

Hauptseminar Quantum Mechanics

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Requirements:

- To be present during all presentations
- Test talk a week or so before
- Talk – 40-50 min.
- Write the summary till the end of the semester

Topics

1. The measurement problem in QM – Leplat + Mehmandoost
2. Non-destructive measurements - Ott
3. “Delayed choice” experiments - Theurer
4. Bell inequalities and EPR paradox
5. Aharonov-Bohm effect - Schrodi
6. Quantum cryptography - Senkalla
7. Quantum repeater – Seiler
8. Quantum metrology
9. Atomic clocks – Kneifl
10. Cavity QED with cold atoms - Egetmeyer
11. Non-classical light and single photon emitters - Tratzmiller
12. Quantum computing with linear optics - Hipper
13. Quantum teleportation of photons and atoms - Baumann
14. Leggett-Garg inequalities (temporal Bell inequalities) - Reichart
15. Nano-mechanical systems, Eichelt
16. Optomechanics, Wire