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EINLADUNG

im Rahmen des Teilchenphysikseminars

zum Vortrag

von

Jonathan Richard Gaunt

CERN

über

„Precision QCD for the LHC: a multifaceted approach“

Abstract:
A precise description of the QCD dynamics of proton-proton collisions at the LHC is needed to fully exploit the physics potential of this machine. The standard tool to make predictions at the LHC is the collinear factorisation formula, involving parton densities and perturbatively-computable partonic cross sections. One direction to improve precision is to compute the short-distance scattering cross sections at higher perturbative orders in QCD, and, for multiscale processes, to sum up large logarithms of the ratios of scales to successively higher precision. However, the level of precision achieved by the experiments necessitates that we also explore effects beyond the current factorisation paradigm. Of particular importance is to consider the effect of additional partonic interactions accompanying the 'primary' interaction: either a small number of additional hard interactions, or multiple additional low-energy collisions and rescatterings mediated by so-called Glauber gluons. I outline my contributions in all of these directions and suggest interesting directions for future research.

Zeit: Donnerstag**,** 05.12.2019 **15:15**

Ort: Kleiner Seminarraum, Boltzmanngasse 5, 5. Stock

gez**.:** A. Hoang, S. Plätzer, M. Procura