GORDON AND BETTY MOORE FOUNDATION

CIFAR

CIFAR Quantum Materials

Summer School 2018
May 28-30

Welcome

It is our pleasure to welcome you to the 2018 edition of the CIFAR Quantum Materials Summer School in Montreal. The school will consist of three days of lectures and a poster session before the CIFAR main meeting. We hope this platform offers you the opportunity to learn something new, present your work, think about possible future career paths, and to make new connections and friends.

We are grateful to our speakers and to CIFAR for making this summer school possible.

-The organizing committee

Informations

The summer school and main meeting will take place at the Delta Hotel by Marriott, 475 President-Kennedy Avenue, Montreal.

Important dates for the summer school

May 27: Arrivals (Hotel check-in begins at 4 pm)
May 28: Social Event at Blumenthal (305 Rue Ste-Catherine O). In order to access the event, you must have your name badge on. Food will be served.
May 28-29-30: All day meeting
May 30 : Reception in the Foyer with the program member

Important dates for the main meeting

May 30: Welcome reception
May 31: Group dinner
May 30 - June 2: All day meeting

Schedule

Monday, May 28

07:00 — 10:00	**Breakfast and registration**
10:00 — 11:00	Simon Verret — *A visual introduction to Green's functions, superconductivity and density waves*
11:00 — 11:30	**Coffee break**
11:30 — 12:30	Glen Evenbly - *Tensor networks and applications*
12:30 — 13:30	**Lunch**
13:30 — 14:30	Laura-Isabelle Dion-Bertrand - *Careers opportunities in Physics*
14:40 — 17:30	Posters
17:30 — 18:30	**Free Time**
18:30 — 20:30	**Social Activity (*Blumental*)**

Tuesday, May 29

07:00 — 09:00	**Breakfast**
09:00 — 10:00	Eun-Ah Kim - *Applications of AI for quantum condensed matter physics*
10:00 — 10:10	**Small break**
10:10 —11:10	Eun-Ah Kim - *Part 2*
11:10 — 11:30	**Coffee break**
11:30 — 12:30	Elia Razzoli - *New approaches in Time- and Spin- resolved ARPES*
12:30 — 13:30	**Lunch**
13:30 — 14:30	Jenny Hoffman - *STM of superconductivity*
14:30 — 15:00	**Coffee break**
15:00 — 16:00	Jenny Hoffman - *STM of strongly correlated topological material (SmB_6)*
16:00 — 18:00	**Free Time**
18:00 —	**Self-organized dinner**

Schedule

Wednesday, May 30

Breakfast	07:00 — 09:00
Alannah Hallas - *Introduction to experimental aspects of frustrated magnetism*	09:00 — 10:00
Small Break	10:00 — 10:10
Stephen Hayden- *Measuring Magnetic Excitations with Neutrons*	10:10 — 11:10
Coffee Break	11:10 — 11:30
Liang Fu - *Electronic structure of twisted bilayer graphene*	11:30 — 12:30
Lunch	12:30 — 13:30
Cyril Proust - *Recent result on linear resistivity in cuprates*	13:30 — 14:30
Coffee Break	14:30 — 15:00
Joseph Maciejko - Interacting Topological Materials	15:00 — 16:00
Free time	16:00 — 19:00
Joint Reception for QM Program Members & Summer School Students	19:00 — 21:00

Thursday, May 31

Breakfast	07:00 — 08:15
Eun-Ah Kim - Learning quantum emergence with AI	08:30 — 09:15
Roger Melko - Machine learning the quantum wavefunction…	09:15 — 10:00
Coffee Break	10:00 — 11:00
Satoru Nakatsuji - Novel functional magnets based on multipoles …	11:00 — 11:45
Stephen Hayden - SDW order and magnetic excitations in $Sr_3Ru_2O_7$	11:45 — 12:30
Lunch	12:30 — 14:30
Leslie Schoop - Chemistry and topological semimetals	14:30 — 15:15
Andy Millis - CCQ and CIFAR-QM: how might we work together ?	15:15 — 15:30
Poster Ads, Poster session and coffee Break	15:30 — 19:00
Group Dinner	19:00 —

Schedule

Friday, June 1

07:00 — 08:15	**Breakfast**
08:30 — 09:15	Pablo Jarillo-Herrero — *Magic angle graphene superlattices : A new platform for strongly correlated physics*
09:15 — 10:00	Liang Fu — *A model for metal-insulator transition in twisted bilayer graphene and beyond*
10:00 — 11:00	**Coffee break**
11:00 — 11:30	Josh Folk— *Superconductivity in a strongly correlated quantum spin Hall insulator*
11:30 — 12:00	Cyril Proust — *Universal T-linear resistivity and Planckian limit in cuprates*
12:00 — 12:30	Johnpierre Paglione — *T-linear transport, Planckian limit, scale invariance and nematicity in a disordered pnictide*
12:30 — 14:30	**Lunch**
14:30 — 19:00	Poster session & Coffee break
15:30 — 17:00	Business meeting (Program members and Advisors only)
19:00 —	**Self Organized Dinner**

Saturday, June 2

07:00 — 08:15	**Breakfast**
08:30 — 09:15	Drew Potter — *On Floquet phases*
09:15 — 10:00	Clifford Hicks — *The nematic transition of FeSe and other correlated electron phenomena under uniaxial stress*
10:00 — 11:00	**Coffee break**
11:00 — 11:30	Seamus Davis — *Magnetic-field induced pair density wave state in cuprates*
11:30 — 12:00	Joseph Thywissen — Optical conductivity of ultracold fermions in optical lattices
12:00 — 12:30	Hae-Young Kee — *Kitaev spin liquid and nearby phases*
12:30 — 14:30	**Lunch**
14:30 —	**Free time & Departure**

Speakers

Simon Verret
Université de Sherbrooke

Introduction to experimental aspects of frustrated magnetism

Glen Evenbly
Université de Sherbrooke

Tensor networks and applications

Laura-Isabelle Dion-Bertrand
Photon Etc.

Careers opportunities in Physics

Eun-Ah Kim
Cornell University.

Applications of AI for quantum condensed matter physics

Elia Razzoli
University of British Columbia

New approaches in Time- and Spin- resolved ARPES

Speakers

Jenny Hoffman
Havard University

STM of superconductivity & STM of strongly correlated topological material (SmB_6)

Alannah Hallas
Rice University

Introduction to experimental aspects of frustrated magnetism

Stephen Hayden
University of Bristol

Measuring Magnetic Excitations with Neutrons

Liang Fu
MIT

Electronic structure of twisted bilayer graphene

Cyril Proust
LNCMI-Toulouse

Recent result on linear resistivity in cuprates

Joseph Maciejko
University of Alberta

Interacting Topological Materials

Thank you!

The organizing committee

Marie-Eve Boulanger
Maude Lizaire
Olivier Simard
Étienne Lantagne-Hurtubise