

Review of renormalization in standard QFTs (QED and QCD)

1. mass, wave-function and coupling renormalization
2. running couplings and beta functions
3. dimensional regularization
4. one-loop techniques

Lectures 2+3: Renormalization of composite operators

1. operator basis
2. use of the EOMs to eliminate redundant operators
3. operator mixing
4. calculation of anomalous dimensions
5. RGEs and resummation of large logs for Wilson coefficients

Multi-loop techniques

1. integration by parts
2. differential equations method
3. calculation of a two-loop anomalous dimension