

671. WE-Heraeus Seminar



Fluctuation-induced Phenomena in Complex Systems

May 7-10, 2018 Physikzentrum Bad Honnef

Generously funded by the [Wilhelm and Else Heraeus Foundation](#).



Aims of the seminar and target audience

The study of fluctuation-induced phenomena requires an all-around perspective on how different areas of physics (e.g. thermodynamics, condensed matter theory, quantum field theory, atomic physics, quantum optics etc.) merge in the microscopic and mesoscopic world. From a theoretical point of view, combining the results of several research fields into a coherent and reliable framework can be challenging. Although each individual aspect might rely on a mature theory, the interfacing with other topics can quickly lead to difficulties but can also lead to novel interesting effects. Experimentally, despite the fact that modern techniques have allowed for a careful investigation of several of these interactions, numerous challenges appear as soon as one looks for higher accuracy or moves away from standard configurations.

The aim of the seminar is to gather leading researchers working on different aspects of fluctuation-induced phenomena in order to assess the current status of this rapidly developing interdisciplinary field, to discuss future developments and to foster the exchange of concepts and techniques. The seminar targets students, postdocs and young researchers working experimentally and/or theoretically in this exciting domain of research, specifically including the subtopics

- Casimir interactions
- van der Waals interactions
- Quantum and classical thermodynamics
- Dynamical nonequilibrium systems
- Nanophotonics systems

Invited Speakers

Ricardo Decca

Department of Physics, Indiana University-Purdue University Indianapolis
Indianapolis
Indiana, USA

Ho Bun Chan

The Hong Kong University of Science and Technology
Hong Kong

Lilia Woods

University of South Florida
Florida, USA

Karin Jacob

Saarland University
Germany

Rudolf Podgornik

Jozef Stefan Institute and University of Ljubljana,
Slovenia

Clemens Bechinger

Universität Stuttgart
Germany

Ferdinand Schmidt-Kaler

Johannes Gutenberg-Universität Mainz
Germany

Jörg Schmiedmayer

Atominstitut, TU-Wien
Austria

Peter Hänggi

University of Augsburg
Germany

Aleksandr I. Volokitin

Forschungszentrum Jülich,
Germany

Jeff Steinhauer

Technion—Israel Institute of Technology
Israel

Giovanna Morigi

University of Saarlandes
Germany

Shanui Fan

Stanford University
California, USA

Arno Rauschenbeutel

Atominstitut, TU-Wien
Austria

Ron Folman

Ben-Gurion University
Israel

F. Javier García de Abajo

ICFO—Institut de Ciències Fotoniques
Spain

Organizers

Francesco Intravaia

Max Born Institute & Humboldt university of Berlin
Germany

Diego A. R. Dalvit

Los Alamos National Laboratory
New Mexico, USA

Kurt Busch

Max Born Institute & Humboldt university of Berlin
Germany