Summer School on the Calculation of Ionic Quantum and Anharmonic Effects with the Stochastic Self-Consistent Harmonic Approximation (SSCHA school 2023)

26.juin - 30.juin 2023

Cod. Z07-23

Modalité:
En personne

Édition
2023

Type d'activité
Workshop

Date
26.juin - 30.juin 2023

Location
Materialen Fisika Zentroa (CSIC-UPV/EHU)

Langues
Anglais

Reconnaissance officielle par l'État
50 heures

Comité d'organisation

Description

The efficient and accurate calculation of how ionic quantum and thermal fluctuations impact the free energy of a crystal, its atomic structure, and phonon spectrum is one of the main challenges of solid state physics, especially when strong anharmonicy invalidates any perturbative approach. To tackle this problem, this school combines theoretical lectures as well as hands-on sessions on the stochastic self-consistent harmonic approximation (SSCHA) method, which is devised to tackle efficiently these problems, given by the developers of the code.

ORGANIZING COMMITTEE:

Ion Errea (UPV/EHU, Spain)

Diego Martínez (CFM, Spain)

Lorenzo Monacelli (EPFL, Switzerland

Raffaello Bianco (UNIMORE, Italy)

Objectifs

The main goal of the school is to provide a deep theoretical and practical understanding of the SSCHA code, as well as to give the participants the option to share their own research.

Collaborateurs spécifiques au cours

Donostia International Physics Center

Materials Physics Center
Centro de Física de Materiales
Materialen Fisika Zentroa

Universidad del País Vasco
Euskal Herriko Unibertsitatea

European Research Council

Directed by

Ion Errea

UPV/EHU

Ion Errea is an Associate Professor at the University of the Basque Country and leads the Quantum Theory of Materials group at the Centro de Física de Materiales. His research focusses on the development of theoretical methods for calculating complex properties of solids, such as quantum and anharmonic effects in atomic vibrations and the electron-phonon interaction, and the application of these methods in hydrogen-based superconductors, thermoelectric materials, phase transitions in solids, nanostructures, etc. He is an ERC grantee, research associate at the Donostia International Physics Center, and member of Jakiunde.

Professeurs

Raffaello Bianco

Dorde Dangic

University of the Basque Country

Guglielmo Marchese

La Sapienza University, Italy

Giovanni Marini

ISTITUTO ITALIANO DI TECNOLOGIA

Diego Martínez Gutiérrez

CFM

Francesco Mauri

University of Rome

Lorenzo Monacelli

EPFL

Antonio Siciliano Siciliano

Sapienza, University of Rome

Tarifs inscription

REGISTRATION FEES	JUSQU'AU 18-06-2023
Fee Waiver	0 EUR
Standard fee	150,00 EUR

Lieu

Gipuzkoa