

QFT

Chapter 72: The Feynman Rules for non-Abelian Gauge Theory

Overview

- Same game as always:
 - Write out the Lagrangian
 - Add a gauge-fixing term
 - Figure out the propagator and the vertex factors
 - Add the ghosts for loop calculations
 - Add the quarks for quark interactions
- The next step is normally to calculate the tree-level diagrams
 - Unfortunately, the vertex factors are so complicated that the gluon scattering amplitude has 12,996 terms!
 - We will not do any such calculations until section 81, where we can greatly reduce this labor