

Deep Inelastic Scattering 2025



Contribution ID: 113

Type: **not specified**

Parton density and fragmentation functions in QED

Wednesday 26 March 2025 16:00 (22 minutes)

Perturbative solutions for unpolarized QED parton distribution and fragmentation functions are presented explicitly in the next-to-leading logarithmic approximation. The scheme of iterative solution of QED evolution equations is described in detail. Applications of the QED PDFs and fragmentation functions for calculation of higher-order radiative corrections to processes of electron-positron annihilation and muon decay are given. Effects of scheme and factorization scale choice are analyzed.

The talk is based on

- [1] A.B. Arbuzov, U.E. Voznaya, J. Phys. G 50 (2023) 12, 125004;
 - [2] A.B. Arbuzov, U.E. Voznaya, Phys. Rev. D 109 (2024) 5, 053001;
 - [3] A.B. Arbuzov, U.E. Voznaya, Phys. Rev. D 109 (2024) 11, 113002;
- and some recent developments in this direction.

Author: ARBUZOV, Andrej (Joint Institute for Nuclear Research)

Co-author: Mrs VOZNAYA, Uliana (Joint Institute for Nuclear Research)

Presenter: ARBUZOV, Andrej (Joint Institute for Nuclear Research)

Session Classification: WG1/3: Joint session (WG1/3: Structure Functions and Parton Densities + Electroweak Physics and Beyond the Standard Model)

Track Classification: Structure Functions and Parton Densities