Quantum Designer's Special Edition: 100 years of Quantum (QD100)

14.Jul - 18.Jul 2025

Cód. Z13-25

Mod.:
Presencial

Edición
2025

Tipo de actividad
Workshop

Fecha
14.Jul - 18.Jul 2025

Ubicación
Palacio Miramar

Idiomas
Inglés

Validez académica
50 horas

Web
https://qd100.dipc.org

DIRECCIÓN

Vitaly Golovach, Materialen Fisika Zentroa CFM-UPV/EHU and Donostia International Physics Center, Ikerbasque Research Fellow

Comité Organizador

Descripción

Quantum design is the concept of implementing interesting ideas, often expressed as theoretical ‘toy models’ or computational algorithms, in modern material systems with advanced functionalities. Moiré materials, quantum computing, topological states of matter, intriguing magnonic and superconducting states are just a few examples of different implementations. They provide a rich playground for basic research and applications.

This special edition of the Quantum Designer Physics Workshop offers the participants to celebrate the year of Quantum Science and Technology in 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 with different layers of complexity, 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, spintronics, and the quest for topologically non-trivial states in hybrid superconducting systems. 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 quantum technologies.

ORGANIZING COMMITTEE

- Daniel Loss (University of Basel)
- Francisco Guinea (IMDEA Nanoscience & DIPC)
- Roman Lutchyn (Microsoft Azure Quantum, Santa Barbara)
- Jelena Klinovaja (University of Basel)
- Vitaly Golovach (CFM-UPV/EHU, DIPC, Ikerbasque)

Objetivos

To gather leading experts in the field of quantum design and advanced materials with quantum functionalities.

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

To facilitate communication and foster collaborations between theoretical and experimental physicists.

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

Colaboradores específicos del curso

Donostia International Physics Center

NCCR SPIN

Microsoft

EUSKO JAURLARITZA
GOBIERNO VASCO

ZIENTZIA, UNIBERTSITATE ETA BERRIKUNTZA SAILA

DEPARTAMENTO DE CIENCIA, UNIVERSIDADES E INNOVACIÓN

Dirigido por:

Vitaly Golovach

Materialen Fisika Zentroa CFM-UPV/EHU and Donostia International Physics Center, Ikerbasque Research Fellow

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Profesorado

David Aasen

Microsoft

Shaffique Adam

Washington University

Guido Burkard Burkard

University of Konstanz

William Coish

Department of Physics, McGill University

Sankar Das Sarma

University of Maryland

Fernando González Zalba

M. Fernando Gonzalez Zalba is an Ikerbasque Professor at CIC nanoGUNE where he leads the Quantum Hardware Group since 2024. He is also Head of Quantum Hardware Development at Quantum Motion, a start-up dedicated to the development of quantum computing hardware based on silicon technology. He holds a UKRI Future Leader Fellowship for the development of scaled up quantum computing architectures based on silicon technology. Furthermore, he is Associate Lecturer at the University of Cambridge - where he teaches Low-Dimensional Physics – he is Honorary Research Associate at University College London – for his dedication to graduate training – and Quondam Fellow at Hughes Hall, a University of Cambridge College. He obtained a PhD from the University of Cambridge with a thesis on Single-atom Electronics in 2013 and was Head of Quantum Computing at the Hitachi Cambridge Laboratory, a R&D centre of Hitachi Europe. In 2016, he received the R&D Technology Award from Hitachi's Centre for Social Innovation for the development of silicon-based quantum computing technology. He was awarded the Young Scientist Award by the Spanish Royal Society of Physics in 2017, and in 2019 became a Royal Society Industry Fellow.

Maxim Ilin

Long Ju

Massachusetts Institute of Technology

Michael Manfra Manfra

Purdue University

Greg Mazur

University of Oxford

Ivan Morera Navarro

ETH Zürich

Gloria Platero Coello

ICMM-CSIC

Elsa Prada Núñez

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Pablo San-Jose

Consejo Superior de Investigaciones Científicas (ICMM-CSIC)

Jay Sau Sau

University of Maryland, College Park

PASCAL SIMON SIMON

University Paris Saclay

Zihlmann Simon

CEA Grenoble

Seigo Tarucha -

RIKEN

Even Thingstad

University of Basel

Mircea-Teodor Trif Trif

MagTop/IFPAN, Polish Academy of Sciences

Felix von Oppen

FU Berlin

Amir Yacoby

Harvard University

Ali Yazdani

Princeton University

Precios matrícula

INFORMACIÓN IMPORTANTE para los **miembros del GER**

El Grupo Español de Reología (GER) ofrece un total de siete becas para cubrir los gastos de inscripción, las cuales serán asignadas conforme a los siguientes criterios: se dará prioridad a los estudiantes de doctorado, a las presentaciones orales sobre los posters, y, en función del número de solicitudes, se valorará la posibilidad de asignar más de una beca por grupo. Para realizar la solicitud, enviar un mensaje a ger@rseq.org.

REGISTRATION FEES	HASTA 11-07-2025
Fee Waiver	0 EUR
Regular Attendant	450,00 EUR

Lugar

Palacio Miramar

Pº de Miraconcha nº 48. Donostia / San Sebastián

Gipuzkoa