

Advanced Seminar – Winter Term 2017/18

Ultracold Quantum Gases

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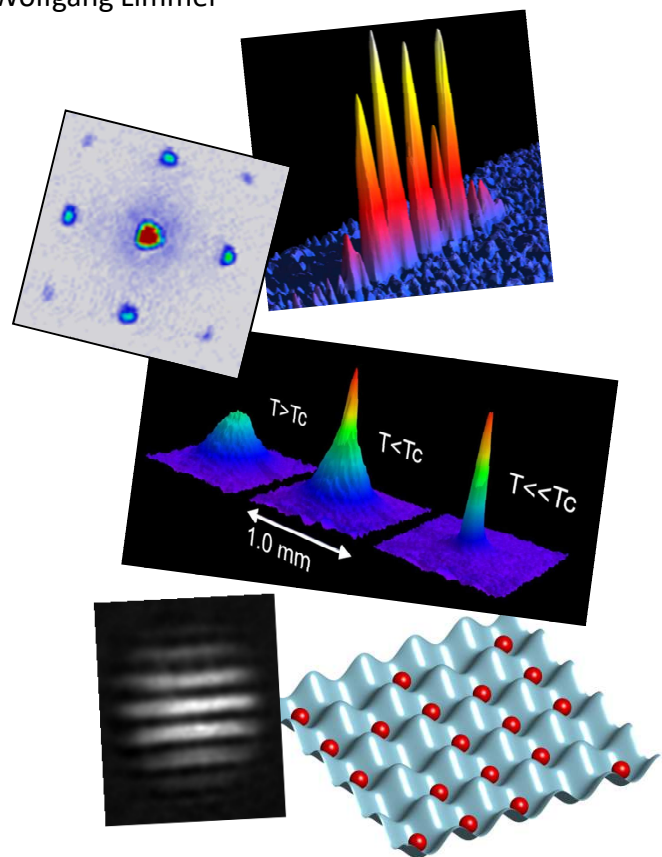
Institute of Quantum Matter

Description:

The seminar addresses both fundamental and advanced topics in the fascinating field of ultracold quantum gases.

The talks are based on a small number of selected publications and are intended to provide a good understanding of the underlying physics.

Enough time is arranged for relaxed and stimulating discussions in order to deepen the acquired knowledge.



Prerequisites:

Profound knowledge in atomic physics and quantum mechanics

Language:

The presentations should be written in English. The spoken language will be German or English, depending on the students' preference and the participation of international students.

List of talks (preliminary):

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| 1. Matter-wave interferometry and gravitational measurements | 7. Ultracold Fermi gases |
| 2. Nonlinear atom optics, 4-wave mixing, and solitons | 8. Quantum cradle |
| 3. Scattering length and Feshbach resonance | 9. Quantum walk |
| 4. Optical lattices and Hubbard model | 10. Rydberg atoms |
| 5. Ultracold molecules | |
| 6. Repulsively bound atom pairs | |

ECTS credits: 4