



# Topological States of Matter (TopoStates)

**05.Sep - 10.Sep 2016**

**Cód. 060-16**

**Mod.:**  
Presencial

**Edición**  
2016

**Tipo de actividad**  
Workshop

**Fecha**  
05.Sep - 10.Sep 2016

**Ubicación**  
Palacio Miramar

**Idiomas**  
Inglés

**Web**  
<http://topostates.dipc.org>

## **DIRECCIÓN**

**Sebastian Bergeret**

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

## **Comité Organizador**

Fundación  
BBVA



## Descripción

Website of the congress: <http://topostates.dipc.org/>

Topological quantum matter represents a new class of materials which are characterized by non-local topological properties emerging from purely local (microscopic) degrees of freedom. Our understanding of topological states of matter has been broadened enormously over the last decade. The progress on the theoretical end includes, for example, the prediction of topological insulators and superconductors as well as the exploration of the interplay between symmetry and topology with an aim to classify topological states. A remarkable progress has been also made on the experimental front. Inspired by the theoretical predictions, experimentalists in laboratories across the world are now trying to realize the simplest topological quantum states. Among them much attention attracted Majorana systems, e.g. superconductors that support Majorana zero-energy modes (Majoranas). It is believed that the defects carrying these modes obey non-Abelian statistics and, as such, might be of potential use for quantum computing. There has been remarkable experimental progress in the quest to find Majoranas in various superconducting heterostructures involving semiconducting wires, ferromagnetic chains, and quantum spin Hall materials.

## Objetivos

This conference will focus on the topologically ordered phases of matter, their experimental signatures, and their possible applications for topologically-protected quantum computations. The aim of this conference is to bring together researchers working on different subjects related to the topological states of matter and to facilitate their interdisciplinary collaboration through the exchange of their knowledge, skills and methods. Such collaboration should stimulate new ideas and approaches in the rapidly developing field of the topological states of matter. The proposed conference is designed to be interdisciplinary, as we aim to bring together leading experts in the field, both experimentalists and theorists. Such cross-subject conversation is critical to further advance our understanding of the conditions under which topological phases may be realized and how they can be harnessed for quantum information processing. We believe that the proposed conference is very timely and has the potential to make a significant and lasting effect on the scientific community.

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## Colaboradores específicos del curso



**Dirigido por:**



**Sebastian Bergeret**

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**Vitaly Golovach**

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

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# Precios matrícula

REGISTRATION

HASTA 10-09-2016

GENERAL

150,00 EUR

# **Lugar**

## **Palacio Miramar**

Pº de Miraconcha nº 48. Donostia / San Sebastián

Gipuzkoa