

Ankündigung für das Wintersemester 2024

Vorlesung mit Übungen

Spezielle Kapitel der Quantenfeldtheorie: Asymptotic expansions

Dr. Vladyslav Shtabovenko, Prof. Dr. Guido Bell

This lecture provides an introduction to the methods of asymptotic expansions, an important tool for the evaluation of complicated multiscale Feynman integrals that admit an expansion in ratios of relevant scales such as masses and scalar products of external momenta. It constitutes an invaluable tool for obtaining precise theoretical predictions for a wide range of particle physics processes, including those being measured at the Large Hadron Collider (LHC) at CERN and future particle accelerators.

The course will be held in English!

Unisono: 4PHYMA45.1



Outline:

- Method of regions
- Mellin-Barnes integrals
- Padé approximants

Schedule:

- Lecture duration: 7.10.2024 - 20.11.2024 (half semester)
- Lecture + exercises (alternating) every Monday 14:00-16:00 at ENC-D120

Prerequisites:

- Basic knowledge of Quantum Field Theory