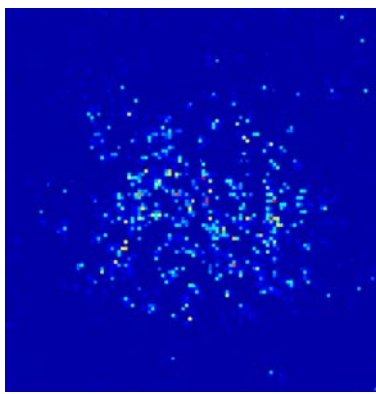
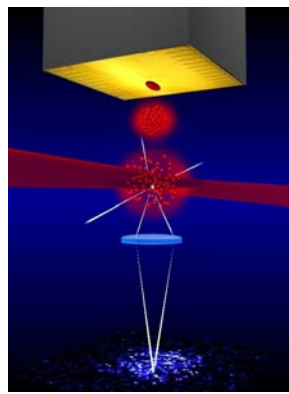


Call for a PhD Student (theory): Correlation in Quantum Systems

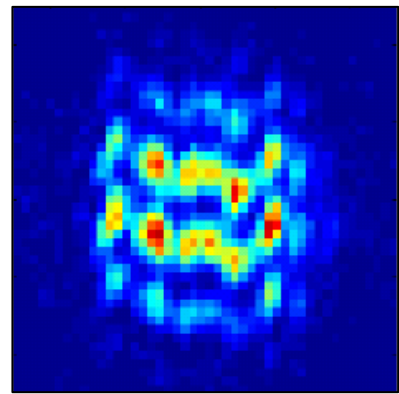
Jörg Schmiedmayer, Armin Scrinzi



200 atoms @ 500nK



single atom camera



interference pattern

We have an opening for a Ph.D. student to study the theory of correlations in degenerate interacting many body quantum systems that arise in present and upcoming experiments with ultra cold gases. The goal of the project is to qualitatively describe the role of correlation in one- and two-dimensional systems, to develop and numerically test useful mathematical measures for it, and define unambiguous signatures of correlation in the experiments. The ultimate goal is to find theoretical tools to extract as much information as possible about the interacting many body system from the measurements.

The work is part of an interdisciplinary project “*Correlation in Quantum Systems*” involving mathematicians, theoretical, and experimental physicists. In this environment, the task of the PhD work is to develop concepts of correlation and put them to use for the analysis of real experiments. The work will be carried out in the quantum optics and atomic physics group at Atominstitut der Österreichischen Universitäten (experiment, www.atomchip.org) and at the Photonics Institute of TU-Wien (theory, eos.photonik.tuwien.ac.at). The candidate will also strongly interact with the Wolfgang Pauli Institut (mathematics, www.wpi.ac.at) and the Institute of Theoretical Physics of the University of Vienna.

We offer a highly dynamic and creative environment where the candidate has a large degree of freedom to explore his or her own ideas. The environment is highly international and collaborates extensively with several other research groups around the world. The candidate will receive extensive research training in the theory of in quantum physics, cold gases, and in simulation. Additionally, a broad range of lectures is offered in the frame of the Graduate School in Complex Quantum Systems (www.coqus.at). We offer the successful candidate full-time employment as a doctoral student. This includes health and social insurance, etc. associated with normal employments in Austria.

Formal requirement: The candidate must hold a Master’s degree or equivalent, and is expected to pass the admission criteria of the Graduate School in Complex Quantum Systems (www.coqus.at).

For applications please send: i) A cover letter describing yourself and your scientific interests. ii) Your CV. iii) The e-mail addresses of two reference persons.

Send your application electronically to CoQuS and in copy to
Jörg Schmiedmayer (schmiedmayer@atomchip.org).
Armin Scrinzi (scrinzi@tuwien.ac.at)