Contribution ID: **17** Type: **not specified**

NLO DGLAP splitting kernels for color non-singlet DPDs

Wednesday 2 November 2022 15:50 (15 minutes)

The two partons inside a double parton distributions (DPDs) are correlated in many of their degrees of freedom. In color space, the DPD can be projected onto color singlet and color non-singlet components, where the latter describe color correlations. Color singlet DGLAP evolution of collinear DPDs (DPDFs) uses the exact same splitting kernels as the ones for ordinary parton distribution functions (PDFs) known from single parton scattering. For color non-singlet representations, however, all splitting graphs contain additional projectors on the respective representation. For this reason, their form was unknown beyond LO until now.

In this talk, I will present for the first time the full splitting kernels for unpolarized, longitudinal and quark transversity DPDFs at NLO. They were obtained using two different and independent methods. The first one is based on graph-by-graph results for PDF splitting kernels, the second one utilizes the matching formula for transverse momentum dependent matrix elements. As a by-product, the NLO anomalous dimension for the DPDF Collins-Soper kernel was also obtained for the first time.

Primary authors: VLADIMIROV, Alexey (Regensburg University); FABRY, Florian (DESY); DIEHL, Markus (DESY)

Presenter: FABRY, Florian (DESY)

Session Classification: Parallel Session A: TMD theory (p3)