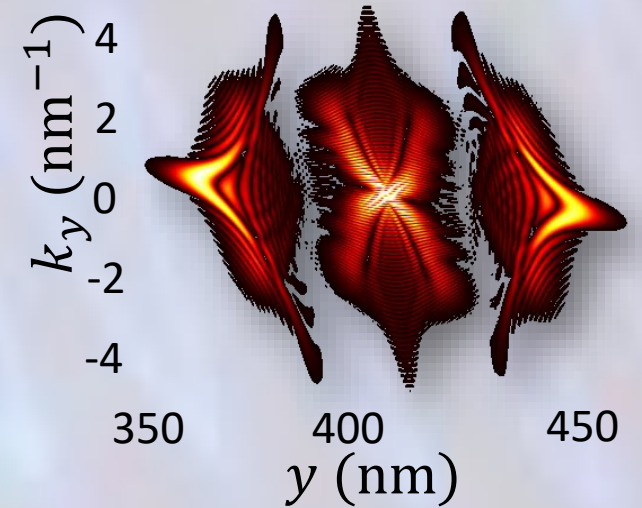


Nano-Optics: From Classical to Quantum



Christoph Lienau

Carl von Ossietzky Universität Oldenburg

Nahid Talebi

Christian Albrechts Universität zu Kiel

[https://lms.uni-](https://lms.uni-kiel.de/url/RepositoryEntry/4215373851/CourseNode/103741237818133)

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Lectures

27.10.2021 ~ 22.02.2022

Wednesdays 10:15h ~ 11:45h

Fridays 10:15h ~ 11:45h

Exercises

Tuesdays 10:15h ~ 11:45h

Room: Leibnizstr. 13, LS 13 60

For those who want to attend this lecture: please send an email to: talebi@physik.uni-kiel.de

Outline

1. Classical light
2. Classical light-matter interaction
3. Semi-classical light-matter interaction. Two-level systems
4. Optical coherence and fluctuations
5. Density matrix formalism
6. Open quantum systems (Decoherence)
7. Evanescent fields
8. Plasmonics
9. Polaritons in van der Waals materials
10. Strong-coupling
11. Ultrafast spectroscopy
12. Nonlinear optics
13. Two-dimensional electronic spectroscopy
14. Electron-based spectroscopy
15. Mixed light-electron spectroscopy
16. Photoemission from nanomaterials
17. Quantum light and quantization of the radiation field
18. Macroscopic quantum electrodynamics
19. Quantum dynamics in nanoscale systems
20. Energy transfer
21. Charge transfer
22. Entanglement in nanoscale systems
23. Quantum light sources
24. Quantum information