

International Seminar and Workshop on Quantum Coherence, Noise and Decoherence in Nanostructures

May 15 - 26, 2006

Scientific coordinators:

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The modern field of nano-electronics has brought about novel physical phenomena and created new challenges for their interpretation within the quantum theory. Among the most fundamental concepts are quantum coherence and interference effects. In realistic situations they are reduced by interactions of electrons with each other or further degrees of freedom. The interplay between coherence, disorder, interactions, level quantization, and quantum fluctuations has been studied in a variety of contexts and physical systems, including

- Transport of interacting electrons in quantum dots, quantum wires, and 2D structures
- Low temperature decoherence in metals and semiconductors
- Quantum information and decoherence
- Shot noise and full counting statistics
- Persistent currents in nanorings
- Mesoscopic superconductivity
- Spintronics

An improved understanding of these and further phenomena is needed both from a fundamental point of view as well as for a variety of potential applications, ranging from highly sensitive detectors to quantum information devices and single-electron logic circuits operating at room temperature.

The goal of the meeting, a one-week seminar followed by a one-week workshop, is to bring together leading scientists from different sub-fields of condensed matter physics in order to advance the understanding of electron decoherence in nanostructures. It should help to review the present status, to show directions for further research and to promote new collaborations.

INVITED SPEAKERS INCLUDE (* TO BE CONFIRMED):

D. Averin (Stony Brook)	C. Beenakker (Leiden)	J. Bird (Buffalo)	N. Birge (Michigan)
H. Bouchiat (Orsay)	C. Bruder (Basel)	O. Buisson (Grenoble)	M. Büttiker (Geneva)
V. Chandrasekhar (Evanston)	J. Clarke (Berkeley)	P. Delsing (Göteborg)	J. von Delft (Munich)
K. Ensslin (Zürich)	Y. Gefen (Rehovot)	L. Glazman (Minneapolis)	D. Golubev (Karlsruhe)
H. Grabert (Freiburg)	F. Guinea (Madrid)	P. Hakonen (Helsinki)	P. Hänggi (Augsburg)
E. Il'ichev (Jena)	A. Finkelstein (Rehovot)	S. Kravchenko (Boston)	V. Kravtsov (Trieste)
C. Lambert (Lancaster)	A. Leggett* (Urbana)	J.J. Lin (Taiwan)	P. Lindelof (Copenhagen)
D. Loss (Basel)	P. Mohanty (Boston)	G. Montambaux (Orsay)	J. Mooji (Delft)
Y. Nakamura (Tsukuba)	Yu. Nazarov (Delft)	M. Paalanen (Helsinki)	J. Pekola (Helsinki)
V. Petrashov (London)	L. Saminadayar (Grenoble)	A. Shnirman (Karlsruhe)	P. Stamp (Vancouver)
H. Takayanagi (Atsugi)	S. Tarucha (Tokyo)	U. Weiss (Stuttgart)	R. Webb (Columbia)
G. Zarand (Budapest)			

Applications are welcome and should be made by using the application form on the conference web page. Please note that the number of attendees is limited. The registration fee is €100, costs for accommodation and meals will be covered by the Max Planck Institute. In exceptional cases, limited funding is available to partly cover travel expenses.

Deadline for applications is January 31, 2006.



For further information please contact:

Visitors Program

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