jun (Shanghai Jiao Tong University); XING, Hongxi (South China Normal University); ZHAO, Yuxiang (University of Science and Technology of China (USTC)); ZHOU, Bin (Peking University)

Presenter: Dr SHEN, XiaoMin (Institute of Modern Physics (IMP), CAS)

Session Classification: Parallel

Track Classification: Nucleon helicity structure