

Workshop of Physics for knowledge and technology

Santiago de Compostela, 12 de septiembre de 2024

Introduction:

Physics is a key field to understand the world and to develop technologies that make our life easier and more comfortable. One example is the discovery by Prof. von Klitzing in 1980 of the Quantum Hall Effect, which gave rise to one of the universal constants, the *von Klitzing constant* ($R_K = h/e^2 = 25812,807... \Omega$), and is currently applied to get an accurate value of the unit of electrical resistance, the Ohm (Ω). We want to take advantage of the presence of Prof. von Klitzing in Santiago de Compostela, in the framework of the Conciencia Program, to organize a workshop to discuss some physical effects and their applications.

Program:

12:00 Prof. Luis Viña (Universidad Autónoma de Madrid and President of the Royal Spanish Society of Physics, RSEF)

“Memories of the mid-1980s when von Klitzing received the Nobel Prize”

12:15 Prof. José María de Teresa (Instituto de Nanociencia y Materiales de Aragón and President of the Condensed Matter Physics Division of the European Physical Society),

“Use of focused electron and ion beams to create nanodevices”

12:30 Dr. María José Calderón (ICMM - CSIC)

“Strong correlations in moiré systems”

12:45 Prof. Gloria Platero (ICMM - CSIC)

“Hole flying qubits in quantum dot arrays”

13:00 Dr. Rafael Ramos Amigo (Universidade de Santiago de Compostela)

“Spin current generation and detection in magnetic insulators: the spin Seebeck effect”

13:15 Prof. Enrique Díez (Universidad de Salamanca)

“Phonon-mediated room-temperature quantum Hall transport in graphene”

13:30 Prof. Víctor Pardo (Universidade de Santiago de Compostela)

“Interplay between charge density waves and electronic orders in 2D transition metal dichalcogenides”