

Theoretische Physik 3

Quantenmechanik

WS 2022/2023

Lecturer :

Prof. Dr. Marc Vanderhaeghen (vandma00@uni-mainz.de)

Main assistant :

Viktoriia Ermolina (vermolin@uni-mainz.de)

Assistants :

Fatma Abbass (fatma.ali.ibrahim.abbass@cern.ch)

Cornelis Mommers (cmommers@uni-mainz.de)

Muhib Omar (momar@uni-mainz.de)

Website

<https://wwwth.kph.uni-mainz.de/theoretische-physik-3-quantenmechanik-4/>

Lecture hours

Mi 12:15 - 14:00 (Minkowski)

Fr 8:15 - 10:00 (Minkowski)

Klausur

22/02/2023

Schedule

- **26/10, 28/10**
wave function, statistical interpretation, probability, normalization, momentum, uncertainty principle, stationary states,
- **02/11, 04/11**
infinite square well, harmonic oscillator
- **09/11, 11/11**
free particle, wave packets, delta function potential
- **16/11, 18/11**
finite square well and applications, WKB approximation
- **23/11, 25/11**
Operator formalism
- **30/11, 02/12, 07/12, 09/12**
Schrödinger's cat and kittens
- **14/12, 16/12**
Schrödinger equation in spherical coordinates (angular solution), angular momentum
- **21/12, 23/12**
spherical potential well, hydrogen atom
- **11/01, 13/01**
spin, EPR paradox, Bell's theorem
- **18/01, 20/01, 25/01**
perturbation theory: time-independent
- **27/01, 01/02**
perturbation theory: time-dependent
- **03/02, 08/02**
quantum computing
- **10/02**
review