

A journey through the heavy-light Sudakov universality class in LaMET: from quasi-TMDPDF at large P_z to quasi-PDFmatching kernel in the threshold limit

Thursday, June 22, 2023 9:00 AM (30 minutes)

In this talk we will provide a survey of three fundamental objects: quasi-TMDPDF, quasi-LFWF amplitudes and (quark non-singlet) quasi-PDF matching kernel that appears naturally in the application of LaMET to lattice calculation of various parton distribution functions. We demonstrate how TMD factorization or threshold factorization works for the corresponding objects with a common perturbative hard kernel: the universal heavy-light Sudakov form factor. We show how the universal TMDPDF/LFWF amplitudes can be extracted by combining factorization theorems for the quasi-TMD quantities with an auxiliary space-like form factor. Finally, we explain how the NNLO heavy-light Sudakov form factor can be extracted through the threshold limit of quasi-PDF matching kernel.

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