

# Seminario INRiM

## Imaging weak magnetic fields on the nanometer-scale

**Speaker:** Dott. Martino Poggio (Università di Basilea)

### *Abstract*

The ability to map magnetic field sensitively and on the nanometer-scale - unlike global magnetization or transport measurements - overcomes ensemble or spatial inhomogeneity in systems ranging from arrays of nanometer-scale magnets, to superconducting thin films, to strongly correlated states in van der Waals heterostructures.

Local imaging of nanometer-scale magnetization, Meissner currents, or current in edge-states is the key to unraveling the microscopic mechanisms behind a wealth of new and poorly understood condensed matter phenomena. I will discuss efforts in our group aimed at developing and applying high-sensitivity, high-resolution, non-invasive magnetic scanning probes. In particular, we have been developing nanometer-scale superconducting quantum interference devices fabricated at the apex of a scanning probe tip as well as ultra-sensitive magnetic force microscopy based on nanowire probes.

I will discuss recent imaging experiments with these tools on few-layer van der Waals magnets, the surface of a bulk chiral magnet, and a ferromagnetic topological insulator, which yield new insights into their underlying magnetism.

**Data: 25/05/2026**

**Ore: 14:00**

**Campus INRiM, Strada delle Cacce 91, Torino  
Biblioteca - Palazzina B, Piano terra**

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