



# Quantum Designer Physics (QDP2022)

**Uzt. 18 - Uzt. 21 2022**

**Kod. Z18-22**

**Mod.:**

Aurrez aurrekoa

**Edizioa**

2022

**Jarduera mota**

Workshop

**Data**

Uzt. 18 - Uzt. 21 2022

**Kokalekua**

Miramar Jauregia

**Hizkuntzak**

Ingelesa

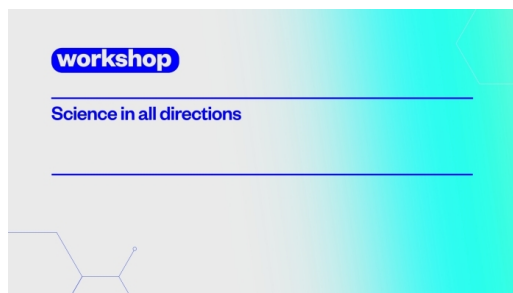
**Balio akademikoa**

40 ordu

**Webgunea**

<http://qdp2022.dipc.org>

**Antolakuntza Batzordea**



Fundación  
BBVA



## Azalpena

The workshop will highlight recent advances in material systems designed for studying the most intriguing physical phenomena at the nanoscale. These phenomena are related to spin, topology, and coherence, which make it possible for the materials to display quantum functionalities. While Condensed Matter Physics is rich in material systems in which almost any physics can be readily found and studied, with recent developments of quantum materials, it appears possible to purposefully design material systems with a given physical phenomenon in mind. Thus, a 'toy model' which could be conceived to exhibit an interesting behavior can be implemented in quantum materials for basic science or applications.

This workshop brings together the leading experts working on quantum materials and aims at creating a stimulating atmosphere for discussing new physics on the marvelous sites of San Sebastian. We will discuss recent progress in creating ordinary and topological quantum systems in different dimensions, as well as some of the most exotic quantum materials based on graphene and other low dimensional materials. We will update on the progress in spin-based quantum computing with a look into the prominent future of quantum technologies. The quest for Majorana bound states in hybrid superconducting systems and topological quantum computing are also on our agenda. We hope the workshop will foster collaborations and inspire its attendants to tackle new problems with great ideas which make a difference for fundamental physics, lead to applications, and advance futuristic technologies.

### ORGANIZING COMMITTEE:

Daniel Loss (University of Basel)

Francisco Guinea (IMDEA Nanoscience, DIPC, Ikerbasque)

Andres Arnau (CFM-UPV/EHU, DIPC)

Vitaly Golovach (CFM-UPV/EHU, DIPC, Ikerbasque)

## Helburuak

To bring together leading experts working on the frontiers of the design of advanced materials with quantum functionalities.

To present and discuss the recent developments in the field and determine directions of future research.

To facilitate the discussion and foster collaborations between theoretical and experimental physicists, including local scientists from Donostia.

To create the conditions for young and brilliant scientists to present their work and make themselves visible in this rapidly developing field.

### Ikastaroaren laguntzaile espezifikoak



## Zuzendaritza



### **Vitaly Golovach**

Ikerbasque Research Associate, Materialen Fisika Zentroa CFM and Donostia International Physics Center, Ikerbasque Research Fellow

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## **Irakasleak**



**Silvano De Franceschi**

CEA

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**Eugene Demler**

ETH

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**Klaus Ensslin**

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**Attila Geresdi**

Chalmers University of Technology

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**Georgios Katsaros Danzinger**

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**Alexander Khaetskii**

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**Jelena Klinovaja**

University of Basel

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**leo kouwenhoven**

Delft University of Technology

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**Yuval Oreg**

Weizmann Institute of Science, Professor

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**Stuart Parkin**

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**Gloria Platero Coello**

ICMM-CSIC

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**Marco Polini**

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**Elsa Prada Núñez**

Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC)

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**Yaroslav Tserkovnyak Tserkovnyak**

UCLA

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**Felix von Oppen**

FU Berlin

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**Amir Yacoby**

Harvard University

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**Dominik Zumbuehl**

University of Basel

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# Matrikula prezioak

REGISTRATION FEES

2022-07-10 ARTE

Regular Attendant

300,00 EUR

# **Kokalekua**

## **Miramar Jauregia**

Mirakontxa pasealekua 48, 20007 Donostia

Gipuzkoa