

International Workshop on
**Mesoscopic Phenomena in Ultracold Matter:
From Single Atoms to Coherent Ensembles**

October 11 - 15, 2004

Scientific coordination:

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Organisation:

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Recent advances in the experimental techniques of cooling, trapping as well as processing of dilute atomic gases lead to pioneering developments with respect to the coherent manipulation of ultracold matter. External fields allow nowadays to control the internal, motional as well as collective degrees of atoms leading to a large variety of possibilities to design new quantum states of both atomic ensembles as well as individual atoms. Among others, the promising fields of atom optics and quantum information processing for atomic ensembles as well as single atoms have emerged. A toolbox of mesoscopic devices acting coherently on the quantum scale, such as optical lattices and atom chips, have been invented. The present workshop brings together experts in 'quantum engineering' of ultracold coherent matter covering both the many-body aspects as well as the properties and interaction of single atoms. Very recent developments and perspectives such as superfluidity and BEC-BCS crossovers in tunable atomic condensates of Bosonic and Fermionic character or molecular Bose-Einstein condensates will be covered. Both experimentalists as well as theorists are invited equally. The aim is to assess and evaluate the state-of-the-art and to develop ideas and perspectives for future research.

Invited speakers:

C. S. Adams (Durham)*	A. Aspect (Orsay)	Y. Castin (Paris)
J. Dalibard (Paris)	W. Ertmer (Hannover)	C. Greene (Boulder)*
D. Jaksch (Oxford)	P. Julienne (Gaithersburg)	Y. Kivshar (Canberra)
M. Lewenstein (Hannover)	D. Meschede (Bonn)	M. Ol'shanii (Los Angeles)
T. Pfau (Stuttgart)	W. P. Reinhardt (Seattle)	C. Salomon (Paris)
W. Schleich (Ulm)	J. Schmiedmayer (Heidelberg)	K. Sengstock (Hamburg)
G. V. Shlyapnikov (Orsay)	H.T.C. Stoof (Utrecht)	S. Stringari (Trento)
E. Tiemann (Hannover)	C. Zimmermann (Tübingen)	P. Zoller (Innsbruck)*

* to be confirmed

Applications are welcome and should be made by using the application form on the workshop web page (see web page below). However, the number of attendees is limited. The registration fee for the workshop is € 80. Costs for accommodation and meals will be covered by the Max Planck Institute. In exceptional cases, funding is available to partly cover travel expenses.

Deadline for applications is August 31, 2004.



For further information please contact:
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