



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Introduction to Soft-Collinear Effective Theory

2122-86R-IntroSCETH

Titolo

Introduction to Soft-Collinear Effective Theory

Docente(i)

Dott. Matthias Neubert

Lingua

English

Breve descrizione

Short Description:

- I. Motivation
- II. Effective field theory in a nutshell:
- III. Heavy-quark effective theory (HQET):
- IV. Soft-collinear effective theory (SCET):
- V. Properties of the SCET Lagrangian:

- VI. Matching of the 2-jet current:
- VII. The Sudakov form factor in SCET
- VIII. Renormalization-group evolution equations
- IX. Decoupling of ultra-soft gluons
- X. Applications of SCET
- XI. Collinear anomaly
- XII. Drell-Yan production at small transverse momentum

Prerequisites

Introductory course on Quantum Field Theory at the level of Peskin & Schroeder

Textbook and teaching resource

T, Becher, A. Broggio and A. Ferroglia: Introduction to SCET (arXiv:1803.04310)

Handwritten lectures notes (in color) will be distributed during the course.

CFU / Ore

CFU / 20 hours (8 two-hour lectures plus 2 two-hour tutorials)

Periodo di erogazione

May 16 until June 1, four days per week (two days in the third week)
