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$_3$Bi$_4$Pd$_3$ 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 (DGA). 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).