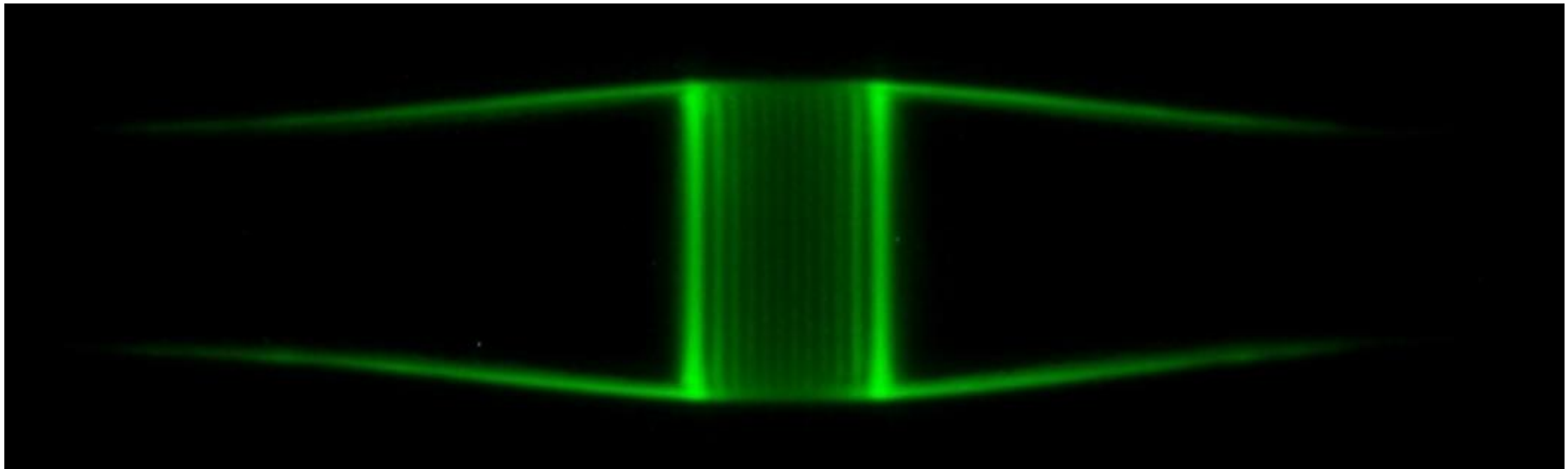


Quantenoptik II



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unter Lehre...

- mündliche Prüfung über den Stoff der Vorlesung

Themenliste:

- Electromagnetically induced transparency
slowing and stopping of light
quantum memories for light
- Laser cooling of atoms
- Trapping of neutral atoms and ions
- Photodetection
coherence, photon-photon correlation functions
- Sources of non-classical light
photon pairs sources + generation of squeezed light
test of quantum mechanics (Bell's inequalities)
- Selected topics from quantum information communication
Suggestions are welcome!

Praktikum Quantenphysik

- Topological phases with neutrons (working at the reactor !)
- Violation of Bell's inequality
- 2-Photon interference
- Precision spectroscopy of atoms
- Build your own HeNe - laser
- Ultra-high Q whispering-gallery-mode resonators (bottle resonator)
- Noise fundamentals

- **Christopher Gerry, Peter Knight – *Introductory Quantum Optics***
(Cambridge University Press)
- **Mark Fox – *Quantum Optics*** (Oxford University Press)
- **Serge Haroche, Jean-Michel Raimond – *Exploring the quantum***
(Oxford University Press)
- **C. Cohen-Tannoudji, J. Dupont-Roc, G. Grynberg – *Atom Photon Interactions***
(Wiley-Interscience)
- **Hans-A. Bachor, Timothy C. Ralph – *A Guide to Experiments in Quantum Optics*** (Wiley-VCH)
- **Rodney Loudon – *The Quantum Theory of Light*** (Oxford University Press)
- **Marlan O. Scully, M. Suhail Zubairy – *Quantum Optics***
(Cambridge University Press)