Theoretical Physics 6a - SS 2022
Relativistic Quantum Field Theory

Lecturers :
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Website

https://wwwth.kph.uni-mainz.de/theoretische-physik-6a/

Lecture hours

Mo 10:00 - 12:00, Wed 10:00 - 12:00
(Minkowski room)

Overview

1. The Klein-Gordon Field
2. The Dirac Field
3. The Photon Field, Abelian Gauge Theory
4. Interacting Fields and Feynman Diagrams
5. QED processes in lowest order
6. Renormalization of Quantum Electrodynamics
7. QED running coupling at 2-loop level

Literature

1. F. Mandl and G. Shaw
   Quantum Field Theory
   (Wiley, 2010)

2. M.E. Peskin, D.V. Schroeder
   An Introduction to Quantum Field Theory
   (Westview Press, 1995)

3. M. Srednicki
   Quantum Field Theory
   (Cambridge University Press, 2006)

4. Matthew D, Schwartz
   Quantum Field Theory and the Standard Model
   (Cambridge University Press, 2014)