

Centre de recherches mathématiques  
Université de Montréal

Atelier «Matrices aléatoires, sujets connexes et applications»  
Du 25 au 30 août 2008

*Workshop “Random matrices, related topics and applications”  
August 25-30, 2008*

## **HORAIRE / *PROGRAM***

Conférences : salle 1360  
Pauses-café : salle 1221  
Réception (25 août) : salle 6245

*Lectures: Room 1360  
Coffee Breaks: Room 1221  
Reception (August 25): Room 6245*

## Le lundi 25 août 2008 / *Monday, August 25, 2008*

**09:00 - 09:55** Inscription (salle 5345) et café-croissants (salle 1221) / *Registration (Room 5345) and Coffee & Croissants (Room 1221)*

**09:55 - 10:00** Mots de bienvenue / *Welcoming addresses*

**10:00 - 10:50** **Alexei Borodin** (Caltech)  
*“Growth of random surfaces”*

**10:50 - 11:40** **Jean-Bernard Zuber** (LPTHE Université Paris 6)  
*“Angular matrix integrals”*

**11:40 - 12:30** **Roderick S.C. Wong** (City University of Hong Kong)  
*“Asymptotics of orthogonal polynomials via the Riemann–Hilbert method”*

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

**14:30 - 15:15** **Brian Rider** (University of Colorado at Boulder)  
*“The hard to soft transition for all beta”*

**15:15 - 16:00** **Leonid Chekhov** (Steklov Mathematical Institute)  
*“Genus expansion of matrix models vis exact relations between them”*

**16:00 - 16:15** Pause-café / *Coffee break*  
(Salle / *Room* 1221)

**16:15 - 17:00** **Aleix Prats Ferrer** (Université de Montréal)  
*“The Chain of Matrices: A complete topological expansion for the formal model ”*

**17:00 - 17:45** **Ioana Dumitriu** (University of Washington)  
*“Fast and stable eigenvalue computations? Use random matrices!”*

**17:45** Réception vin et fromages (6245) / *Wine-and-cheese reception (6245)*

**Le mardi 26 août 2008 / Tuesday, August 26, 2008**

**09:00 - 09:30** Café croissants (1221) / *Coffee & Croissants (1221)*

**09:30 - 10:20** **Pierre Van Moerbeke** (Univ. Catholique de Louvain)  
*“Non-intersecting Brownian motions, Airy and Pearcey processes”*

**10:20 - 10:50** Pause-café / *Coffee break*

**10:50 - 11:40** **Gernot Akemann** (Brunel University)  
*“Gap probabilities in Two Matrix Models”*

**11:40 - 12:30** **Torsten Ehrhardt** (UC Santa Cruz)  
*“Linear statistics of the Ginibre ensemble and determinants of modified Toeplitz matrices”*

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

**14:30 - 15:15** **Razvan Teodorescu** (Los Alamos National Laboratory)  
*“Non-commutative probability theory with random matrices”*

**15:15 - 16:00** **Tom Claeys** (Katholieke Universiteit Leuven)  
*“Higher order analogues of the Tracy-Widom distribution and the Painlevé II hierarchy”*

**16:00 - 16:15** Pause-café / *Coffee break*  
 (Salle / Room 1221)

**16:15 - 17:00** **Igor V. Krasovsky** (Brunel University)  
*“Asymptotics of Toeplitz, Hankel, and Fredholm determinants”*

**17:00 - 17:45** **Jeffery DiFranco** (Seattle University)  
*“Total integrals of Painleve functions”*

## Le mercredi 27 août 2008 / *Wednesday, August 27, 2008*

09:00 - 09:30 Café croissants (1221) / *Coffee & Croissants (1221)*

09:30 - 10:20 **Mark Adler** (Brandeis University)

*"Brownian motion from many points to many points which are tangential to a bulk"*

10:20 - 10:50 Pause-café / *Coffee break*

(Salle / *Room* 1221)

10:50 - 11:40 **Arno Kuijlaars** (Katholieke Universiteit Leuven)

*"Critical behavior in non-intersecting path ensembles"*

11:40 - 12:30 **Harold Widom** (University of California, Santa Cruz)

*"Formulas for probabilities in the asymmetric simple exclusion process"*

12:30 - 14:00 Pause-déjeuner / *Lunch break*

14:00 - 14:30 **Martin Bender** (KTH, Stockholm)

*"Edge scaling limits for non-Hermitian random matrices"*

14:30 - 15:15 **Seung-Yeop Lee** (Université de Montréal)

*"Outpost colonization in random matrix theory"*

15:15 - 16:00 **Man Yue Mo** (Bristol University)

*"Entanglement in the generalized XY model and block Toeplitz determinant"*

16:00 - 16:15 Pause-café / *Coffee break*

(Salle / *Room* 1221)

16:15 - 17:00 **Maurice Duits** (Katholieke Universiteit Leuven)

*"Coupled random matrices and biorthogonal polynomials"*

17:00 - 17:45 **Yang Chen** (Imperial College London)

*"À venir"*

*"TBA"*

**Le jeudi 28 août 2008 / *Thursday, August 28, 2008***

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**09:00 - 09:30** Café croissants (1221) / *Coffee & Croissants (1221)*

**09:30 - 10:20** **Alice Guionnet** (École Normale Supérieure de Lyon)  
*“Matrix models on the unitary or the orthogonal group”*

**10:20 - 10:50** Pause-café / *Coffee break*  
(Salle / *Room* 1221)

**10:50 - 11:40** **Nicholas M. Ercolani** (University of Arizona)  
*“Dynamics of Graphical Enumeration”*

**11:40 - 12:30** **Mourad Ismail** (University of Central Florida)  
*“Completely Monotonic Fredholm Determinants”*

**12:30** Pause-déjeuner et après-midi libre / *Lunch break and free afternoon*

**Le vendredi 29 août 2008 / *Friday, August 29, 2008***

**09:00 - 09:30** Café croissants (1221) / *Coffee & Croissants (1221)*

**09:30 - 10:20** **Kurt Johansson** (Royal Institute of Technology)  
*“Non-invariant random matrix ensembles”*

**10:20 - 10:50** Pause-café / *Coffee break*  
 (Salle / *Room* 1221)

**10:50 - 11:40** **Percy Deift** (Courant Institute of Math. Sciences, NYU)  
*“Asymptotics for Determinants with Fisher-Hartwig Singularities”*

**11:40 - 12:30** **Peter Miller** (University of Michigan)  
*“Universality via the dbar steepest descent method”*

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

**Session - Contributions brèves / *Contributed Talks***

**14:30 - 15:00** **Mattia Cafasso** (Sissa-International School of Advanced Studies)  
*“Matrix biorthogonal polynomials on the unit circle and non-abelian Ablowitz-Ladik hierarchy”*

**15:00 - 15:30** **Jonathan Novak** (Queen’s University)  
*“Some combinatorial aspects of truncated random unitary matrices”*

**15:30 - 16:00** **Christopher Sinclair** (University of Colorado)  
*“The Ginibre ensemble of real random matrices and its scaling limits”*

**16:00 - 16:15** Pause-café / *Coffee break*

**16:15 - 16:45** **Da Xu** (University of Iowa)  
*“A Random Matrix Model of black holes”*

**16:45 - 17:15** **Ahmad Yasamin** (Indiana University-SAMSI)  
*“Maximal Invariants over Symmetric Cones”*

**17:15 - 17:45** **Aleksander Yu. Orlov** (Institute for Oceanology)  
*“New fermionic representation of certain matrix integrals”*

**Le samedi 30 août 2008 / *Saturday, August 30, 2008***

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**09:00 - 09:30** Café croissants (1221) / *Coffee & Croissants (1221)*

**09:30 - 10:20** **Nina Snaith** (University of Bristol)  
*“Random matrix theory solutions to mysteries in number theory”*

**10:20 - 10:50** Pause-café / *Coffee break*  
(Salle / *Room 1221*)

**10:50 - 11:40** **Kim Splittorff** (Niels Bohr Institute)  
*“Non-hermitian RMT applied to QCD”*

**11:40 - 12:30** **Robert Buckingham** (Université de Montréal)  
*“Asymptotics of Tracy-Widom Distributions”*