

University of Antwerp

Introduction to Quantum Chromodynamics

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This lecture course presents an introduction to Quantum Chromodynamics (QCD), the nonabelian gauge theory of the strong interaction. It treats general aspects of the theory and applications to physics at high-energy colliders. The course includes a computational component, developed through sessions of practicals, on the use of Monte Carlo techniques in high-energy physics.

Synopsis

0. Fundamental interactions and gauge field theories
1. The “color” quantum number
2. Quantization
3. Global symmetries
4. Loops and renormalization
5. Parton picture of hard scattering processes