Topological Matter School: Topological excited States and Non-crystalline Systems (TMS2025)

18.Aug - 22.Aug 2025

Cod. Z17-25

Mod.:
Face-to-face

Edition
2025

Activity type
Workshop

Date
18.Aug - 22.Aug 2025

Location
Miramar Palace

Languages
English

Academic Validity
50 hours

Web
https://tms-dipc.org/

Organising Committee

Description

Excitations play a crucial role in determining fundamental electronic and optical properties of a crystal, and can even give rise to states of matter without any equilibrium counterparts. At the single-layer limit, quantum confinement and enhanced interaction effects lead to exotic many-body phenomena. For example, single-layer semiconductors host tightly bound excitons with large binding energies that remain stable even at room temperature. In bilayer and few-layer stacks, the relative twist angle between layers introduces an additional degree of tunability, enabling the exploration of new emergent phenomena. These include strongly correlated electronic states, adjustable band gaps, unique optical and magnetic properties, and correlated topological phases such as spin Hall and fractional quantum Hall effects.

ORGANIZING COMMITTEE:

- Maia G. Vergniory (DIPC, Max Planck)
- Reyes Calvo (BC Materials)
- Santiago Blanco-Canosa (DIPC, Ikerbasque)
- Adolfo Grushin (Institut NEEL – CNRS)
- Alexander Altland (University of Cologne)
- Julen Ibañez Azpiroz (CFM, Ikerbasque)

Objectives

The summer school aims to offer a comprehensive introduction to these cutting-edge topics and situate them within the broader framework of emergent phenomena in condensed matter physics.

Course specific contributors

Donostia International Physics Center

CRC183 ENTANGLED STATES OF MATTER

topology QUAST spatio-temporal correlations dynamics

Directed by

Maia García Vergniory

Donostia International Physics Center

Registration fees

REGISTRATION	UNTIL 20-07-2025
Fee Waiver	0 EUR
Regular attendant	400,00 EUR

Place

Miramar Palace

Pº de Miraconcha nº 48. Donostia / San Sebastián

Gipuzkoa