



# Gapless Fermions - from Fermi liquids to strange metals

## International School 17 - 28 February 2020

Properties of strongly correlated metals, often dubbed as strange metals, are rather poorly understood in comparison to their weakly interacting counterparts (normal fermi liquids). This is in spite their ubiquity - normal state of high temperature superconductors; metals with fluctuating magnetism; gapless quantum spin liquids, to name a few. The aim of this winter school is to teach the next generation of young researchers the basics and central developments of the study of correlated metals.



### Topics:

- Dirac and Weyl Fermions in condensed matter
- Renormalisation group techniques for relativistic and non-relativistic fermions
- Fermi and non-fermi liquids
- Kondo effect and Heavy fermions
- Tomonaga Luttinger Liquids
- Quantum Monte-Carlo in metals
- Transport in metallic systems
- Experimental realisations of strange metals
- Metal at half filled Landau level

### Invited speakers:

(\*to be confirmed)

F. Assaad (DE)  
J. Checkelsky (US)  
C. Felser (DE)  
A. Georges\* (US)  
T. Giamarchi (CH)  
I. Herbut (CH)  
S. Lee (CA)  
A. P. Mackenzie (DE)  
W. Metzner (DE)  
J. Schmalian (DE)  
R. Shankar (US)  
V. Sunko (DE)  
M. Vojta (DE)  
Y. You (US)

### Scientific coordinators:

Subhro Bhattacharjee  
Bangalore, India

Roderich Moessner  
Dresden, Germany

Aline Ramires  
Dresden, Germany

### Organisation:

Maria Voigt  
MPIPKS Dresden



Applications received before 31st October 2019 are considered preferentially.

Applications are welcome and should be made by using the application form on the event's web page. The number of attendees is limited. The registration fee for the international school is 140 Euro and should be paid by all participants. Costs for accommodation and meals will be covered by the Max Planck Institute. Limited funding is available to partially cover travel expenses.

### For further information please contact:

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