

Abstract F. Dalhem: *Looking to the nanoworld with local scanning probes. Application to nanotriboelectrification*

Quantum Hall effect and superconductivity are two quantum phenomena remaining at the macroscopic scale and showing non dissipative current flow. The development of cryogenic scanning probe microscopes in the last decade has led to a great improvement in the microscopic characterization and understanding of these quantum properties.

In this talk, I will firstly summarize my past researches on the local measurements of the quantum Hall effect and superconducting semiconductors. The second part will show an overview of my future research activity in the LTDS, which will focus on the investigation of triboelectric effects by scanning probes microscopy.

Abstract J. Scheibert: *A physical approach to fracture in friction*

I am a CNRS researcher in the LTDS from last April. After giving a brief survey of my past research, I will present the main ideas of my scientific project in the lab. I will first try to convince you that, in many instances, frictional motion occurs through fracture-like propagative phenomena. I will then sketch a coupled experimental/numerical approach to better understand these phenomena.