

# Openness as a resource: Accessing new quantum states with dissipative mechanisms

## International Workshop 31 Jan - 4 Feb 2022

Openness allows for mechanisms such as spontaneous relaxation and depolarization to disturb the dynamics of quantum systems and interfere with their, otherwise unitary, evolution. Yet openness is not exclusively a nuisance, it can also be used as a resource: Dissipative mechanisms can be employed to fight decoherence and thus stabilize quantum states which otherwise do not survive in the asymptotic limit. Alike, those can be utilized to convert heat stemming from a dissipative environment into useful work. The agenda of this workshop is to address the following question: How can we grasp new class of quantum states by tuning dissipative mechanisms and simultaneously pushing quantum systems out of equilibrium?

We plan for a **hybrid workshop** with a number of participants on-site and the others connected remotely. Online attendance will be possible in any case. The organizers will inform about an option of on-site attendance at a later stage.

### Topics:

- Open many-body systems
- Dissipative quantum chaos
- Open Floquet systems
- Quantum heat engines
- Quantum thermodynamics



### Invited speakers:

Dmitry Abanin (CH)  
 Claudia Artiago (SE)  
 Dariusz Chruściński (PL)  
 Adolfo del Campo (LU)  
 André Eckardt (DE)  
 Francesco Giazotto (IT)  
 John Goold (IE)  
 Masudul Haque (DE)  
 Francesco Piazza (DE)  
 Dario Poletti (SG)  
 Patrick Potts (CH)  
 Tomaž Prosen (SI)  
 Pedro Ribeiro (PT)  
 Davide Rossini (IT)

Alexander Schnell (DE)  
 Sølve Selstø (NO)  
 Walter Strunz (DE)  
 Roberta Zambrini (ES)

### Scientific coordinators:

Sergey Denisov  
 (Oslo, Norway)  
 Michele Campisi  
 (Pisa, Italy)  
 Peter Hänggi  
 (Augsburg, Germany)

### Organisation:

Mandy Lochar  
 MPIPKS Dresden

Applications received before 15th December 2021 are considered preferentially.

Applications are welcome and should be made by using the application form on the event's web page. The number of attendees is limited.

The registration fee for the international workshop is 140 Euro and should be paid by all on-site participants. Costs for accommodation and meals for on-site participants will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses.

No fee for remote participation.

### For further information please contact:

Mandy Lochar  
 MPI for the Physics of Complex Systems  
 Nöthnitzer Str. 38, D-01187 Dresden  
 Tel: +49-351-871-1933  
 Fax: +49-351-871-2199  
 openq22@pks.mpg.de  
 www.pks.mpg.de/openq22/