

# FRONTIERS of QUANTUM and MESOSCOPIC THERMODYNAMICS

26-29 July 2004, Prague, Czech Republic

Satellite of the 20th General Conference  
of the EPS Condensed Matter Division  
19 - 23 July 2004, Prague

## FIRST ANNOUNCEMENT

### Scope of the conference

Recent experimental and theoretical achievements of condensed matter physics have revealed an increasing importance of understanding the physics of very small and low dimensional systems. Issues related to quantum dephasing, thermodynamics and the measurement process have a tremendous impact in new emerging fields of condensed matter physics, e.g., quantum information processing and coherence phenomena in nanoscale and low-dimensional systems. Together with these developments, discussions related to the quantum and mesoscopic thermodynamics have naturally emerged.

The aim of the conference is to bring together leading scientists and junior researchers working on these closely related areas of condensed matter physics and statistical mechanics. Our intent is to discuss hot topics and future directions in these fields, as well as to establish collaborations and connections among seemingly independent communities.

### Tentative list of topics:

- Quantum, mesoscopic and (partly) classical thermodynamics
- Quantum limits to the second law.
- Quantum measurement
- Quantum decoherence and dephasing
- Mesoscopic and nanomechanical systems
- Classical molecular motors, ratchet systems and rectified motion
- Quantum Brownian motion
- Quantum motors
- Quantum computing
- Relevant experiments from the nano- to the macro-scale

# Organisation

## The conference is supported by:

- Condensed Matter Division of the European Physical Society
- Institute of Physics, the Academy of Sciences of the Czech Republic
- Faculty of Mathematics and Physics, Charles University
- Center for Theoretical Study, Charles University and the Academy of Sciences of the Czech Republic

## International scientific committee:

Chair: Theo Nieuwenhuizen (Amsterdam)

Co-Chair: Václav Špička (Prague)

Roger Balian (Saclay)

Milena Grifoni (Regensburg)

Marlan Scully (Princeton)

Daniel Sheehan (San Diego)

Vladimir Zakharov (Tucson)

## Organizing committee:

Conference Chair: Václav Špička (Academy of Sciences, Prague)

Members:

Jiří Bok (Charles University, Prague)

Petr Chvosta (Charles University, Prague)

Pavel Hubík (Academy of Sciences, Prague)

Peter Keefe (Detroit)

Zdeněk Kožíšek (Academy of Sciences, Prague)

## Confirmed participants

A. Aharony (Tel Aviv)  
A.E. Allahverdyan (Amsterdam)  
B.L. Altshuler (Princeton)  
R. Balian (CEA-Saclay)  
J. Berger (Haifa)  
M.P. Blencowe (Dartmouth)  
T. Brandes (Manchester)  
M. Büttiker (Genova)  
A.O. Caldeira (Campinas)  
P. Hänggi (Augsburg)  
D. Gross (Berlin)  
H. Grabert (Freiburg)  
M. Grifoni (Regensburg)  
F. Haake (Düsseldorf)  
G. Ingold (Augsburg)  
P. Keefe (Detroit)  
S. Klumpp (Golf)  
H. Linke (Oregon)  
A.J. Leggett (Urbana)  
A. MacKinnon (London)  
G. Mahler (Stuttgart)  
Th. M. Nieuwenhuizen (Amsterdam)  
A.V. Nikulov (Chernogolovka)  
R.F. O'Connell (Baton Rouge, Louisiana)  
M.O. Scully (Princeton)  
K. Schwab (Maryland)  
D.P. Sheehan (San Diego)  
T. Seideman (Northwest University)  
V. Spicka (Prague)  
U. Weiss (Stuttgart)

### **Final confirmation awaited:**

P. Talkner (Augsburg)  
A. Zeilinger (Vienna)  
W.H. Zurek (Los Alamos)

# General information

## Programme

The programme has two types of lectures. Overview invited lectures cover a somewhat broad area or a few related topics, while reporting shorter invited lectures deal with promising progress in developing and understanding particular topics or techniques related to the scope of the conference. Submitted contributions will be presented and discussed in the poster session.

**Evening lecture:** on Tuesday (July 27) there will be an evening lecture by the 2003 Nobel Laureate A.J. Leggett.

## Participation

Participation at the conference is limited by its intention and by the capacity of the local facilities. Oral contributions will be accepted only after invitation by the international scientific committee. It is encouraged to submit poster contributions, out of which the scientific committee will make a selection.

## Registration

Participants, including invited speakers, should preregister by filling out the preregistration form.

Registration will start on March 1, 2004.

## Deadlines

- Registration and abstract submission will start on **March 1, 2004**
- April 25, 2004: Abstract submission deadline
- April 25, 2004: Early registration deadline (lower fee)
- May 21, 2004: Notification to authors
- June 18, 2004: Registration deadline

**Conference fee:**

The conference budget is created only by conference fees. All participants, including organizers, are requested to pay the conference fee. The fee covers conference materials, the get-together party on Sunday, the buffet on Tuesday, the conference dinner and all refreshments at the conference.

**Support:**

All participants are requested to pay their travel expenses and accomodation. Only in exceptional cases limited support will be provided.

**Accomodation:**

The short list of hotels with discount prices for the conference participants will appear at this the conference www pages soon.

**Proceedings**

All invited authors are encouraged to contribute to the conference proceedings. The organizers will edit the proceedings for publication. Invited speakers are asked to hand in a written text for the proceedings (the details as for the form of their contributions will be announced later). The comittee may also invite some of the posters for the proceedings.

**Contact address**

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