



Contribution ID: 69

Type: not specified

Small- x resummation in coefficient function for differential heavy-quarks production and next-to-leading logarithms

Monday 26 September 2022 16:40 (20 minutes)

Precise theoretical predictions of QCD scattering and radiation processes are fundamental building blocks for the LHC precision program. Fixed-order computations must be supplemented by all-order resummations where logarithmically-enhanced contributions become large. Among those, small- x logarithms are enhanced when the ratio, $x = \frac{Q^2}{S}$ between the typical energy scale of a scattering process Q and the total centre of mass energy available S is small.

These corrections are important for several processes within the kinematical range of the LHC, including heavy flavour production, Higgs production in gluon fusion and Drell-Yan. This talk will discuss recent developments on small- x resummation in differential cross sections in rapidity, transverse momentum and invariant mass and their application to heavy flavour production at the LHC and Parton Distribution Function determination. Additionally, an extension of the resummation of next-to-leading logarithms for inclusive cross sections will be presented, using a Higgs-induced Deep Inelastic Scattering as an explicit case study.

Presenters: SILVETTI, Federico (INFN - National Institute for Nuclear Physics); SILVETTI, Federico (Sapienza Universita e INFN, Roma I (IT))

Session Classification: Low x , PDFs and hadronic final states

Track Classification: Low x , PDFs and hadronic final states