

Physikalisches Kolloquium

Abhay Pasupathy, Columbia University New York
**»Imaging Broken Symmetry States in Quantum Materials
with Scanning Tunneling Microscopy«**

Einführung: J. Schmalian

Electrons in solids often form states that break the underlying translational and rotational symmetries of the crystal lattice. Examples of such states include charge and spin density waves (broken translational symmetry) and electronic nematics (broken rotational symmetry). The symmetry breaking can have important consequences for the low-energy electronic properties of the solid that are important for its observed properties. In recent years, scanning tunneling microscopy has emerged as a unique tool that has the ability to visualize these phases with extremely high simultaneous spatial and energy resolution. In this talk, I will describe a few recent specific instances of such phases in low-dimensional solids, including charge density waves in graphene and other 2D materials and electron nematics in the pnictides. I will also describe recent experimental and analysis developments of the technique itself and what we can expect in the coming decade.

Freitag, 19.10.2018, 15:45 Uhr,

**KIT, Campus Süd,
Otto-Lehmann-Hörsaal, Physik-Flachbau (Geb. 30.22).
Anschließend Nachsitzung.**