

CTEQ Fall meeting 2024



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Fast NNLO Implementation of the approximate ACOT scheme for DIS

Thursday 21 November 2024 16:30 (20 minutes)

Mass-dependent quark contributions are of great importance to DIS processes. The simplified-ACOT- χ scheme includes these effects over a wide range of momentum transfers up to next-to-leading order in QCD. In recent years an improvement in the case of neutral current DIS has been achieved by using zero-mass contributions up to next-to-next-to-leading order (NNLO) with massive phase-space constraints. In this talk, we extend this approach to the case of charged current DIS and provide an implementation in the open-source code APFEL++. The increased precision will be valuable for understanding current and future neutrino experiments, the Electron-Ion-Collider and the studies of partonic substructure of hadrons and nuclei. A highly efficient implementation using gridding techniques extends the applicability of the code to the determination of parton distribution functions (PDFs).

Would you be interested in giving a 5-minutes flash talk?

Yes

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