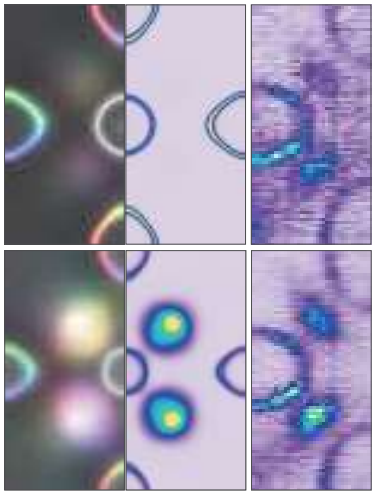
Postdoc/Ph.D. Solid State Theory

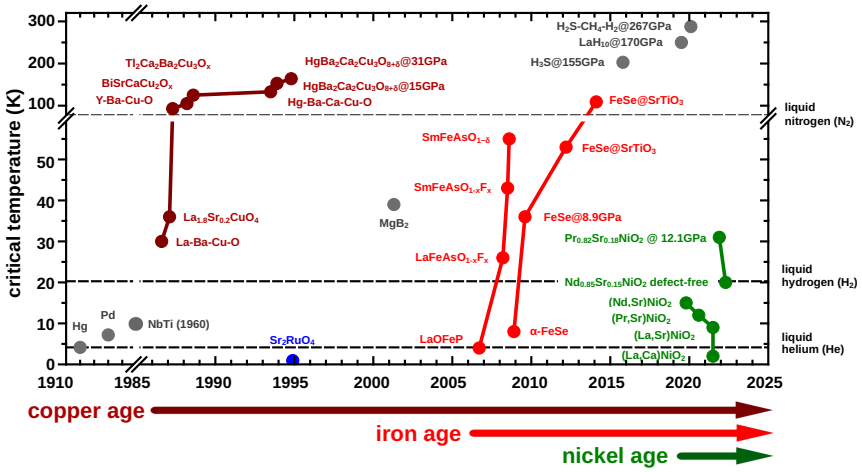
There are two vacancies for either a young postdoc (2 years) or a Ph.D. student (3 years) in Vienna.

The aim of the **first project**, within the DFG/FWF Research Unit QUAST, is to study heavy Fermion systems such as $Ce_3Bi_4Pd_3$ by means of material-specific **DFT+DMFT** (density functional theory plus dynamical mean field theory) and model calculations. The particular focus is on the aspects of **topology** and the evolution of **quantum information measures** around **quantum critical points**.

The **second project** is on the **novel nickelate superconductors**, using **DFT+DMFT** and **dynamical vertex approximation** (DΓA). The comparison to cuprates and experiment (ARPES, neutron, optics RIXS, T_c, superconducting gap), offers a unique new opportunity to better understand high-temperature superconductivity.



Project 1: Topological surface states, comparing experiment and theory.



Project 2: The age of nickelate superconductors offers a new perspective for understanding high-temperature superconductivity.

We offer a research topic at the scientific forefront in an international and vivid research environment. Vienna is a favorable location as regards culture and nature. For information on QUAST see for5249.org, for the group see www.ifp.tuwien.ac.at/cms.

Candidates should have excellent skills in theoretical physics and/or scientific programming. Please send your application and CV (for the Ph.D. position including a detailed list of grades) to Prof. Karsten Held (held@ifp.tuwien.ac.at).