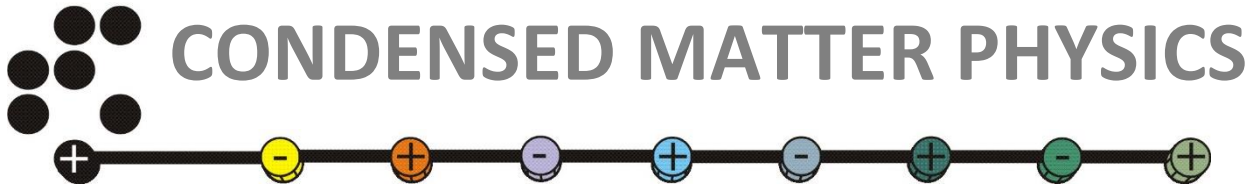


F-5 SEMINAR



*Friday, March 3, 2023
at 10:30 AM*

*in the seminar room of physics (room 106)
Condensed Matter Physics, Jožef Stefan Institute*

***Marion van Midden Mavrič, PhD**
Jožef Stefan Institute, Ljubljana*

How to decouple the topography from the electronic and magnetic structure of surfaces using scanning probe microscopy?

Scanning tunneling microscopy (STM) is a well-established technique for characterizing surfaces of conducting materials with atomic resolution. Nevertheless, it has some significant drawbacks. Since the tunneling current depends on a convolution of the local electronic density of states and the sample topography, it is often difficult to distinguish individual contributions.

In recent years, STM tips are often being replaced by qPlus sensors, which enable measuring tip-sample forces in addition to the information we would obtain with the standard STM. This allows not only the decoupling of geometric and electronic contributions, but also the measurement of forces with atomic resolution and the imaging of non-conducting samples. Similar to the spin-polarized STM, information about the magnetic structure of the surface can be obtained if a magnetic qPlus sensor is used.

I will present the upgrade of our existing STM with a qPlus sensor, which is currently underway. Using the results obtained during my postdoc, I will show what kind of measurements will be possible with the upgraded system.

You are cordially invited to attend.