

# School and Workshop on Quantum Information Theory and Thermodynamics at the Nanoscale



**24 February - 6 March 2020**  
**Al Hoceima, Morocco**

Further information:

School webpage: <http://indico.ictp.it/event/9023/>

Workshop webpage: <http://indico.ictp.it/event/9155/>  
[smr3426@ictp.it](mailto:smr3426@ictp.it)

This School (24 - 28 February) and Workshop (2 - 6 March) focus on the forefront of the field of quantum technologies, a fast growing research area involving questions of both fundamental and practical relevance.

What are the roles and value of coherence and entanglement in solid state devices in quantum information, and in the working and efficiency of mesoscopic quantum engines?

What are the mechanisms behind thermalization of closed quantum systems and what is the role of non-Markovianity in the physics of quantum information?

These topics will be covered during the School, with a subsequent Workshop designed for graduate students and junior researchers, to offer quality training and the opportunity to meet some leading experts in the field.

## Topics:

- Open Quantum Systems
- Non-equilibrium Quantum Dynamics
- Complex Quantum Systems
- Quantum Machine Learning
- Many-body Quantum Systems
- Physical Foundations of Quantum Information

## How to apply:

School webpage:  
<http://indico.ictp.it/event/9023/>  
Workshop webpage:  
<http://indico.ictp.it/event/9155/>

To participate in both activities it is necessary to submit two distinct applications.

Female scientists are particularly encouraged to apply.

## Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

## Directors:

A. AUFFÈVES (Institut Néel-CNRS, Grenoble)  
F. BENATTI (University of Trieste)  
A. EL ALLATI (University Abdelmalek Essaadi, Al Hoceima)  
M. EL BAZ (University Mohammed V, Rabat)  
A. EL HADDADI (University Abdelmalek Essaadi, Al Hoceima)  
Y. HASSOUNI (University Mohammed V, Rabat)  
T. MOURABIT (University Abdelmalek Essaadi, Al Hoceima)  
M. PALMA (University of Palermo)  
M. PATERNOSTRO (Queen's University, Belfast)  
A. SCARDICCHIO (ICTP, Trieste)  
Y. TAYALATI (University Mohammed V, Rabat)  
E.H. ZEROUALI (University Mohammed V, Rabat)

## Lecturers:

G. BENENTI (University of Insubria, Como)  
A. BUCHLEITNER (Albert-Ludwigs University of Freiburg)  
S. CAMPBELL (University College Dublin)  
D. CHRUSCINSKI (Nicolaus Copernicus University of Torun)  
E. ERCOLESSI (University of Bologna)  
M. PARIS (University of Milano)

## Workshop Speakers:

M. AZZOUZ (International University of Rabat)  
A. BELHAJ (Université Morocco V, Rabat)  
K. BERTELS (Delft University of Technology)  
A. BOUCHENE (Université Paul Sabatier Toulouse)  
E.H. EL BOUDOUTI (Mohammed I University, Oujda)  
D. BRAUN (Universität Tübingen)  
F. BRETENAKER (Université Rennes I, Orsay)  
M. DAOUD (Université Ibn Tofail, Kenitra)  
G. DE CHIARA (Queen's University of Belfast)  
J. P. GAZEAU (Paris Diderot University)  
J. GOOLD (Trinity College, Dublin)  
N. KIESEL (University of Vienna)  
E. LUTZ (Institute for Theoretical Physics, Stuttgart)  
S. MANCINI (University of Camerino)  
S. MANISCALCO (University of Turku)  
G. MANZANO PAULE (ICTP)  
G. MORIGI (Universität des Saarlandes) \*  
J. PEKOLA (Aalto University)  
S. PASCAZIO (University of Bari)  
R. WHITNEY (LPMMC CNRS Grenoble)  
R. ZAMBRINI (Campus Universitat Illes Balears)  
K. ZYCZKOWSKI (Jagiellonian University, Krakow) \*  
\* to be confirmed

## ICTP Scientific Contact:

A. SCARDICCHIO

## Deadlines:

**10 November 2019**

**24 November 2019**

for applicants not requesting financial support, not needing visa



The Abdus Salam  
**International Centre  
for Theoretical Physics**  
[www.ictp.it](http://www.ictp.it)  
Trieste, Italy

