



ICTP | International Centre for Theoretical Physics
SAIFR | South American Institute for Fundamental Research

Campus of IFT-UNESP - São Paulo, Brasil

July 20-24, 2020

**ICTP-SAIFR
 MINISCHOOL
 ON ASPECTS OF
 TOPOLOGICAL MATTER
 AT EQUILIBRIUM AND
 OUT-OF-EQUILIBRIUM**



SEBASTIAN DIEHL
 U. of Cologne, Germany



FERNANDO IEMINI
 U. Federal Fluminense, Brazil



LEONARDO MAZZA
 U. Paris-Saclay, France

The aim of this minischool is to present topological quantum phenomena from two viewpoints: that of equilibrium physics, typically related to the ground state or thermal states of the system, and that of non-equilibrium physics, where the time-evolution of the system is governed by topological invariants.

Adiabatic quantum pumps are one of the first phenomena where concepts from topology have been adapted to non-equilibrium dynamics. Students will encounter paradigmatic models such as the Kitaev chain, the SSH model and Chern insulators, as well as their out-of-equilibrium counterparts, the dissipative Kitaev chain, the topological non-Hermitian quantum walk and dissipative Chern insulators. The minischool will introduce students to basic theoretical and numerical tools for dealing with the quadratic fermionic problem at equilibrium and out-of-equilibrium and will explain the crucial interplay between symmetry and topology.

There is no registration fee and limited funds are available for travel and local expenses.

Application deadline: May 17, 2020

**Online application and more information:
<https://www.ictp-saifr.org/atp2020>**



ORGANIZERS

Fernando Iemini
 (U. Federal Fluminense, Brazil)

Leonardo Mazza
 (U. Paris-Saclay – France)

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