

First Announcement (October 22, 2018)

## **Frontiers of Quantum and Mesoscopic Thermodynamics (FQMT'19)**

**14 July (Sunday) – 20 July (Saturday) 2019, Prague, Czech Republic**

<https://fqmt.fzu.cz/19/>

The FQMT'19 is dedicated to Marlan Scully  
for his lifetime achievements in physics

### **Scope of the Conference**

The main goal of the conference is to contribute to a better understanding of the behavior of quantum systems out of equilibrium. To reach this aim we also need to improve our knowledge of systems in equilibrium and steady state situations. The conference will thus address foundations of quantum physics, quantum many body physics, statistical physics, and thermodynamics relying on the theoretical and experimental methods of condensed matter physics and quantum optics. The systems considered will be mainly on the order of mesoscopic (nanoscale) size, and include those of both natural and artificial origin. Special attention will be given to non-equilibrium quantum systems, physics of quantum information and manifestation of quantum effects in biological systems. Subjects from astrophysics, gravitation or cosmology related to the above scope will also be included.

Following the tradition of the FQMT conferences, FQMT'19 will again bring together a unique combination of both young and experienced scientists across a disciplinary spectrum covering the above mentioned topics. The interdisciplinary character of the conference will be supported by the choice of key speakers who, apart from their specializations, are not only able to report specific results within their fields, but are also able to discuss the state of the art of their fields from the standpoint of a broader perspective of overlap with other fields.

Additional information on the scientific background of the conference and details on the conference series history, including programs of the public lectures and concerts presented at the previous conferences, can be found in the file Overall.pdf also available for [download](#) from the conference www pages. For the history of the FQMT conferences and details of their programs see also the www pages: <https://fqmt.fzu.cz/>.

## Topics

Non-equilibrium quantum phenomena  
Foundations of quantum physics  
Quantum measurement, entanglement and coherence  
Dissipation, dephasing, noise and decoherence  
Many body physics, quantum field theory  
Quantum statistical physics and thermodynamics  
Quantum optics  
Quantum simulations  
Physics of quantum information and computing  
Topological states of quantum matter, quantum phase transitions  
Macroscopic quantum behavior  
Cold atoms and molecules, Bose-Einstein condensates  
Mesoscopic, nano-electromechanical and nano-optical systems  
Biological systems, molecular motors and quantum biology  
Cosmology, gravitation and astrophysics

## Public Lectures

Following the tradition of FQMT conferences, the FQMT'19 program will include several public lectures which will present interesting topics in the form attractive for both the conference participants and general audience. The following lecturers are confirmed:

- Wolfgang Ketterle (Massachusetts Institute of Technology)
- William Phillips (NIST and University of Maryland, Gaithersburg)
- Rainer Weiss (Massachusetts Institute of Technology)

These lectures will be held at special venues and accompanied by concerts.

## Important dates

- **On-line registration started:** July 4, 2018
- **Abstract submission started:** July 4, 2018
- **Fee payment starts:** January 14, 2018
- **Conference on-site registration starts:** Sunday, July 14, 2019, 16:00 (4 p.m.)
- **Scientific program starts:** Monday, July 15, 2019, 8:00 (8 a.m.)
- **Scientific program ends:** Saturday, July 20, 2019, 18:00 (6 p.m.)

## Deadlines

- Abstract submission deadline for invited talks: February 18, 2019
- Abstract submission deadline for posters: March 4, 2019
- Deadline for the specification of availability of the invited speakers for their talks: March 18, 2019
- Notification of author's contribution acceptance  
(not relevant for invited authors)

The Scientific Committee will send notification within approximately two weeks from receiving the abstract

- Lower fee payment deadline: March 25, 2019

*Some poster contributing (non-invited) participants may be informed about the decision regarding their abstracts after the Lower fee payment deadline. In such a case, the participant is entitled to pay the lower fee within two weeks from the notification about the (first) poster acceptance.*

- Hotel reservation deadline: April 15, 2019
- Deadline for minor modifications of the submitted abstracts: May 20, 2019
- Online registration and bank transfer/card payment deadline: June 3, 2019

## Registration

**On-line registration already started** on July 4, 2018.

Those who intend to participate in the conference, including invited speakers and poster contributors, are kindly asked to register as soon as possible by filling out the [registration form](#). This essentially helps organizers to communicate with the participants and to prepare high-quality program.

Please notice that the on-line registration is independent on the conference fee payment which will start later on, **14 January, 2019**.

To avoid serious problems in the creating of the conference program, it is essential that maximum number of participants will be available during the whole conference (from Monday morning to Saturday late afternoon).

Please bear in mind that Saturday's conference program will be equally important as in other days and will include some key talks.

Please take the above facts seriously when you plan your stay in Prague.

## Personal homepage (My Profile)

For your convenience, we have introduced a new element of the conference www pages, namely **participant's homepage**, called **My Profile**. When you log in to your homepage you can deal with various tasks related to the FQMT'19.

The My Profile page is accessible from the FQMT'19 [main page](#) via [Login](#) button (placed below the left menu column). Your "My Profile" page centralizes the access to the most of your activities, i.e. from the "My Profile" page you can:

1. review and modify your registration data
2. enter, review and modify your abstract(s)
3. pay conference and accompanying person fee(s) on-line and review your payments (including the bank transfer payments that already arrived at the conference account (the payment part of the My profile will be fully open from January 14, 2019).

## Conference fee

**All participants, including invited speakers and organizers, are requested to pay the conference fee.** Because the conference budget is created only by conference fees, all participants are kindly requested to pay the conference fee at their earliest convenience (after the conference account will be open).

### **Registration fee of participants will cover:**

- Conference materials and a soft attaché case
- Refreshment during registration on Sunday
- Refreshments during all coffee breaks
- Poster session buffet
- Social program for the participants

**Before March 31, 2019: 590 EUR**

**Between March 31 and June 1, 2019: 650 EUR**

**On site after arrival: 750 EUR**

### **Registration fee of accompanying persons will cover:**

- Personal badge - free entrance to the conference sites buildings
- Handbag with maps, writing pad and pencils
- Refreshment during registration on Sunday
- Several guided tours through Prague for accompanying persons will be organized in time of the conference daily scientific program
- Social program which includes Welcome party in the Wallenstein Palace and concerts of classical/jazz music

**Payable at any time, for each accompanying person: 150 EUR**

**The conference account for the fee payment (by payment card or by bank transfer) will be open on January 14, 2019.**

## Instructions for participants

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Please bear in mind that Saturday's conference program will be equally important as in other days and will include some key talks.

Please take the above facts seriously when you plan your stay in Prague.

### Abstract preparation

**Abstract submission already started** on July 4, 2018.

Maximum length of the abstract is an equivalent of A4 page, including title, authors' names and affiliations. Authors are kindly asked to submit their abstract using [on-line form](#) available from the FQMT'19 homepage. In the form, you can type in special characters (superscripts, subscripts and Greek letters) and enter references; however, figures are not allowed.

### Instructions for speakers

Facilities available for oral presentations:

- Conference notebook with MS Windows operating system
- Conference MacBook
- Video projector
- Overhead projector
- Flip chart
- Laser pointers

Formats allowed for the computer presentations:

- PowerPoint files (MS Office 97-2016)
- PDF files

**For your presentation you can use either your notebook or the conference one.**

### Posters

**Poster session date will be announced later on.**

A single board will be assigned for each poster.

Dimensions: width 97 cm, height 119 cm

Pins will be available.

## Accommodation

The organizers of the conference have reserved limited number of rooms for participants of FQMT'19 in the **Pyramida Hotel, the site of the conference**, with advantageous price.

In the Pyramida Hotel most of the FQMT'19 conference events will take place, including all regular talks, poster session and some social events.

The hotel provides its guests with breakfast and for the participants of the conference a possibility to buy a lunch at a reduced price. Participants are strongly recommended to accommodate in this hotel and to book since this gives them a possibility of optimal use of their time during the conference.

**You will be able to make your reservation using the direct link to the Pyramida Hotel which will be available at the conference www pages later on.**

## Musical, Art and Social Programs

An encompassing social program includes the number of social events and tours in order that participants may enjoy not only physics but also Prague during the conference, sometimes in a way, which is hardly available to common visitors of Prague. Hence, for accompanying persons this is an opportunity of rare quality to visit to this city.

Participants of FQMT'19 conference will have an exceptional opportunity to spend some time in the Wallenstein Palace. The participants and their partners could enjoy the large baroque Garden of the Wallenstein Palace with its nice Sala Terrena for discussions during the evening welcome party. A guided tour will be organized through the huge baroque complex of the Wallenstein Palace. This would be a unique experience by itself since it is difficult to see all these places under ordinary circumstances.

In keeping with the multidisciplinary character of the scientific program, the cultural richness of the city of Prague and the tradition of the previous FQMT conferences, the FQMT'19 program will feature concerts performed by world-class musicians, held at outstanding venues of the city. The list of these places will likely include, e.g., the St. Simon and Juda Church (seat of the Prague Symphonic orchestra FOK), Dvořák's Hall of the Rudolfinum (the seat of the Czech Philharmonic Orchestra and famous by concerts of Prague Spring Festival), the gothic Cathedral of St. Vitus at Prague Castle (one of the symbols of the Czech lands), and the baroque St. Margaret Church at the Břevnov Monastery.

The scientific, the fine arts, and the musical programs are intended as a complement to one another, where scientists, historians of the arts and musicians are encouraged to mingle and share their knowledge and experience. An encompassing social program is planned which will include tours and a number of very special events unavailable to the general tourist.

## The following events and tours will be available for the accompanying persons:

- **All conference concerts** at exceptional venues of Prague like Saint Vitus Cathedral of the Prague Castle, Prague theaters and churches.
- **Other social events**, e.g. Welcome party in the beautiful Baroque Wallenstein Palace Garden
- **Guided tours (subject to change)**
  - Monday, July 15, 2 p.m. – 4 p.m.  
**Leisure orientation tour: Basic facts about Prague**
    - Strahov Monastery
    - Panoramic view of Prague
    - Walking through the courtyards of Prague Castle and some of its garden
  - Tuesday, July 16, 9.30 a.m. – 12 a.m.  
**Old and New Town of Prague**
    - Franciscan Garden
    - Church of Our Lady of the Snows
    - Wenceslav Square
    - Lucerna Palace
    - Old Town Square
    - Church of Our Lady Before Týn and Saint Jacob Church
    - Rudolfinum
    - Manes Bridge
  - Wednesday, July 17, 9.30 a.m. – 12 a.m.  
**The Lesser Town of Prague**
    - Picturesque New World of Hradcany
    - Stag Moat
    - Charles Bridge
    - Kampa Island and John Lennon Wall
    - Church of Virgin Mary Victorious: Infant Jesus Christ of Prague
    - The Lesser Town Square
  - Thursday, July 18, 9.30 a.m. – 12 a.m.  
**Historical Site of Vysehrad**
    - Panoramic views of Prague
    - Baroque fortress
    - National Cemetery
  - Friday and Saturday programs and also possible program on Sunday, July 21, will be determined later on.



## The conference is supported by

- Committee on Education, Science, Culture, Human Rights and Petitions of the Senate of the Parliament of the Czech Republic
- Institute of Physics, the Czech Academy of Sciences
- Department of Physics, Texas A&M University, USA
- Institute for Theoretical Physics, University of Amsterdam, Netherlands
- College of Engineering and Science, University of Detroit Mercy, USA
- Quantum Optics Lab at the BRIC, Baylor University, USA
- Institut de Physique Théorique, CEA/CNRS Saclay, France

## The conference is organized by

- Institute of Physics, the Academy of Sciences of the Czech Republic
- Committee on Education, Science, Culture, Human Rights and Petitions of the Senate of the Parliament of the Czech Republic

## Organizing Committee

**Conference chair:** Václav Špička (*Institute of Physics, Czech Academy of Sciences, Prague*)

Jiří Bok (*Charles University, Prague*)

Howard Brubaker (*Detroit*)

Pavla Bušová (*Prague*)

Barbora Chudíčková (*Institute of Physics, Czech Academy of Sciences, Prague*)

Soňa Fialová (*Prague*)

Etienne Hofstetter (*London*)

Pavel Hubík (*Institute of Physics Czech Academy of Sciences, Prague*)

Peter D. Keefe (*University of Detroit Mercy*)

Souheil Khaddaj (*Kingston University, London*)

Zdeněk Kožíšek (*Institute of Physics, Czech Academy of Sciences, Prague*)

Ján Krajník (*Tacca Agency, Prague*)

Josef Kšica (*Prague*)

Karla Kuldová (*Institute of Physics, Czech Academy of Sciences, Prague*)

Jiří J. Mareš (*Institute of Physics, Czech Academy of Sciences, Prague*)

Theo M. Nieuwenhuizen (*University of Amsterdam*)

Claudia Pombo (*Amsterdam*)

Marie Svobodová (*Tacca Agency, Prague*)

Jarmila Šidáková (*Institute of Physics, Czech Academy of Sciences, Prague*)

Yuval Waldman (*Music Bridge International, New York*)

## Scientific Committee

**Chair:** Václav Špička (*Institute of Physics, Czech Academy of Sciences, Prague*)

**Co-Chair:** Theo M. Nieuwenhuizen (*University of Amsterdam*)

Raymond Dean Astumian (*University of Maine, Orono*)

Roger Balian (*IPhT, Saclay*)

Gordon Baym (*University of Illinois at Urbana - Champaign*)

Dietrich Belitz (*University of Oregon*)

Ofer Biham (*Hebrew University, Jerusalem*)

Rainer Blatt (*Innsbruck University*)

Miles Blencowe (*Dartmouth College, Hanover*)

Dirk Bouwmeester (*UCSB & Leiden University*)

Michel Brune (*Laboratoire Kastler Brossel, Paris*)

Amir Ordacgi Caldeira (*Universidade Estadual de Campinas*)

Juan Ignacio Cirac (*Max Planck Institute, Garching*)

Pawel Daniel Danielewicz (*Michigan State University, East Lansing*)

Luiz Davidovich (*Universidade Federal do Rio de Janeiro*)

Michel H. Devoret (*Yale University and Collège de France*)

Daniel Esteve (*CEA-Saclay*)

Peter Hänggi (*University of Augsburg*)

Serge Haroche (*École Normale Supérieure, Paris*)

Dudley Herschbach (*Harvard University*)

Gregg Jaeger (*Boston University*)

Christopher Jarzynski (*University of Maryland, College Park*)

Wolfgang Ketterle (*Massachusetts Institute of Technology, Cambridge*)

Andrei Khrennikov (*Linnaeus University, Växjö*)

Norbert Kroo (*Hungarian Academy of Sciences, Budapest*)

Anthony J. Leggett (*University of Illinois at Urbana - Champaign*)

Igor Lerner (*University of Birmingham*)

Heiner Linke (*Lund University*)

Reinhard Lipowsky (*MPI of Colloids and Interfaces, Potsdam*)

Angus MacKinnon (*Imperial College, London*)

Yigal Meir (*Ben Gurion University, Beer Sheva*)

Franco Nori (*RIKEN, Wako-shi, and University of Michigan, Ann Arbor*)

Henri Orland (*CEA-Saclay*)

Giorgio Parisi (*Università di Roma I. La sapienza*)

William Daniel Phillips (*NIST and University of Maryland, Gaithersburg*)

Jean Michel Raimond (*École Normale Supérieure, Paris*)

Christophe Salomon (*Laboratoire Kastler Brossel, Paris*)

Marlan Scully (*Texas A&M University and Princeton University*)

Georgy Shlyapnikov (*Université Paris Sud*)

Wolfgang Schleich (*University of Ulm*)

Ady Stern (*Weizmann Institute, Rehovot*)

Jan van Ruitenbeek (*Leiden University, Kamerlingh Onnes Laboratory*)

Rainer Weiss (*Massachusetts Institute of Technology, Cambridge*)

Anton Zeilinger (*University of Vienna*)

Peter Zoller (*Institute for Quantum Optics and Quantum Information, Innsbruck*)