Colloquium

Inaugural Lecture | Symmetry Probes of Quantum Matter & Manifolds and Diffeomorphisms

Veronika Sunko & Xujia Chen
ISTA

Host: Mikhail Lemeshko

Veronika Sunko | Symmetry Probes of Quantum MatterThe central goal of condensed matter physics is to uncover, understand, and ultimately control novel phases of matter. Progress relies on continuous interactions between theory and experiment, yet the two often remain separated: theories predict phenomena that experiments struggle to test, while experiments reveal behaviors that theories can at best postdict. My research is driven by the ambition to narrow this gap, an effort that is inherently collaborative, bringing together theorists, synthesis groups, and complementary experimental techniques.In this talk, I will outline how symmetry can serve as a bridge: experimental identification of symmetry can test and constrain theories. I will describe our strategy of developing and utilizing experimental probes of symmetry, and the opportunity these efficient and sensitive experiments offer for altermagnets, a new class of magnetic materials where theoretical predictions are outpacing data. More broadly, this symmetry-based toolkit is applicable to a wide range of quantum materials, and it will shape the research of my group in the years to come._____Xujia Chen | Manifolds and DiffeomorphismsManifolds are one of the fundamental objects studied in geometry and topology, and diffeomorphisms are the "self-symmetries" of a smooth manifold. I will give an introduction to these concepts, and show you what some research questions in this area look like. This talk is mainly targeted at non-mathematicians

Monday, May 11, 2026 11:30am - 12:30pm
Raiffeisen Lecture Hall

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.