

HORAIRE / *PROGRAM*

ATELIER

AU-DELÀ DE L'INTÉGRABILITÉ. LES MATHÉMATIQUES ET LA PHYSIQUE DE L'INTÉGRABILITÉ ET SA BRISURE DANS LES PHÉNOMÈNES QUANTIQUES À BASSES DIMENSIONS FORTEMENT CORRÉLÉS

13 au 17 juillet 2015

WORKSHOP

BEYOND INTEGRABILITY. THE MATHEMATICS AND PHYSICS OF INTEGRABILITY AND ITS BREAKING IN LOW-DIMENSIONAL STRONGLY CORRELATED QUANTUM PHENOMENA

July 13–17, 2015

Conférences : salle 6254 (Pavillon André-Aisenstadt)

Pauses-café : salon Maurice-L'Abbé (salle 6245, Pavillon André-Aisenstadt)

Lectures: Room 6254 (Pavillon André-Aisenstadt)

Coffee Breaks: Salon Maurice-L'Abbé (Room 6245, Pavillon André-Aisenstadt)

Le lundi 13 juillet 2015 / *Monday, July 13, 2015*

08:30–09:10 Inscription (salle 5345) et café-croissants (salle 6245)
Registration (Room 5345) and Coffee & Croissants (Room 6245)

09:10–09:15 Mots de bienvenue / *Welcoming addresses*

09:15–09:45 Jesko Sirker (University of Manitoba)
“Low temperature dynamics of nonlinear Luttinger liquids”

09:45–10:15 Maurizio Fagotti (École normale supérieure)
“Prethermalization of entanglement entropies triggered by hidden symmetry breaking”

10:15–10:45 Maxim Olshanii (University of Massachusetts at Boston)
“An exactly solvable quantum four-body problem associated with the symmetries of an octacube”

10:45–11:15 Pause-café / *Coffee break* (Salle / Room 6245)

11:15–11:45 Vincent Pasquier (CEA/DSM/IPhT, CEA Saclay)
“Integrability and orthogonal polynomials”

11:45–12:15 Andreas Kluemper (Bergische Universität Wuppertal)
“On the finite temperature Drude weight of the spin-1/2 XXZ Heisenberg chain”

12:15–12:45 Véronique Terras (Université Paris Sud)
“The 8-vertex model with quasi-periodic boundary conditions”

12:45–14:30 Pause-déjeuner / *Lunch break*

14:30–15:00 Milosz Panfil (SISSA)
“Constructing generalised Gibbs ensembles for quantum field theories”

15:00–15:30 Robert A. Weston (Heriot-Watt University)
“Non-local currents, quantum groups and discrete holomorphicity”

15:30–16:00 Marton Kormos (Budapest University (BME))

“Quantum quenches in the sine-Gordon model: a semiclassical approach”

16:00–16:30 Gabor Takacs (Budapest University of Techno. & Economics)

“Quenching the XXZ spin chain: quench action approach versus generalized Gibbs ensemble”

Le mardi 14 juillet 2015 / Tuesday, July 14, 2015

08:30–09:00 Café croissants / *Coffee & Croissants* (Salle / Room 6245)

09:00–09:45 David Weiss (Penn State University)
“Thermalization in a slightly non-integrable 1D gases”

09:45–10:15 Rianne van den Berg (University of Amsterdam)
“Separation of relaxation time scales in a quantum Newton’s cradle”

10:15–10:45 Neil Robinson (Brookhaven National Laboratory)
“Prethermalization and beyond in the quench dynamics of a weakly non-integrable system”

10:45–11:15 Pause-café et discussions / *Coffee Break and Discussions* (Salle / Room 6245)

11:15–11:45 Anatoli Polkovnikov (Boston University)
“Quantum geometry and non-adiabatic response in integrable systems”

11:45–12:15 Aditi Mitra (New York University)
“Short-time universal scaling in an isolated quantum system after a quench”

12:15–12:45 Giuseppe Mussardo (SISSA)
“Computing the massive spectrum in non-integrable QFT”

12:45–14:30 Pause déjeuner et discussions / *Lunch Break and Discussions*

14:30–15:00 Karol Kozłowski (Université de Bourgogne)
“Microscopic approach to a class of 1D quantum critical models”

15:00–15:30 Holger Frahm (Leibniz Universität Hannover)
“Finite size spectra of the $Osp(3|2)$ superspin chain: critical properties of an intersecting loop model”

15:30–16:00 Fabio Franchini (SISSA)
“Spontaneous breaking of $U(N)$ symmetry in invariant matrix model: a novel route to localization”

16:00–16:30 Lev Vidmar (Penn State University)

“Dynamical quasicondensation of hard-core bosons at finite momenta”

16:30–18:30 Séance d’affiches et réception (Salle 6245)

Poster Session and Reception (Room 6245)

Le mercredi 15 juillet 2015 / *Wednesday, July 15, 2015*

08:30–09:00 Café croissants / *Coffee & Croissants* (Salle / Room 6245)

09:00–09:45 Bella Lake (Helmholtz-Zentrum Berlin)
“Transverse and longitudinal spinons and their confinement in an quasi-1D XXZ-antiferromagnet”

09:45–10:15 Andrew James (University College London)
“Quantum quenches in 2D with chain array matrix product states”

10:15–10:45 Romain Vasseur (Lawrence Berkeley National Lab)
“Expansion potentials for exact far-from-equilibrium spreading of particles and energy”

10:45–11:15 Pause-café et discussions / *Coffee Break and Discussions* (Salle / Room 6245)

11:15–11:45 Andreas Läuchli (Universität Innsbruck)
“Light-cone” dynamics after quantum quenches in spin chains”

11:45–12:15 Natan Andrei (Rutgers University)
“Quench dynamics of quantum integrable models”

12:15–12:45 Mathis Friesdorf (Freie Universitaet Berlin)
“Many-body localisation in its various ramifications”

12:45–14:30 Pause déjeuner et discussions / *Lunch Break and Discussions*

14:30–15:00 Tomaz Prosen (University of Ljubljana)
“Quasilocal conservation laws in integrable and nearly-integrable quantum spin chains”

15:00–15:30 Marcos Rigol (Penn State University)
“Numerical studies of integrable systems after a quench: what we have learned about the full single-particle density matrix and disorder”

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

Conférence publique
Public Lecture

16:00–17:00 Giuseppe Mussardo (SISSA)
“A brief history of low temperature physics”

Le jeudi 16 juillet 2015 / *Thursday, July 16, 2015*

08:30–09:00 Café croissants / *Coffee & Croissants* (Salle / Room 6245)

09:00–09:45 Michael Köhl (University of Bonn)
“Two-dimensional Fermi gases”

09:45–10:15 Austen Lamacraft (University of Cambridge)
“Z-measures and the non-linear Luttinger liquid”

10:15–10:45 Anna Minguzzi (CNRS)
“Parity effect and barrier renormalization in the dipole mode of a strongly correlated Bose gas”

10:45–11:15 Pause-café et discussions / *Coffee Break and Discussions* (Salle / Room 6245)

11:15–11:45 Joe Bhaseen (King’s College of London)
“Non-Equilibrium Steady States beyond integrability”

11:45–12:15 Benjamin Doyon (King’s College London)
“Far-from-equilibrium transport in many-body quantum systems”

12:15–12:45 Nicolai Kitanine (Université de Bourgogne)
“Spin chains with generic boundaries”

12:45–14:30 Pause déjeuner et discussions / *Lunch Break and Discussions*

14:30–15:00 Olalla Castro Alvarado (City University of London)
“Entanglement entropy of non-unitary quantum field theory”

15:00–15:30 Alexandre Faribault (Université de Lorraine)
“Eigenvalue-based determinants for quantum integrable models derived from the generalized Gaudin algebra”

15:30–16:00 Lea F. Santos (Yeshiva University)
“Dynamics of interacting quantum systems: Effects of symmetries, perturbation strength, and initial states”

16:00–16:15 ERC representative / *ERC representative*

Le vendredi 17 juillet 2015 / *Friday, July 17, 2015*

08:30–09:00 Café croissants / *Coffee & Croissants* (Salle / Room 6254)

09:00–09:45 Igor Zaliznyak (Brookhaven National Laboratory)
“Orbital-exchange and fractional spinon excitations in an f-electron metal Yb₂Pt₂Pb”

09:45–10:15 Rogier Vlijm (University of Amsterdam)
“Applications of algebraic Bethe ansatz matrix elements to spin chains”

10:15–10:45 Édouard Boulat (Université Paris Diderot - Paris 7)
“Exact results in out-of-equilibrium strongly interacting quantum models: the use of integrability”

10:45–11:15 Pause-café et discussions / *Coffee Break and Discussions* (Salle / Room 6245)

11:15–11:45 Hans Gerd Evertz (TU Graz University)
“Bound states and nonequilibrium time evolution in integrable and nearly integrable models”

11:45–12:15 Frank Göhmann (Bergische Universität Wuppertal)
“Asymptotics of correlation functions of the Heisenberg-Ising chain in the easy-axis regime”

12:15–12:45 Tetsuo Deguchi (Ochanomizu University)
“Exact non-equilibrium dynamics in 1D integrable quantum many-body models”

12:45–14:30 Pause déjeuner et discussions / *Lunch Break and Discussions*

14:30–15:00 Alexei Tsvetik (Brookhaven National Laboratory)
“SU(2n) ladder as a perturbed integrable model”

15:00–15:30 Garry Goldstein (Rutgers University)
“GGE and applications for integrable models”

15:30–16:00 Conclusion / *Closing remarks*