

HORAIRE / *PROGRAM*

**THÉORIE DES CHAMPS CONFORME ET SYSTÈMES
QUANTIQUES À PLUSIEURS CORPS**

22 août au 9 septembre 2022

***CONFORMAL FIELD THEORY AND QUANTUM
MANY-BODY PHYSICS***

August 22–September 9, 2022

Le lundi 22 août 2022 / Monday, August 22, 2022

09:00–09:30 Mots de bienvenue / *Welcoming addresses*

09:30–10:30 Igor Klebanov (Princeton University)
 «Group Invariant States as Quantum Many-Body Scars»
“Group Invariant States as Quantum Many-Body Scars”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Emilie Huffman (Perimeter Institute)
 «QMC computations on spheres»
“QMC computations on spheres”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Paola Ruggiero (King’s College London)
 «Entanglement Rényi entropies from Ballistic Fluctuations Theory : the free fermionic case»
“Entanglement Rényi entropies from Ballistic Fluctuations Theory: the free fermionic case”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:30 Silviu Pufu (Princeton University)
 «Discrete chiral symmetry and mass shift in lattice Hamiltonian approach to Schwinger model»
“Discrete chiral symmetry and mass shift in lattice Hamiltonian approach to Schwinger model”

Le mardi 23 août 2022 / Tuesday, August 23, 2022

09:30–10:30 Andrea Cappelli (INFN - Istituto Nazionale di Fisica Nucleare)
«W-Infinity Symmetry in the Quantum Hall Effect»
“W-Infinity Symmetry in the Quantum Hall Effect”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Shai Chester (Weizmann Institute of Science)
«Bootstrapping the upper critical dimension of the 3-state Potts model»
“Bootstrapping the upper critical dimension of the 3-state Potts model”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Vincenzo Alba (University of Pisa)
«Entanglement dynamics in dissipative quantum many-body systems»
“Entanglement dynamics in dissipative quantum many-body systems”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:30 F. Duncan M. Haldane (Princeton University)
«Topological Quantum Matter, Entanglement, and the Second Quantum Revolution»
“Topological Quantum Matter, Entanglement, and the Second Quantum Revolution”

16:30–18:30 Réception / *Reception* (Salle / Room 6245)

Le mercredi 24 août 2022 / Wednesday, August 24, 2022

09:30–10:30 Karyn Le Hur (École Polytechnique - CNRS)
«Fractional Entangled Topological Matter(Online)»
“*Fractional Entangled Topological Matter(Online)*”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 F. Duncan M. Haldane (Princeton University)
«Quantum Geometry in the Fractional Quantum Hall Effect I »
“*Quantum Geometry in the Fractional Quantum Hall Effect I*”

12:00–14:00 Déjeuner / *Lunch*

14:00–18:30 Après-midi libre / *Free afternoon*

18:30–21:30 Banquet / *Banquet -Auberge Le Saint-Gabriel*

Le jeudi 25 août 2022 / Thursday, August 25, 2022

09:30–10:30 Yin-Chen He (Perimeter Institute)
 «Bootstrapping critical gauge theories»
“Bootstrapping critical gauge theories”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Maria Hermanns (Stockholm University)
 «Fate of boundary modes»
“Fate of boundary modes”

12:00–13:30 Déjeuner / *Lunch*

13:30–14:30 Sung-Sik Lee (McMaster University)
 «Functional renormalization group formalism for non-Fermi liquids and the
 antiferromagnetic quantum critical metal »
*“Functional renormalization group formalism for non-Fermi liquids and the
 antiferromagnetic quantum critical metal ”*

14:30–15:30 Subir Sachdev (Harvard University)
 «Yukawa-SYK models, and a universal theory of strange metals in two
 dimensions (Online)»
*“Yukawa-SYK models, and a universal theory of strange metals in two
 dimensions (Online)”*

15:30–16:00 Pause-café / *Coffee break* (Salle / Room 6245)

16:00–17:00 Vyacheslav (Slava) Rychkov (Institut des Hautes Études Scientifiques)
 «The fate of Parisi-Sourlas Supersymmetry in Random Field Ising model»
“The fate of Parisi-Sourlas Supersymmetry in Random Field Ising model”

Le vendredi 26 août 2022 / *Friday, August 26, 2022*

09:30–10:30 Fiona Burnell (University of Minnesota)

«TBA»

À venir/TBA

10:30–11:00 Pause-café / *Coffee break* (Salle / *Room 6245*)

11:00–12:00 F. Duncan M. Haldane (Princeton University)

«Quantum Geometry in the Fractional Quantum Hall Effect II»

“*Quantum Geometry in the Fractional Quantum Hall Effect II*”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Silvia Pappalardi (Laboratoire de physique de l'école normale supérieure (LPENS))

«Quantum bounds and fluctuation dissipation theorem»

“*Quantum bounds and fluctuation dissipation theorem*”

15:00–15:30 Pause-café / *Coffee break* (Salle / *Room 6245*)

15:30–16:30 Discussions / *Discussions*

Le lundi 29 août 2022 / Monday, August 29, 2022

09:30–10:30 Han Ma (Perimeter Institute)

«Quenched mass disorder in the large N theory of vector bosons»

“Quenched mass disorder in the large N theory of vector bosons”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Joseph Maciejko (University of Alberta)

«Introduction to Quantum Criticality I»

“Introduction to Quantum Criticality I”

12:00–14:00 Déjeuner / *Lunch*

14:00–16:30 Discussions / *Discussions*

Le mardi 30 août 2022 / Tuesday, August 30, 2022

09:30–10:30 Ling-Yan (Janet) Hung (Fudan University)
«CFTs from Topological Order and Holographic Network (online)»
“*CFTs from Topological Order and Holographic Network (online)*”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Joseph Maciejko (University of Alberta)
«Introduction to Quantum Criticality II»
“*Introduction to Quantum Criticality II*”

12:00–14:00 Déjeuner / *Lunch*

14:00–16:30 Discussions / *Discussions*

Le mercredi 31 août 2022 / Wednesday, August 31, 2022

09:30–10:30 Alexander Maloney (McGill University)
 «Einstein Gravity as a Disorder Averaged CFT»
“Einstein Gravity as a Disorder Averaged CFT”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Joseph Maciejko (University of Alberta)
 «Introduction to Quantum Criticality III»
“Introduction to Quantum Criticality III”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Joseph Maciejko (University of Alberta)
 «Introduction to Quantum Criticality IV»
“Introduction to Quantum Criticality IV”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:00 Benoit Sirois (École Normale Supérieure)
 «Navigator function and the $O(n)$ archipelago»
“Navigator function and the $O(n)$ archipelago”

16:00–16:30 Shankar Ganesh (University of Alberta)
 «Continuous transition between Ising magnetic order and a chiral spin liquid»
“Continuous transition between Ising magnetic order and a chiral spin liquid”

Le jeudi 1 septembre 2022 / Thursday, September 1, 2022

09:30–10:30 Zi Yang Meng (The University of Hong Kong)

«A Sport and A Pastime : lattice model simulations on quantum phase transitions (Online)»

“A Sport and A Pastime: lattice model simulations on quantum phase transitions (Online)”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Fakher Assaad (University of Würzburg)

«Spin chains on metallic surfaces»

“Spin chains on metallic surfaces”

12:00–14:00 Déjeuner / *Lunch*

14:00–16:30 Discussions / *Discussions*

Le vendredi 2 septembre 2022 / *Friday, September 2, 2022*

09:30–10:30 David Poland (Yale University)
«Bootstrapping the CFT Landscape (online)»
“*Bootstrapping the CFT Landscape (online)*”

10:30–11:00 Pause-café / *Coffee break* (Salle / *Room 6245*)

11:00–12:00 Cenke Xu (University of California, Santa Barbara)
«An exotic metal-insulator transition and very bad metal (Online)»
“*An exotic metal-insulator transition and very bad metal (Online)*”

12:00–14:00 Déjeuner / *Lunch*

14:00–16:30 Après-midi libre / *Free afternoon*

Le lundi 5 septembre 2022 / *Monday, September 5, 2022*

Journée fériée / *Holiday*

Le mardi 6 septembre 2022 / Tuesday, September 6, 2022

09:30–10:30 Lucia Gomez Cordova (École Normale supérieure)
 «TBA (online)»
 “*TBA(online)*”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Benjamin Doyon (King’s College London)
 «Non-equilibrium steady states and fluctuations in quantum many-body systems I»
 “*Non-equilibrium steady states and fluctuations in quantum many-body systems I*”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Benjamin Doyon (King’s College London)
 «Non-equilibrium steady states and fluctuations in quantum many-body systems II»
 “*Non-equilibrium steady states and fluctuations in quantum many-body systems II*”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:30 Xueda Wen (Harvard University)
 «Floquet CFTs and Conformal Cooling (Online)»
 “*Floquet CFTs and Conformal Cooling (Online)*”

Le mercredi 7 septembre 2022 / Wednesday, September 7, 2022

09:30–10:30 Clément Berthiere (CRM-UdeM)

«Entanglement of skeletal regions»

“Entanglement of skeletal regions”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–12:00 Benjamin Doyon (King’s College London)

«Non-equilibrium steady states and fluctuations in quantum many-body systems III»

“Non-equilibrium steady states and fluctuations in quantum many-body systems III”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Eun-Ah Kim (Cornell University)

«Fractional Correlated Insulators with Fractons in Twisted Bilayer Graphene»

“Fractional Correlated Insulators with Fractons in Twisted Bilayer Graphene”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:00 Chia-Chuan Liu (University of Montreal)

«Entanglement negativity versus mutual information in the quantum Hall effect and beyond (Online)»

“Entanglement negativity versus mutual information in the quantum Hall effect and beyond (Online)”

Le jeudi 8 septembre 2022 / Thursday, September 8, 2022

09:30–10:00 Gilles Perez (CRM)

«Symmetry-resolved Rényi fidelities and quantum phase transitions»
“Symmetry-resolved Rényi fidelities and quantum phase transitions”

10:00–10:30 Ren-Bo Wang (Université de Montréal)

«Hydrodynamics and its prediction on electron spin resonance of the interacting spinon liquid in the antiferromagnetic Heisenberg spin-one-demi chains»
“Hydrodynamics and its prediction on electron spin resonance of the interacting spinon liquid in the antiferromagnetic Heisenberg spin-one demi chains”

10:30–11:00 Pause-café / *Coffee break* (Salle / Room 6245)

11:00–11:30 Santanu Dey (University of Alberta)

«Quantum-critical electrodynamics of Luttinger fermions»
“Quantum-critical electrodynamics of Luttinger fermions”

11:30–12:00 Liuke Lyu (University de Montréal)

«Phonons behave like electrons in the thermal Hall effect of the Cuprates»
“Phonons behave like electrons in the thermal Hall effect of the Cuprates”

12:00–14:00 Déjeuner / *Lunch*

14:00–15:00 Chong Wang (Perimeter Institute for Theoretical Physics)

«Average SPT and Average Anomaly (online)»
“Average SPT and Average Anomaly (online)”

15:00–15:30 Pause-café / *Coffee break* (Salle / Room 6245)

15:30–16:30 Benjamin Doyon (King’s College London)

«In every finite-range quantum spin chain, linearised Euler hydrodynamic equations hold»
“In every finite-range quantum spin chain, linearised Euler hydrodynamic equations hold”

Le vendredi 9 septembre 2022 / *Friday, September 9, 2022*

09:30–10:30 Lukas Janssen (Technical University Dresden)
«Fractionalized fermionic quantum criticality (online)»
“*Fractionalized fermionic quantum criticality (online)*”

10:30–11:00 Pause-café / *Coffee break* (Salle / *Room* 6245)

11:00–12:00 Benjamin Doyon (King’s College London)
«Non-equilibrium steady states and fluctuations in quantum many-body systems IV»
“*Non-equilibrium steady states and fluctuations in quantum many-body systems IV*”

13:00–14:00 Déjeuner / *Lunch*

14:00–16:30 Après-midi libre / *Free afternoon*