

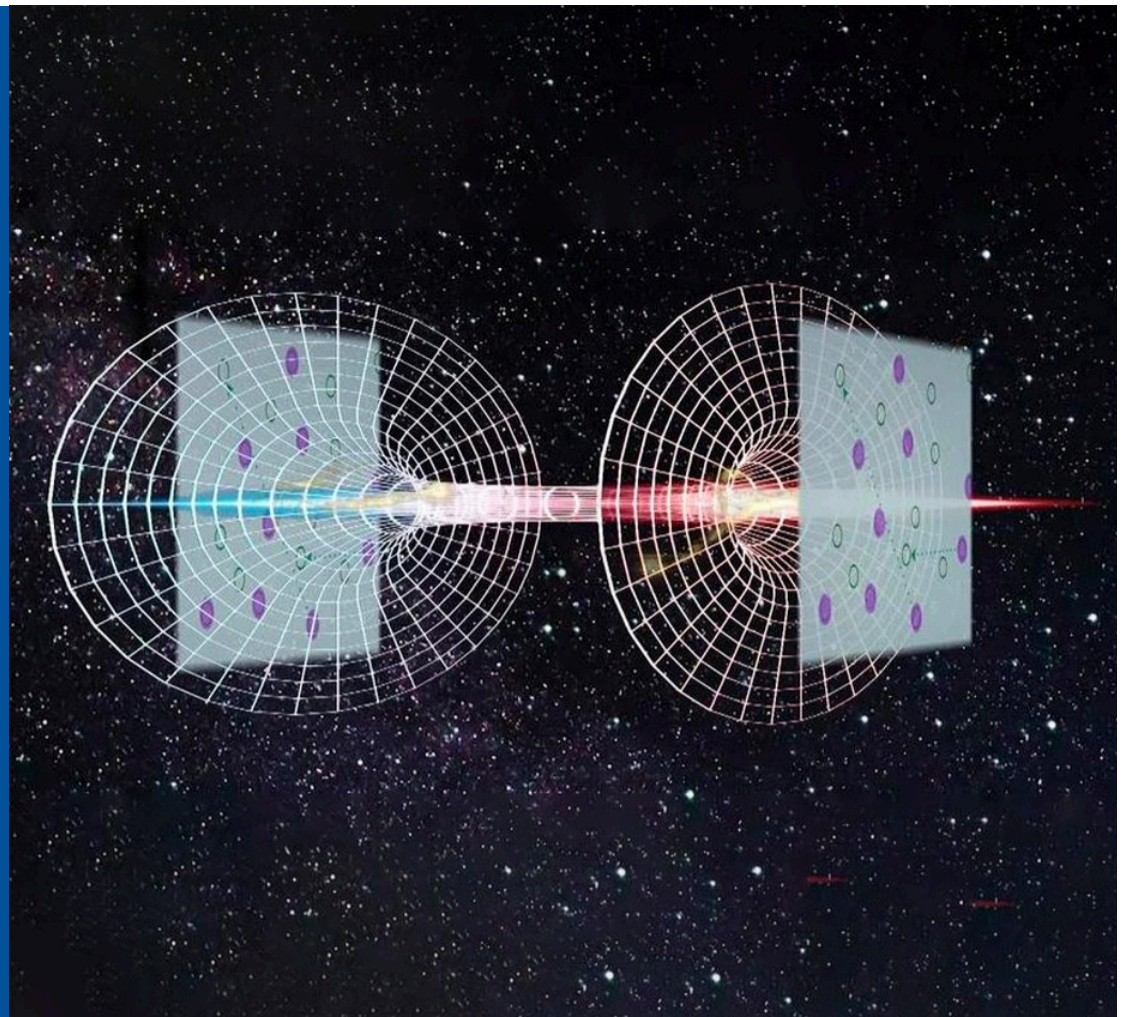
Amphithéâtre Maurice Halbwachs

Organizers : Antoine GEORGES and Subir SACHDEV

June 2-3, 2022  
Colloque

# Strange Metals, SYK Models and Beyond

This mini-workshop will focus on the Sachdev-Ye-Kitaev (SYK) models and their generalizations, especially in connection to the physics of 'strange metals' without quasiparticle excitations. Related topics will also be represented, such as the quantum dynamics of these systems, connections to quantum gravity through holography and the phenomenology and theory of transport in quantum materials.



## Thursday 2<sup>nd</sup> June 2022

All talks are 35'+10' questions

- 9h00 **Welcome**
- 9h05 Pengfei Zhang (Caltech)  
**Information Scrambling at Late Time**
- 9h50 Laura Foini (IPhT, CEA Saclay)  
**Quantum bounds and fluctuation-dissipation relations**
- 
- 10h35 Break
- 
- 11h15 Koenraad Schalm (Institut Lorentz, Leiden)  
**Scrambling: strong/weak, micro/macro, early/late**
- 12h00 Marco Schiro (Collège de France)  
**Dynamics, Chaos and Energy Transport through a Strange Quantum Bath**
- 
- 12h45 Lunch (self-organized)
- 
- 14h30 Nigel Hussey (Radboud University, Nijmegen)  
**Compartmentalizing the cuprate strange metal**
- 15h15 Catherine Pépin (IPhT, CEA Saclay)  
**Charge order and strange metal in cuprate superconductors**
- 
- 16h00 Break
- 
- 16h45 Lucile Savary (ENS Lyon)  
**Phonon thermal Hall conductivity from scattering with collective fluctuations**
- 17h30 Evgatar Tulipman (Weizmann Institute)  
**Strongly coupled phonon fluid and Goldstone modes in an anharmonic quantum solid: Transport and chaos**
- 
- 19h45 Workshop dinner (invited speakers and guests)

## Friday 3<sup>rd</sup> June 2022

- 9h00 Gaël Grissonnanche (Cornell University)  
**Planckian dissipation in a cuprate strange metal: scattering rate, thermoelectric response and field dependence**
- 9h45 Dirk van der Marel (University of Geneva)  
**Scaling properties of the optical conductivity of quantum critical cuprates**
- 
- 10h30 Break
- 
- 11h15 Olivier Parcollet (Flatiron Institute, New York and IPhT, CEA Saclay)  
**Planckian Metal at a Doping-Induced Quantum Critical Point**
- 12h00 Jörg Schmalian (Karlsruhe Institut für Technologie)  
**SYK superconductors and their holographic duals**
- 
- 12h45 Lunch (on-site, for registered participants)
- 
- 14h30 Silke Paschen (TU-Wien)  
**Strange metal behavior in heavy fermion compounds**
- 15h15 Julian Sonner (University of Geneva)  
**SYK: from quantum ergodicity to quantum gravity**
- 16h00 Blaise Goutéraux (CPHT, Ecole Polytechnique)  
**Charge transport in gapless, pinned charge density waves**
- 
- 16h45 Conclusion, Break and Discussions

Image : © NHK TV program 'A Black Hole in the Palm of Your Hand,' School of Science, The University of Tokyo



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—1530—

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Année  
académique  
2021/2022

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