Announcement for summer term 2025

Collider Physics

Prof. Dr. Guido Bell, Sebastian Edelmann

This lecture provides an introduction to the physics of high-energy colliders with an emphasis on the study of strong-interaction effects. This includes theoretical concepts as the operator product expansion, factorisation and parton branching as well as their application to scattering processes at collider experiments.

Contents:

- Short review of QCD
- e^+e^- annihilation into hadrons
- Event shapes and jet cross sections
- Deep inelastic scattering and the parton model
- Parton distribution functions and DGLAP equations
- Proton-proton collisions and Drell-Yan production
- Monte-Carlo event generation

Time and location:

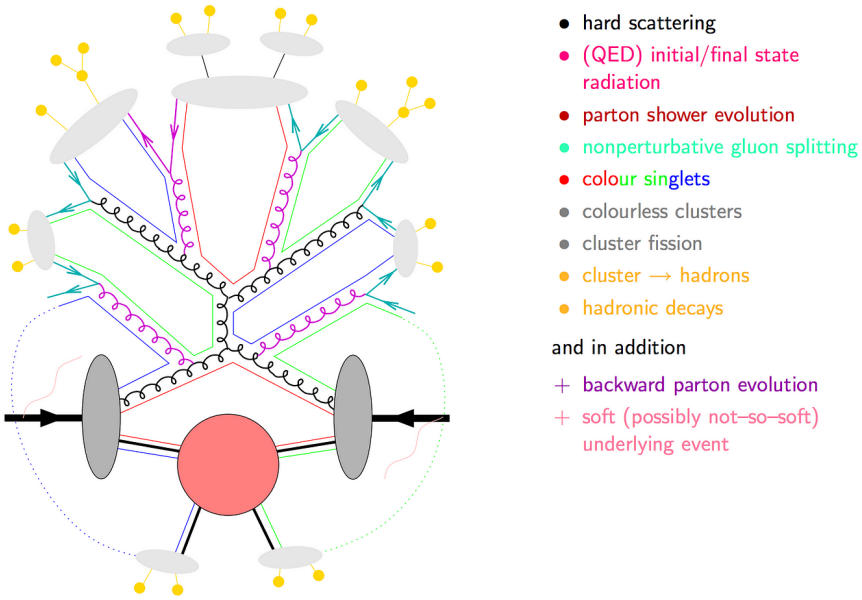
Lecture:

Mon 14:15 – 15:45, ENC-B 127

Lecture/Tutorial:

Thu 12:30 – 14:00, ENC-B 127

A pp event at the LHC: dijet production via $gg \to gg$



The lecture is aimed at students of the Master's program in Physics with focus area Particle Physics. For online participation from Bonn or Dortmund please contact bell@physik.uni-siegen.de before the first lecture.