



Ben-Gurion University of the Negev
Blaustein Institutes for Desert Research

The Swiss Institute for Dryland Environmental and Energy Research
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Imaging phase transitions with scanning SQUID

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Abstract:

We use a local magnetic imaging technique, scanning SQUID microscopy, to map the spatial distribution of electronic states near surfaces and interfaces. We track conductivity, superconductivity and magnetism in systems undergoing phase transitions, where the local picture is particularly meaningful.

I will describe two recent findings: (1) Conduction landscape that changes dramatically near the metal to insulator transition at the 2D $\text{LaAlO}_3/\text{SrTiO}_3$ interface. (2) Non-trivial behavior of superconducting fluctuations near the superconductor to insulator transition in NbTiN . The local view allows us to investigate the way local features control the behavior.

Date & Location:

Tuesday, January 14, 2020, 11:00

Lecture room, Physics Building (ground floor)