

# Workshop on Dynamics of Monitored Quantum Many-Body Systems



**21 - 25 August 2023**  
**An ICTP Meeting**  
**Trieste, Italy**

Further information:

<http://indico.ictp.it/event/10202/>  
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This workshop brings together scientists working on the theory of monitored many-body systems and on their experimental implementation in available architectures to define the state-of-the-art in the field and lay the basis for new key developments.

## Directors:

A. ROMITO, Lancaster University, UK  
M. SCHIRÒ, CNRS&College de France, France

## Local Organiser:

R. FAZIO, ICTP, Italy

## Description:

The dynamics of many-body quantum systems under monitoring is a new-born research area which, in a few years, has literally opened up the study of open quantum systems beyond their averaged dynamics bringing up new discoveries.

In particular, the competition between unitary dynamics and the purifying effect of measurements can result in novel kinds of phase transitions in the entanglement properties and novel forms of topological orders. Measurement-induced quantum dynamics sets entirely new challenges for theory modelling and experiments.

A global picture is just emerging from a few analytically tractable models, several numerically challenging studies, and very few attempted experiments.

The workshop aims to promote cross-contamination and the exchange of ideas amongst the leading scientists in the field to set new directions for this new-born research area.

## Topics:

- Monitored quantum systems,
- Measurement-induced transitions,
- Non-hermitian quantum dynamics,
- Noisy quantum dynamics and quantum many-body trajectories

## Speakers:

A. BIELLA, University of Trento, Italy  
M. BUCHHOLD, University of Cologne, Germany  
A. CHAN, Lancaster University, UK  
M. COLLURA, SISSA, Italy  
M. DALMONTE, ICTP, Italy  
S. DIEHL, University of Cologne, Germany  
J. P. GARRAHAN, University of Nottingham, UK  
Y. GEFEN, Weizmann Institute, Israel  
G. KELLS, Maynooth University, Ireland  
Z. LENARCIC, Jozef Stefan Institute, Slovenia  
I. LESANOVSKY, University of Tübingen, Germany  
D. MEIDAN, Ben Gurion University, Israel  
M. MOTTA, IBM, USA  
A. PAL, UCL, UK  
J. RUHMAN, Bar-Ilan University, Israel  
H. SCHOMERUS, Lancaster University, UK  
A. SILVA, SISSA, Italy  
X. TURKESHI, Collège de France, France  
R. VASSEUR, UMass Amherst, USA  
O. ZILBERBERG, University of Konstanz, Germany

## How to apply:

Online application:  
<http://indico.ictp.it/event/10202/>

Female scientists are 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.

## Deadlines:

**15 April 2023**

for applicants requesting financial and/or visa support

**15 June 2023**

for all other applicants



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for Theoretical Physics  
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