

Vorlesungsankündigung Bernhard-Hess-Dozentur 2024

Es spricht: **Dr. Ekta Chaubey**
Universität Bonn

über: **"Taming massive Feynman integrals
for precision physics"**

Abstract

As the Large Hadron Collider accumulates data, the significance of precise predictions by particle physicists becomes increasingly crucial. The computation of scattering amplitudes serves as an important link between theoretical predictions and experimental measurements. To meet the increasing demand for precision in theoretical computations, the inclusion of contributions from massive particles becomes imperative. However, the inclusion of massive corrections into the analytical computations makes the computation of the contributing Feynman integrals extremely challenging and often calls for a deep mathematical understanding of their analytic structure. For instance, with the inclusion of massive particles, we often need to go beyond the simplest class of functions, commonly referred to as multiple polylogarithms, and incorporate functions corresponding to elliptic curves, thereby linking Feynman integrals with algebraic geometry. During these set of lectures, we will learn about various aspects of multi-loop computations as well as about modern techniques for handling massive Feynman integrals required for precision physics.

Zeit:

Dienstag, 04.06.2024	15.15 Uhr
Mittwoch, 05.06.2024	15.15 Uhr
Donnerstag, 06.06.2024	14.15 Uhr
Freitag, 07.06.2024	14.15 Uhr

Ort: PHY 5.1.34A