

28TH CONFERENCE ON QUANTUM  
PROBABILITY AND RELATED TOPICS:  
PROGRAM

UAM-IZTAPALAPA AND CIMAT-GUANAJUATO  
GUANAJUATO, MÉXICO, SEPTEMBER 2ND-8TH, 2007

MONDAY 3

**Session:** Interacting Fock Space and Orthogonal Polynomials

*Chairman:* **Piotr Graczyk**

8:30-9:00 MULTIPLICATIVE RENORMALIZATION METHOD FOR ORTHOGONAL POLYNOMIALS

*Hui-Hsiung Kuo.* University of Louisiana, USA

9:00-9:30 A STUDY OF PROBABILITY MEASURES THROUGH COMMUTATORS

*Aurel Stan.* The Ohio State University at Marion, USA

9:30-10:00 PROCESSES WITH QUADRATIC REGRESSIONS

*Włodzimierz Bryc.* University of Cincinnati, Cincinnati

10:00-10:30 TBA

*Nuamli Suat.* Louisiana State University, USA

10:30-11:00 **COFFEE BREAK**

**Session:** Log-Sobolev Inequalities

*Chairman:* **Steve Sontz**

11:00-11:30 LOGARITHMIC SOBOLEV INEQUALITIES FOR SUBHARMONIC FUNCTIONS

*Todd Kemp.* MIT, USA

11:30-12:00 THE YANG -MILLS HEAT EQUATION ON COMPACT MANIFOLDS  
WITH BOUNDARY

*Nelia Charalambous.* University of California-Irvine, USA

12:00-12:30 DIRECT AND REVERSE LOG-SOBOLEV INEQUALITIES IN  
 $\mu$ -DEFORMED SEGAL-BARGMANN ANALYSIS  
*Carlos Angulo.* Universidad de San Luis, México

12:30-13:00 LOG-SOBOLEV INEQUALITIES IN  $\mu$ -DEFORMED SEGAL-BARGMANN  
ANALYSIS.  
*Claudio Pita.* Universidad Panamericana, México

13:00-15:00 **LUNCH BREAK**

**Session:** Infinitely Divisible Processes

*Chairman:* **Luis Rincón**

15:00-15:30 ON MONOTONE INCREMENT PROCESSES  
*Uwe Franz.* University of Greifswald, Germany

15:30-16:00 QUANTUM LEVY PROCESSES ON DISCRETE QUANTUM GROUPS.  
*Adam Skalski.* Lancaster University, UK

16:00-16:30 ON C-FREE PROBABILITY WITH AMALGAMATION  
*Mihai Popa .* Indiana University at Bloomington, USA

16:30-17:00 QUANTUM LÉVY PROCESSES AND PRODUCT SYSTEMS.  
*Michael Schürmann.* University of Greifswald, Germany  
(joint work with *Michael Skeide* and *Silvia Volkwardt.*)

17:00-17:30 CHARACTERIZATION OF CONES VIA INFINITE DIVISIBILITY.  
*Víctor Pérez-Abreu.* CIMAT, México

17:30-18:00 **COFFEE BREAK**

**Session:** White Noise

*Chairman:* **Víctor Pérez-Abreu**

18:00-18:30 TBA  
*Luigi Accardi.* Università di Roma Tor Vergara, Italy

18:30-19:00 INFINITE DIMENSIONAL LAPLACIANS AND ASSOCIATED  
STOCHASTIC PROCESSES  
*Kimiaki Saito.* University of Meijo, Japan

## TUESDAY 4

### Session: Free Probability

*Chairman: Marek Bożejko*

8:30-9:15 MICROSTATES IN AMALGAMATED FREE PRODUCTS

*Ken Dykema* Texas A&M, USA

(join work with *Nate Brown* and *Kenley Jung*)

9:15-9:45 RANDOM WALKS IN A WEYL CHAMBER, INCREASING SUBSEQUENCES  
AND TRUNCATED RANDOM MATRICES

*Jonathan Novak.* Queen's University, Canada

9:45-10:30 NEW PROGRESS IN ASYMPTOTICS OF REPRESENTATIONS OF SYMMET-  
RIC GROUPS

*Piotr Sniady.* University of Wrocław, Wrocław, Poland

10:30-11:00 **COFFEE BREAK**

### Session: Quantum Statistics and Stochastic Control

*Chairman: Madalin Guta*

11:00-11:30 QUANTUM STATISTICAL INFERENCE UNDER THE INFORMATIONAL CON-  
STRAINTS

*Viacheslav Belavkin.* University of Nottingham, UK

11:30-12:00 QUANTUM SUPERMAPS: MULTIPORT ACCESS DEVICES

*Paolo Perinotti.* Università di Pavia, Italy

12:00-12:30 CONTROL OF BOSE-EINSTEIN CONDENSATES

*Masahiro Yanagisawa.* The Australian National University, Australia

12:30-13:00 WEAK SUFFICIENCY OF QUANTUM STATISTICS

*Andrzej Luczak.* Lodz University, Poland

13:00-15:00 **LUNCH BREAK**

### Session: Log-Sobolev Inequalities

*Chairman: Franco Fagnola*

15:00-15:30 LOGARITHMIC SOBOLEV INEQUALITIES AND THEIR RELATIONS  
WITH THE PROPERTIES OF SOME NONLINEAR EVOLUTIONS

*Gabriele Grillo .* Politecnico di Torino, Torino, Italy

15:30-16:00 HYPERCONTRACTIVITY FOR A QUANTUM ORNSTEIN - UHLENBECK  
SEMIGROUP  
*Raffaella Carbone. Università di Pavia, Italy*

16:00-16:30 TBA  
*Ilona Krolak Wroclaw University, Poland*

16:30-16:45 **COFFEE BREAK**

**Session:** Classical and Quantum Models in Biology  
*Chairman: Luigi Accardi*

16:45-17:15 QUANTUM MODELS OF BRAIN ACTIVITIES  
*Karl-Heinz Fichtner. University of Jena, Germany.*

17:15-17:45 BROWNIAN DYNAMICS SIMULATION FOR PROTEIN FOLDING AND  
BINDING  
*Tadashi Ando. Tokyo University of Science, Japan*

## WEDNESDAY 5

**Session:** Quantum Statistics and Stochastic Control

*Chairman:* **V. Belavkin**

8:30-9:00 THE QUANTUM CHERNOFF BOUND

*John Calsamiglia.* Universitat Autònoma de Barcelona, Spain

9:00-9:30 QUANTUM LOCAL ASYMPTOTIC NORMALITY AND  
ASYMPTOTICALLY OPTIMAL ESTIMATION PROCEDURE FOR  $d$ - DIMEN-  
SIONAL STATES

*Jonas Kahn.* Universite Paris-SUD, France

9:30-10:00 SOME ASPECTS OF INCOHERENT QUANTUM CONTROL

*Alexander Pechen.* Princeton University, USA

10:00-10:15 **COFFEE BREAK**

**Session:** Dilations

*Chairman:* **Luis Rincón**

10:15-10:45 DILATION AND PRODUCT SYSTEMS.

*B V Rajarama Bhat.* Indian Statistical Institute, INDIA

10:45-11.15 REALIZATION AND TEST FUNCTIONS

*Tirthankar Bhattacharyya.* Indian Institute of Science, India

11:15-11:45 CLASSES OF ESSENTIAL REPRESENTATIONS OF PRODUCT SYSTEMS

*Remus Floricel.* College West, Regina, SK, Canada

11:45-12:15 DILATIONS OF PRODUCT SYSTEMS

*Michael Skeide.* Università degli study del Molise, Italy

13:00-15:00 **LUNCH BREAK**

**FREE AFTERNOON**

20:00-22:00 **SPECIAL DINNER**

## THURSDAY 6

**Session:** Applications of Quantum Probability in Physics

*Chairman:* **Alberto Barchielli**

- 8:30-9:00 MEASURE-VALUED PROCESSES AND CLASSICAL REDUCTIONS OF QUANTUM MARKOV FLOWS  
*Rolando Rebolledo. Universidad Católica de Chile*
- 9:00-9:30 INSTRUMENT AND AMPLIFICATION PROCESS IN MICRO-MACRO DUALITY SCHEME  
*Izumi Ojima . RIMS, Kyoto University, Japan*
- 9:30-10:00 DESCRIPTION OF DECOHERENCE BY MEANS OF TRANSLATION-COVARIANT MASTER-EQUATIONS AND LÉVY PROCESSES  
*Bassano Vacchini. Università di Milano, Italy*
- 10:00-10:40 CLASSIFICATION OF QUANTUM INSTRUMENTS  
*Masanao Ozawa. Tohoku University, Japan*
- 10:40-11:00 **COFFEE BREAK**

**Session:** Interacting Fock Space and Orthogonal Polynomials

*Chairman:* **Hui-Hsiung Kuo**

- 11:00-11:30 SEMIGROUPS RELATED TO ORTHOGONAL POLYNOMIALS ON HERMITIAN MATRICES  
*Piotr Graczyk Université d'Angers, France*
- 11:30-12:00 QUANTUM STOCHASTIC PROCESSES AND Q-ORTHOGONAL POLYNOMIALS  
*Nizzar Demni Paris VI University, France*
- 12:00-12:30 RAISING AND LOWERING OPERATORS FOR MULTIPLE ORTHOGONAL POLYNOMIALS  
*Walter Van Assche University of Katholieke Univeriteit Leuven, Belgium*
- 12:30-13:00 SPATIAL EXTENSION AND INTEGRABILITY OF  $a_t^+ a_s - a_s a_t^+ = c_{s,t}$   
*F. Szafraniec. Jagiellonian University, Poland*
- 13:00-15:00 **LUNCH BREAK**

**Session:** Quantum Markov Semigroups

*Chairman:* **Julio C. García**

15:00-15:40 QUANTUM FOKKER-PLANCK MODELS: GLOBAL SOLUTIONS AND LARGE TIME BEHAVIOR

*Anton Arnold.* Vienna University of Technology, Austria

15:40-16:10 EVOLUTION OF QUANTUM OBSERVABLES REPRESENTED BY UNBOUNDED OPERATORS.

*Carlos Mora.* Universidad de Concepción, Chile

16:10-16:40 LARGE DEVIATIONS FOR QUANTUM MARKOV SEMIGROUPS ON THE  $2 \times 2$ -matrix algebra

*Henri Comman* University of Santiago de Chile

16:40-17:10 ON THE HAMILTONIAN OF A CLASS OF QUANTUM STOCHASTIC PROCESSES

*Oswaldo González-Gaxiola.* UAM-Cuajimalapa

17:10-17:30 **COFFEE BREAK**

**Joint session:** Quantum Statistics Stochastic Control & Quantum Information

*Chairman:* **Karl-Heinz Fichtner**

17:30-18:00 ON QUANTUM GAUSSIAN EXPERIMENTS

*Anna Jencova* Mathematical Institute, Slovak Academy of Sciences

18:00-18:30 FROM STATE ESTIMATION TO STATE FILTERING

*Katalin Hangos.* Computer and Automation Research Institute, Hungary

18:30-19:00 ENTANGLED MARKOV CHAINS SATISFYING THE PPT CONDITION

*Takashi Matsuoka.* Tokyo University of Science, Japan

19:00-19:30 NOTE ON ENTROPIES IN QUANTUM PROCESSES

*Noboru Watanabe.* Tokyo University of Science, Japan

## FRIDAY 7

### Session: Quantum Information

*Chairman: Denes Petz*

8:30-9:00 COUNTEREXAMPLES TO THE MAXIMAL P-NORM MULTIPLICATIVITY  
CONJECTURE FOR  $1 < p < 2$

*Patrick Hayden. McGill University, Canada*

9:00-9:30 TBA

*Beth Ruskai. Tufts University, USA*

9:30-10:00 TYPICAL SUPPORT AND SANOV LARGE DEVIATIONS OF CORRELATED  
STATES

*Reiner Siegmund-Schultze. Technische Universit?t Kaiserslautern, Germany*

10:00-10:30 ENTANGLEMENT IN OUR RELATIVISTIC QUANTUM WORLD

*Ivette Fuentes-Schuller. Universidad Nacional Aut3noma de M3xico*

10:30-10:50 **COFFEE BREAK**

### Session: Applications of Quantum Probability in Physics

*Chairman: R. Rebolledo*

10:50-11:20 QUANTUM TRAJECTORIES AND SQUEEZING OF FLUORESCENCE LIGHT

*Alberto Barchielli. Politecnico di Milano, Italy*

11:20-11:50 QUANTUM TRAJECTORIES, FEEDBACK AND SQUEEZING

*Mateo Gregoratti. Politecnico di Milano, Italy*

11:50-12:20 QUANTUM RESONANCE, RANK-ONE PERTURBATIONS

*Claudio Fern3ndez. Universidad Cat3lica de Chile*

12:20-12:50 STATISTICAL INFERENCE ON OPEN QUANTUM SYSTEMS

*Mall3n Arenas. Universidad Cat3lica de Chile*

12:50-13:20 QUANTUM ORLICZ SPACES

*Wladyslaw Adam Majewski. University of Gdansk, Poland*

13:20-15:00 **LUNCH BREAK**



**Session:** Quantum Markov Semigroups

*Chairman:* **R. Quezada**

15:00-15:30 LONG TIME BEHAVIOUR OF QUANTUM MARKOV SEMIGROUPS

*Franco Fagnola.* Politecnico di Milano, Italia

15:30-16:00 TBA *Julio C. García*

16:00-16:30 STATIONARY STATES FOR A MODEL OF ELECTRICAL CONDUCTIVITY  
IN LATTICE SYSTEMS

*Leopoldo Pantaleón-Martínez* Universidad Autónoma Metropolitana-Iztapalapa

16:30-16:45 **COFFEE BREAK**

**Session:** Free Probability

*Chairman:* **Roland Speicher**

16:45-17:30 SCHWINGER-DYSON EQUATION AND MATRIX INTEGRALS

*Benoit Collins.* University of Ottawa, Canada

17:30-18:00 COMBINATORIAL RELATION BETWEEN FREE CUMULANTS AND JACOBI COEFFICIENTS

*Wojtek Młotkowski.* University of Wrocław, Poland

18:00-18:30 TBA *J. Wysoczanski*

18:30-19:00 QUASI-FREE STOCHASTIC INTEGRALS AND MARTINGALE REPRESENTATION

*William Spring.* University of Hertfordshire, UK

## SATURDAY 8

### Session: Quantum Information

*Chairman: Beth Ruskai*

8:30-9:00 TBA

*Denes Petz. Budapest University of Technology, Hungary*

9:00-9:30 A ROBERTSON-TYPE UNCERTAINTY PRINCIPLE BY QUANTUM FISHER INFORMATION.

*Paolo Gibilisco. Universita di Roma Tor Vergata, Italy*

9:30-10:00 TBA

*Janek Wehr. Arizona University, USA*

10:00-10:30 LARGE DEVIATIONS FOR CERTAIN CORRELATED STATES ON A SPIN CHAIN

*Fumio Hiai. Tohoku University, Japan*

10:30-10:45 **COFFEE BREAK**

### Session: White Noise

*Chairman: Luigi Accardi*

10:45-11:25 SOLUTION AND PROBABILISTIC REPRESENTATION HEAT EQUATION ASSOCIATED TO GROSS LAPLACIAN

*Habib Ouerdiane. University of Tunis el Manar, Tunis, Tunisia*

11:25-11:55 TBA

*Nobuhiro Asai. Aichi University of Education*

13:00-15:00 **LUNCH**