

OPEN QUANTUM DYNAMICS AND THERMODYNAMICS

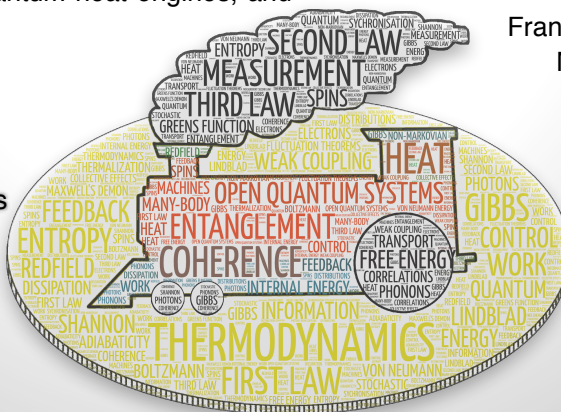
INTERNATIONAL WORKSHOP

March 30 — April 3, 2020

The field of open quantum systems is undergoing a rapid phase of development due to the emergence of new devices based on quantum superposition and coherence. In this context, it is crucial to understand: (i) the thermodynamic behavior of small quantum systems, in particular when in contact with an environment; (ii) the related fluctuation relations that connect thermodynamic quantities such as work and free energy of the device; (iii) effects of intermediate and strong coupling to the environment; (iv) many-body effects and their persistence in the presence of dissipation. The aim of the workshop is to bring together leading researchers in this field to present new results and appropriate methodologies to identify and attack the relevant open problems of the field. The invited and contributed talks will cover these aspects related to open quantum systems and also to quantum computing, quantum heat engines, and optimal control of quantum systems.

Topics include:

- ▶ Strong coupling and non-Markovian (thermo-)dynamics
- ▶ Quantum machines
- ▶ Many-body open systems
- ▶ Driven open systems
- ▶ Fluctuation theorems



Invited Speakers

Antonio Acin (Spain)
Arman Allahverdyan (Armenia)
Heinz-Peter Breuer (Germany)
Adolfo del Campo (Spain)
Jianshu Cao (USA)
Sergey Denisov (Norway)
John Goold (Ireland)
Dong Hee Kim (Korea)
Sabrina Maniscalco (Finland)
Mikko Möttönen (Finland)
Ahsan Nazir (UK)
Jae Dong Noh (Korea)
Mauro Paternostro (UK)
Francesco Petruccione (South Africa)
Marti Perarnau-Llobet (Germany)
Dario Poletti (Singapore)
Haitao Quan (China)
Ali Rezakhani (Iran)
Paolo Solinas (Italy)
Jürgen Stockbürger (Germany)
Jaegon Um (Korea)
Ines de Vega (Germany)
Prasanna Venkatesh (India)
Sai Vinjanampathy (India)
Jian-Sheng Wang (Singapore)
Gentaro Watanabe (China)

Scientific Coordinators

Peter Talkner (Germany)
Tapio Ala-Nissila (Finland & UK)
Juzar Thingna (Korea)

Organizers

Gileun Lee (Korea)
Jaehee Kwon (Korea)

Venue:

- ▶ Institute for Basic Science (IBS) +82-42-878-8633
Expo-ro 55, Yuseong-gu, Daejeon 34126, South Korea

Coordinator: Dominika Konikowska (Korea)