

Centre de recherches mathématiques
Université de Montréal

Conférence Théorie CANADA 4
Du 4 au 7 juin 2008

Theory CANADA 4 Conference
June 4-7, 2008

HORAIRE / PROGRAM

Conférences : salle 1360 (Pavillon Aisenstadt)
Pauses-café : salle 1221 (Pavillon Aisenstadt)

Lectures: Room 1360 (Aisenstadt Building)
Coffee Breaks: Room 1221(Aisenstadt Building)

Le mercredi 4 juin 2008 / *Wednesday, June 4, 2008*

18:00 Cocktail de bienvenue & inscription / *Opening Reception & Registration*
(Salle / *Room* 6245)

Le jeudi 5 juin 2008 / *Thursday, June 5, 2008*

08:30 - 09:00 Inscription et café croissants (1221) / *Registration and Coffee & Croissants (1221)*

08:45 - 09:00 Introduction (1360) / *Opening remarks (1360)*

Session - Informatique Quantique / *Quantum Information* Organisateurs / *Organizer* : J. Emerson (University of Waterloo)

09:00 - 09:30 **Patrick Hayden** (McGill University)

"Privacy, Acceleration and the Unruh Effect"

09:30 - 10:00 **Stephen Bartlett** (University of Sydney)

"Identifying Phases of Matter that are Universal for Quantum Computation"

10:00 - 10:20 Pause-café / *Coffee break*

(Salle / *Room* 1221)

10:20 - 10:40 **Robin Blume-Kohout** (Perimeter Institute for Theoretical Physics)

"What is the Use of Tomography?"

10:40 - 11:00 **Marcus Silva** (University of Waterloo)

"Searching for Noiseless Subsystems via Scalable Experiments"

11:00 - 11:20 **Barry Sanders** (University of Calgary)

"Time-ordered Decompositions of Exponential Operators Generated by Time-dependent Hamiltonians"

11:20 - 11:40 **Jay Gambetta** (University of Waterloo)

"Superconducting Qubits Coupled to Resonant Cavities: Quantum Optics on a Chip"

11:40 - 12:00 **André Allan Méthot** (University of Waterloo)

"Entanglement Simulation and Channels"

12:00 - 13:30 Pause déjeuner / *Lunch break*

Session - Relativité et Gravitation / *Relativity and Gravitation*
Organisateurs / *Organizer* : A. Dasgupta (University of New Brunswick)

- 13:30 - 14:00 Frans Pretorius** (Princeton University)
“High Speed Black Hole and Soliton Collisions”
- 14:00 - 14:30 Rafael D. Sorkin** (Perimeter Institute for Theoretical Physics / Syracuse University)
“Direct Transmission of Light Along Causal Links”
- 14:30 - 14:50** Pause-café / *Coffee break*
(Salle / *Room* 1221)
- 14:50 - 15:20 Fotini Markopoulou** (Perimeter Institute for Theoretical Physics)
“Quantum Graphity: A Model of Emergent Locality”
- 15:20 - 15:40 Andrew DeBenedictis** (Simon Fraser University / P.I.M.S)
“On the Singularity Issue in Loop Quantum Gravity”
- 15:40 - 16:00 Ariel Edery** (Bishop’s University)
“Spontaneous Symmetry Breaking Via Gravitation”
- 16:00 - 16:20 Sanjeev Seahra** (University of New Brunswick)
“Braneworld Cosmological Perturbations”
- 16:20 - 16:40 Catherine Meusburger** (Perimeter Institute for Theoretical Physics)
“Quantum Double and Kappa Poincaré Symmetries in 3d Gravity and Chern-Simons Theory”

Le vendredi 6 juin 2008 / *Friday, June 6, 2008*

08:30 - 09:00 Café croissants (1221) / *Coffee & Croissants (1221)*

Session - Physique Mathématique / *Mathematical Physics*
Organisateurs / *Organizer* : R. MacKenzie (Université de Montréal)

09:00 - 09:30 **Niky Kamran** (McGill University)

“Wave equations in Kerr geometry”

09:30 - 10:00 **Pierre Mathieu** (Université Laval)

“Quasi-particles in Conformal Field Theory”

10:00 - 10:20 Pause-café / *Coffee break*

(Salle / *Room* 1221)

10:20 - 10:40 **Vardarajan Suneeta** (University of Alberta)

“Investigating Off-shell Stability of String Vacua”

10:40 - 11:00 **Marco Bertola** (Concordia University)

“Random Matrix Models and Isomonodromic Tau Functions”

11:00 - 11:20 **Robert Mann** (University of Waterloo)

“Negative Energy, Instability, and AdS/CFT”

11:20 - 11:40 **Johan Brannlund** (Dalhousie University)

“Holonomy, Decomposability and Relativity”

11:40 - 12:00 **Saurya Das** (University of Lethbridge)

“Effects of the Generalized Uncertainty Principle on Quantum Mechanics”

12:00 - 13:30 Pause déjeuner / *Lunch break*

Session - Cosmologie / *Cosmology*

Organisateurs / *Organizer* : R. Brandenberger (McGill University)

13:30 - 14:00 Ue-Lin Pen (University of Toronto)

"21cm Cosmology"

14:00 - 14:20 Olivier Doré (University of Toronto)

"Detection of Gravitational Lensing in the CMB"

14:20 - 14:40 Latham Boyle (University of Toronto)

"Binary Black Hole Merger: Symmetry and the Spin Expansion"

14:40 - 15:00 Pause-café / *Coffee break*

(Salle / *Room* 1221)

15:00 - 15:30 Justin Khoury (Perimeter Institute for Theoretical Physics)

"Degravitation and Cosmic Acceleration"

15:30 - 15:50 Claudia de Rham (Perimeter Institute for Theoretical Physics)

"Cascading Gravity and Degravitation"

15:50 - 16:10 Masahide Yamaguchi (Stanford University and Aoyama Gakuin University)

"D-term chaotic inflation in supergravity and leptogenesis"

16:10 - 16:30 Neil Barnaby (University of Toronto)

"Nonlocal Inflation"

19:00 *Banquet - Restaurant Rodos Bay (5583 avenue du Parc)*

Le samedi 7 juin 2008 / *Saturday, June 7, 2008*

08:30 - 09:00 Café croissants (1221) / *Coffee & Croissants (1221)*

Session - Cordes et Gravité Quantique / *Strings and Quantum Gravity*
Organisateurs / *Organizer* : A. Maloney (McGill University)

09:00 - 09:30 **Mark Van Raamsdonk** (University of British Columbia)
"Black Hole Dynamics From Atmospheric Science"

09:30 - 10:00 **Moshe Rozali** (University of British Columbia)
"Cold Nuclear Matter In Holographic QCD"

10:00 - 10:20 Pause-café / *Coffee break*
 (Salle / *Room* 1221)

10:20 - 10:40 **Omid Saremi** (McGill University)
"Heat Kernels and Quantum Gravity in 3-dimensional Anti de Sitter Space"

10:40 - 11:00 **Robert McNees** (Perimeter Institute for Theoretical Physics)
"On Quark Masses in Holographic QCD"

11:00 - 11:20 **Gaetano Bertoldi** (University of Toronto)
"Large N Double Scaling Limits in 4d Supersymmetric Gauge Theories and Matrix Models"

11:20 - 11:40 **Joanna Karczmarek** (University of British Columbia)
"Time Dependence and Holography in $c=1$ the Matrix Model"

11:40 - 12:00 **Keshav Dasgupta** (McGill University)
"On Warped Heterotic Axion"