

Precision many-body physics 2023

Paris, June 12-14

Venues:

Collège de France 11 place Marcelin Berthelot, 75005 Paris (room Halbwachs)

Tuesday morning talks: campus des **Cordeliers**
15 rue de l'Ecole de Médecine, 75006 Paris (room Farabeuf)

Monday

8h40 Arrival

8h50 Welcome

9h **Steven White** [[slides](#)]
“Does the single band Hubbard model describe superconductivity in the cuprates ? ”

9h45 **André-Marie Tremblay** [[slides](#)]
“Mechanism of superconductivity in cuprates : oxygen as a witness”

10h30 coffee break

11h05 **Anna Tamai** [[slides](#)]
“Fast and furious: the fate of quasiparticles at high temperature in Sr_2RuO_4 ”

11h50 **Waseem Bakr** [[abstract](#)] [[slides](#)]
“Quantum gas microscopy of correlated systems with new ingredients:
kinetic frustration and dipolar interactions”

12h35 lunch break*

14h **Nikolay Prokofiev** [[abstract](#)] [[slides](#)]
“Coulomb pseudopotential in metals: when multiple mistakes cancel out”

14h45 **Dominika Zgid** [[abstract](#)]
“GW in gaussian Bloch orbitals for solids - relativistic effects, pseudopotentials,
and impacts of different self-consistency cycles and vertex”

15h30 **Fedor Simkovic**
“Origin and fate of the pseudogap in the doped Hubbard model”

16h15 – 18h coffee break & [poster session 1](#)

Tuesday (morning talks @ *campus des Cordeliers*)

8h50 **Andrew Millis** [[abstract](#)]
“Moire and beyond: van der Waals materials as laboratories for many-body physics”

9h35 **Immanuel Bloch** [[edited slides](#)]
“Probing equilibrium and non-equilibrium dynamics of the Hubbard model
with ultracold atoms: non-local correlations and full counting statistics”

10h20 coffee break

10h55 **Cécile Repellin**
“Signatures of fractional quantum Hall states of few bosons in ultracold gases”

11h40 **Martin Zwierlein**
“Heat transport and fermion pairing in strongly interacting Fermi gases”

12h25 *lunch break**

14h **Henning Moritz & Cesar Cabrera**

“Probing the excitation spectrum of 2D superfluid Fermi gases in the BEC-BCS crossover”

14h45 **Sanjay Reddy** [[slides](#)]

“Dense matter in neutron stars: progress, challenges, and implications”

15h30 **Alessandro Lovato** [[slides](#)]

“Solving the (nuclear) quantum many-body problem with neural quantum states”

16h15 – 18h coffee break & [poster session 2](#)

19h *dinner (for poster presenters & speakers only) @ Collège de France cafeteria*

Wednesday

9h **Kazushi Kanoda** [[slides](#)]

“Mottness-driven BEC-BCS crossover in a doped spin liquid candidate”

9h45 **Philippe Corboz** [[slides](#)]

“Tensor network studies of $\text{SrCu}_2(\text{BO}_3)_2$ under pressure and in a magnetic field”

10h30 *coffee break*

11h05 **Thierry Lahaye** [[slides](#)]

“Quantum simulation of the XY model with Rydberg atom arrays”

11h50 **Olivier Parcollet** [[slides](#)]

“Learning Feynman diagrams with tensor trains”

12h35 *lunch break**

14h **Anna Minguzzi** [[slides](#)]

“Emergence of KPZ universality in 1D exciton-polaritons”

14h45 **Anatoli Polkovnikov** [[slides](#)]

“Glassy dynamics versus localization in disordered interacting systems”

15h30 *end*

** lunch is provided for registered participants only*