

Centre de recherches mathématiques
Université de Montréal

Modèles exactement résolubles et manifestations de symétries.
Conférence célébrant le 60e anniversaire de Luc Vinet
Du 25 au 29 août 2014

*Exact Solvability and Symmetry Avatars.
Conference held on the occasion of Luc Vinet's 60th birthday.
August 25-29, 2014*

HORAIRE / PROGRAM

Conférences : salle 6214 (Pavillon André-Aisenstadt)

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

Lectures: Room 6214 (Pavillon André-Aisenstadt)

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

Le lundi 25 août 2014 / *Monday, August 25, 2014*

- 08:30 - 08:50** Inscription (salle 5345) et café-croissants (salle 6245)
Registration (Room 5345) and Coffee & Croissants (Room 6245)
- 08:50 - 09:00** Un mot du recteur de l'Université de Montréal, M. Guy Breton
A word from the president of the Université de Montréal, Mr Guy Breton

Président / Chair : Yvan Saint-Aubin

- 09:00 - 09:30** **Erik Koelink** (Radboud Universiteit Nijmegen)
"Recurrences and spectral decomposition"
- 09:35 - 10:05** **Keti Tenenblat** (Universidade de Brasilia)
"On differential equations which describe pseudo-spherical surfaces"
- 10:10 - 10:40** **Paul M. Terwilliger** (University of Wisconsin)
"Billiard arrays and finite-dimensional irreducible $U_q(\mathfrak{sl}_2)$ -modules"
- 10:45 - 11:10** Pause-café / *Coffee break*
 (Salle / Room 6245)
- 11:10 - 11:45** **Eric D'Hoker** (UCLA)
"M-theory solutions, branes, and superalgebras"
- 11:45 - 12:15** **Luc Lapointe** (Universidad de Talca)
"Supersymmetry and multi-Jack polynomials"
- 12:20 - 14:00** Pause-déjeuner / *Lunch break*

Président / Chair : Willard Miller Jr.

- 14:00 - 14:30** **Alexi Morin-Duchesne** (Université Catholique de Louvain)
"On the reality of spectra of $U_q(\mathfrak{sl}_2)$ -invariant XXZ Hamiltonians"
- 14:35 - 15:05** **Alexander R. Its** (IUPUI)
"A conformal block approach to the connection problem of the third Painlevé equation"
- 15:10 - 15:30** Pause-café / *Coffee break*
 (Salle / Room 6245)
- 15:30 - 16:00** **George Pogosyan** (Universidad de Guadalajara)
"The anisotropic Coulomb-oscillator system in the two-dimensional Euclidean space"
- 16:05 - 16:35** **Alexei Morozov** (ITEP)
"TBA"
- 18:00 - 19:00** Interlude musical / *Musical offering*
 (Salle / Room 6245)

Le mardi 26 août 2014 / *Tuesday, August 26, 2014*

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

Président / Chair : Eric D'Hoker

09:00 - 09:30 **Charles F. Dunkl** (University of Virginia)

“Vector-valued wave functions on the torus and Jack polynomials”

09:35 - 10:05 **Hideaki Ujino** (Gunma National College of Techno.)

“An ultradiscretizable hybrid of the slow-to-start and the optimal velocity models and its flow-density relation”

10:10 - 10:40 **Willard Miller Jr.** (University of Minnesota)

“Quadratic algebra contractions and 2nd order superintegrable systems”

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

11:10 - 11:40 **Roman W. Jackiw** (MIT)

“Majorana multiplicities in topological insulators”

11:45 - 12:15 **Dennis W. Stanton** (University of Minnesota)

“Beyond the Askey tableau”

12:20 - 14:00 Pause-déjeuner / *Lunch break*

Président / Chair : Sarah Post

14:00 - 14:30 **Roberto Floreanini** (University of Trieste)

“Sensing the tiniest”

14:35 - 15:05 **Jan Felipe van Diejen** (Universidad de Talca)

“Integrable boundary interactions for Ruijsenaars’ difference Toda chain”

15:10 - 15:30 Pause-café / *Coffee break*
(Salle / Room 6245)

15:30 - 16:00 **Adrian Mauricio Escobar Ruiz** (UNAM)

“Two charges on a plane in magnetic field: particular integrability”

16:05 - 16:35 **F. Alberto Grünbaum** (University of California, Berkeley)

“Return time properties for discrete time quantum walks”

Le mercredi 27 août 2014 / *Wednesday, August 27, 2014*

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

Président / Chair : John Harnad

09:00 - 09:30 **Francisco Marcellán** (Univ. Carlos III de Madrid)
“Spectral transformations, CMV matrices and integrable systems”

09:35 - 10:05 **Alexei V. Penskoï** (Moscow State University)
“Symmetry reduction and spectral geometry”

10:10 - 10:40 **Sarah Post** (University of Hawaii at Manoa)
“Superintegrability and orthogonal polynomials”

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

11:10 - 11:40 **Pierre Mathieu** (Université Laval)
“The supersymmetric Ruijsenaars-Schneider model”

11:45 - 12:15 **Oleksiy Zhedanov** (Donetsk Inst. for Physics & Techno.)
“Classical orthogonal polynomials: new perspectives”

Le jeudi 28 août 2014 / *Thursday, August 28, 2014*

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

Président / Chair : Francisco Marcellán

09:00 - 09:30 **Tom H. Koornwinder** (University of Amsterdam)
“Okounkov’s BC-type interpolation Macdonald polynomials and their $q=1$ limit”

09:35 - 10:05 **Yves Grandati** (Université de Lorraine-Site de Metz)
“Confluent chains of DBT and exceptional orthogonal polynomials”

10:10 - 10:40 **Wojciech Zakrzewski** (Durham University)
“Quasi-integrability-recent progress in defining this concept”

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

11:10 - 11:40 **Duong H. Phong** (Columbia University)
“The vacuum energy at two-loops for heterotic orbifold models”

11:45 - 12:15 **Libor Šnobl** (Czech Technical University in Prague)
“Classification and identification of Lie algebras”

12:20 - 14:00 Pause-déjeuner / *Lunch break*

Président / Chair : Matthias Christandl

14:00 - 14:30 **Erdal Emsiz** (Pontificia Universidad Catolica de Chile)
“The semi-infinite q -boson system with boundary interaction and hyperoctahedral Hall-Littlewood polynomials”

14:35 - 15:05 **Aleksander Strasburger** (Warsaw University of Life Sciences-SGGW)
“On a construction of the $\mathbb{C}P^N$ sigma models by means of $SU(2)$ coherent states and Veronese surfaces”

15:10 - 15:30 Pause-café / *Coffee break*
(Salle / Room 6245)

15:30 - 16:00 **Gabriel Coutinho** (University of Waterloo)
“Perfect state transfer on trees”

16:05 - 16:35 **Edward Farhi** (Massachusetts Institute of Technology)
“Physics based approaches to quantum computing”

19:00 Banquet - Restaurant Chez Queux (billets disponibles avant le 27 août, salle 5345)
Banquet - Restaurant Chez Queux (Tickets available before August 27, Room 5345)

Le vendredi 29 août 2014 / *Friday, August 29, 2014*

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

Président / Chair : Decio Levi

09:00 - 09:30 **Philippe R. Di Francesco** (University of Illinois at Urbana-Champaign)
“The combinatorics of discrete non-commutative integrable systems”

09:35 - 10:05 **Alexander Turbiner** (UNAM)
“Integrability, solvability, discrete symmetry in planar quantum dynamics”

10:10 - 10:40 **John Harnad** (Concordia University)
“Integrable hierarchies, enumerative geometry and the combinatorics of Hurwitz numbers”

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

11:10 - 11:40 **Niky Kamran** (McGill University)
“Inverse scattering at fixed energy for asymptotically hyperbolic Liouville surfaces”

11:45 - 12:15 **Mourad E. H. Ismail** (University of Central Florida)
“A new class of bivariate orthogonal polynomials”

12:20 - 14:00 Pause-déjeuner / *Lunch break*

Président / Chair : Pavel Winternitz

14:00 - 14:30 **Vincent Genest** (Université de Montréal)
“Multivariate hypergeometric orthogonal polynomials, group representations and applications”

14:35 - 15:05 **Decio Levi** (Università degli Studi Roma Tre)
“Discretizing the Liouville equation”

15:10 - 15:30 Pause-café / *Coffee break*
(Salle / Room 6245)

15:30 - 16:00 **Patrick Desrosiers** (Université Laval)
“Clustering properties of Jack’s and Macdonald’s polynomials with prescribed symmetry”

16:05 - 16:35 **Matthias Christandl** (University of Copenhagen)
“Entanglement, entropy and representation theory”