

Heavy-quark production with kt -factorization: The importance of the sea-quark distribution

Tuesday, November 26, 2019 3:00 PM (20 minutes)

Heavy-quark production is of first importance at the LHC, allowing to test factorization formulas, and to probe cold and hot nuclear matter. In the first part of the presentation, I will quickly review heavy-quark production in the case of the collinear factorization, making some useful remarks for the second part of the talk. Then, I will switch to heavy-quark production with kt -factorization. The main goal is to discuss the fact that present calculations take into account only the gluon-gluon contribution. I will show that, in fact, in the case of a variable-flavor-number scheme (commonly used at the LHC), the main contribution is given by the $Qg \rightarrow Qg$ contribution. The most interesting part is the answer to the following question: Why current studies are in agreement with data if they neglect the main contribution? We will see that the answer is not unique. (This work has been published in PRD 99, 074006).

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