Departamento de Física de la Materia Condensada

Universidad Zaragoza

SEMINARIOS 2025

Vladimir Fomin

Institute for Emerging Electronic Technologies (IET),
Leibniz Institute for Solid State and Materials Research Dresden (IFW)

Superconductor 3D Nanoarchitectures

In 3D superconductor nanoarchitectures, enabled by the advanced high-tech fabrication techniques, a topological transition between the vortex- and phase-slip-regime determines the magnetic-field-voltage and current-voltage characteristics revealing a nontrivial topology of SC screening currents. An abrupt switch-on of the transport current triggers the transition from the vortex- to phase-slip-regime in superconductor open nanotubes. Various dynamic topological transitions in them take place under a combined dc+ac transport current. Vortex chains, vortex jets, and phase-slip regimes occur in superconductor open nanotubes due to the inhomogeneity of the normal magnetic field component, leading to microwave generation.

Ph.D. degree (State University of Moldova, 1978), Doctor habilitat (Academy of Sciences of Moldova, 1990), University Professor in Theoretical Physics (SUM, 1999), Diploma of a Scientific Discovery (Academy of Natural Sciences of Russia, 1999). Honorary Member of the ASM (2007). Since 2009, Research Professor at Leibniz IFW Dresden. Research expertise in nanophysics: topological effects in quantum rings, topology- and geometry-induced properties of 3D superconductor micro- and nanoarchitectures and patterned superconductors, topological states of light and spin-orbit coupling in optical microcavities, optical properties of quantum dots, thermoelectric properties of semiconductor nanoarchitectures, phonons, vibrational excitations and polaronic effects in nanostructures, magnetopolarons and magneto-Raman scattering in TMDs.

Con la colaboración de:

Facultad de Ciencias
Universidad Zaragoza

INMA

CSIC Consejo Superior de Investigaciones Científicas
Universidad Zaragoza

13 Marzo (jueves)

HORA: 12:30

**SALA DE GRADOS
FACULTAD DE CIENCIAS**