

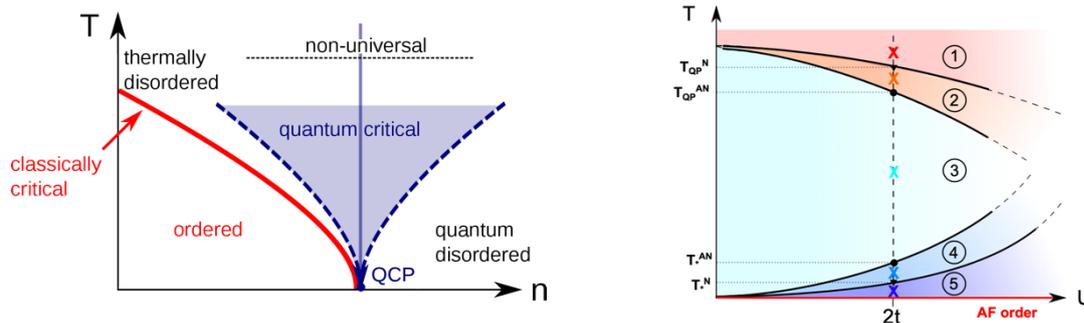


Max-Planck-Institut
für Festkörperforschung

Ph.D. in Quantum Matter Theory



Materials with strong electronic correlations are amongst the most intriguing topics at the forefront of research in condensed matter physics. On the one hand, they exhibit fascinating phenomena like quantum criticality and high-temperature superconductivity, bearing a high potential for applications. On the other hand, they are theoretically very appealing due to their limited understanding, even on the very fundamental level.



Within the research group “**Theory of Strongly Correlated Quantum Matter**”, starting from September 2020 at the MPI-FKF in Stuttgart, the frontier of this fundamental understanding will be pushed by applying cutting-edge numerical quantum field theoretical methods [dynamical mean field theory (DMFT), its cluster (CDMFT, DCA) and diagrammatic (DGA) extensions, diagrammatic Monte Carlo (DiagMC)] to **quantum critical systems, high-temperature superconductors, Mott insulators** and **magnetically frustrated systems**, both in the purely model (Hubbard model, periodic Anderson model) as well as material oriented (heavy fermions, cuprates, organics) context.

The duration of the PhD position is three years with earliest starting dates in September 2020. There will be vast opportunity to interact with other researchers at the Max-Planck Institute for Solid State Research (Stuttgart), at the Center for Computational Quantum Physics (Flatiron Institute, New York), the École Polytechnique and Collège de France (Paris) and the TU Wien (Vienna). More information about possible research topics is available under <http://www.thomas-schaefer-physics.com>.

The successful candidate (m/f/d) should be highly motivated, have outstanding skills in theoretical physics, hold a Master’s degree or Diploma in (theoretical) physics, preferably with a condensed matter background, and should be fluent in English. Experience with scientific programming (Python, C++, Fortran) and basic numerical methods is highly appreciated.

If you are interested in this position, please send your application including a motivation letter, a full CV, a transcript of your grades and (if applicable) a list of publications and awards in a single PDF file to Dr. Thomas Schäfer (thomas.schaefer@college-de-france.fr). Please also arrange for two reference letters being sent to the same address. Alternatively, an application via the International Max-Planck Research School (<https://www.imprs-cms.mpg.de>) is possible.