

## SCET Workshop 2022



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# Next-to-next-to-leading order parton distribution functions using LCPT

*Thursday 21 April 2022 10:00 (20 minutes)*

We describe the perturbative calculation of the transverse parton distribution functions in the quark-quark channel up to next-to-next-to-leading order, based on the technique of light-cone perturbation theory. The computation consists of separate computation of Feynman diagrams, demonstrating the cancellation of both UV and IR light-cone divergences. The result serves as a check for a previous calculation (1403.6451) by using a different approach, avoiding the use of harmonic polylogarithms. In addition, the new approach allows an improved set of underlying assumptions, thereby including an additional set of terms which were previously neglected.

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**Session Classification:** NNNLL and NNLO