Centro Stefano Franscini
Monte Verità, Ascona
Switzerland

Fourth Seminar on

Stochastic Analysis, Random Fields and Applications

May 19-24, 2002

and

Minisymposium on Stochastic Methods in Financial Models

May 23-24, 2002

Program

Organizers

Robert C. Dalang	Marco Dozzi	Francesco Russo
Ecole Polytechnique Fédérale	Université de Nancy II	Université de Paris 13

This meeting is sponsored by the Swiss National Science Foundation, the Swiss Academies of Natural Sciences and Medecine, ETH-Zürich, EPF-Lausanne, the Banca Popolare di Sondrio (Suisse), the Centro Studi Bancari Lugano and the Sofipo Fiduciaire.

PROGRAM

Sunday, May 19, 2002

19:15	*Aperitive*
20:00	*Dinner*

Monday, May 20, 2002

7:30 - 8:30	*Breakfast*
8:30 - 8:40	*Opening*
8:40 - 9:25	J. BERTOIN, Université de Paris 6 Some aspects of additive coalescents
9:30 - 9:55	B. ROYNETTE, Université de Nancy I On independence times and positions for random walks
9:55 - 10:20	T. MOUNTFORD, Ecole Polytechnique Fédérale de Lausanne Convergence of exclusion processes
10:20 - 10:50	*Coffee break*
10:50 - 11:35	F. FLANDOLI, Università di Pisa Random currents and probabilistic models of vortex filaments
11:40 - 12:05	S. MELEARD, Université de Paris X Probabilistic interpretation and particle method for 2d vortex equations with Neumann's boundary condition
12:05 - 12:30	R. SOWERS, University of Illinois Averaging, glueing conditions and singular perturbations
12:40 - 14:00	*Lunch*
14:00 - 14:45	M. LEDOUX, Université Paul Sabatier Large deviations and support theorems for diffusions via rough paths
14:50 - 15:15	H. BESSAIH, Università di Pisa A mean field result with application to 3d vortex filaments
15:15 - 15:40	M. ZÄHLE, Universität Jena Stochastic integrals for fractional random fields and applications to SPDE
15:40 - 16:10	*Coffee break*

Monday, May 20, 2002 (continued)

Parallel Session I : Room A

16:10 - 16:35 S. BONACCORSI, Università di Trento
On a class of stochastic linear Volterra equations

16:35 - 17:00 A. DERMOUNE, Université de Lille
Stability of a stochastic differential equation with measurable drift

17:00 - 17:25 P. LESCOT, Université de Picardie
Isovectors for the heat equation and Bernstein processes

Parallel Session II : Room B

16:10 - 16:35 M. GRADINARU, Université de Nancy I
Itô's formula for fractional Brownian motion

16:35 - 17:00 R. NORVAISA, University of Vilnius
The *p*-variation calculus and its relation to stochastic analysis

17:00 - 17:25 T.S. ZHANG, University of Manchester
Local times of fractional Brownian sheet

19:30 *Dinner*

Tuesday, May 21, 2002

7:30 - 8:30 *Breakfast*

8:40 - 9:25 S. ALBEVERIO, Universität Bonn
Recent developments in stochastic analysis related to quantum fields and hydrodynamics

9:30 - 9:55 A.B. CRUZEIRO, Universidade de Lisboa.
An asymptotic estimate for the vertical derivatives of the heat kernel associated to the horizontal Laplacian

9:55 - 10:20 S. TINDEL, Université de Paris 13
Almost-sure Lyapunov exponent of a parabolic SPDE

10:20 - 10:50 *Coffee break*

Tuesday, May 21, 2002 (continued)

Special session in honor of Philippe Blanchard on the occasion of his sixtieth birthday :

10:50 - 11:35 P. BLANCHARD, Universität Bielefeld
Knowledge of the exponent in scale-free random graphs does not determine the threshold properties

11:40 - 12:05 A.D. BARBOUR, Universität Zürich
Asymptotic behaviour of a metapopulation model

12:05 - 12:30 W. ZHENG, University of California at Irvine
Rate of convergence in homogenization of parabolic PDEs

12:40 - 14:00 *Lunch*

14:00 - 14:45 P. IMKELLER, Humboldt-Universität Berlin
Stochastic resonance

14:50 - 15:15 A. MILLET, Université de Paris X
A discretization scheme for the heat equation perturbed by a space-correlated Gaussian noise

15:15 - 15:40 R. LÉANDRE, Université de Nancy I
Classifying spaces, string structure and stochastic Dirac-Ramond operator

15:40 - 16:05 J.-Cl. ZAMBRINI, Universidade de Lisboa
Stochastic deformation of contact geometry

16:05 - 16:35 *Coffee break*

Parallel Session III : Room A

16:35 - 17:00 O. LÉVÈQUE, Ecole Polytechnique Fédérale de Lausanne
Hyperbolic SPDE's driven by boundary noise

17:00 - 17:25 L. ZAMBOTTI, Universität Bielefeld
Occupation densities for solutions of SPDEs with reflection

Parallel Session IV : Room B

16:35 - 17:00 B. RUEDIGER, Universität Bonn
Stochastic integration with respect to compensated Poisson random measures and the Lévy-Itô decomposition theorem on separable Banach spaces

17:00 - 17:25 Y. OUKNINE, Université de Marrakech
Regularity and representation of viscosity solutions of PDEs via BSDEs

19:30 *Dinner*

Wednesday, May 22, 2002

7:30 - 8:30	*Breakfast*
8:40 - 9:25	M. CRANSTON, University of Rochester Lyapunov exponents for the parabolic Anderson model
9:30 - 9:55	M. SANZ, Universitat de Barcelona Stochastic wave equation with 3 spatial dimensions: existence of density
9:55 - 10:20	D. GEMAN, CMLA, ENS-Cachan Stochastic models for coarse-to-fine search
10:20 - 10:50	*Coffee break*
10:50 - 11:35	R.J. ADLER, Technion - Haifa Gaussian random fields on manifolds
11:35 - 12:05	M. WSCHEBOR, Universidad de la Republica Montevideo Condition numbers in optimization problems and extrema of random fields
12:05 - 12:30	J. ROSINSKI, University of Tennessee Boundedness and continuity of infinitely divisible processes
12:40 - 14:00	*Lunch*
14:00 - 14:45	K. WORSLEY, University of McGill The geometry of random fields in astrophysics and brain mapping
14:50 - 15:15	I.M. DAVIES, University of Wales Swansea Stochastic heat and Burgers equations and the intermittence of turbulence
15:15 - 15:40	P. VALLOIS, Université de Nancy I Asymptotic estimates for the ruin problem
15:40 - 16:10	*Coffee break*

Wednesday, May 22, 2002 (continued)

16:10 - 16:35 B. OKSENDAL, University of Oslo. White noise calculus for Lévy processes with applications to finance

16:35 - 17:00 M.-O. HONGLER, Ecole Polytechnique Fédérale de Lausanne
The right time to sell a stock whose price is driven by Markovian noise

17:00 - 17:25 P. CHERIDITO, ETH-Zürich
Mixed fractional Brownian motion

19:30 *Dinner*

Thursday, May 23, 2002

Minisymposium on Stochastic Methods in Financial Models

organized in collaboration with Dr. Fulcieri Kistler, Università della Svizzera Italiana

7:30 - 8:30 *Breakfast*

8:30 - 8:40 *Opening*

8:40 - 9:25 C. MARTINI, Artabel SA
Characterization of cheapest superstrategies in the presence of model uncertainty

9:30 - 9:55 G. BARONE-ADESI, Università della Svizzera Italiana
Electricity derivatives

9:55 - 10:20 O.E. BARNDORFF-NIELSEN, University of Aarhus
Power variation: asymptotic distribution theory and financial economics

10:20 - 10:50 *Coffee break*

10:50 - 11:35 D. MADAN, University of Maryland.
Stochastic Volatility for Lévy Procesess

Parallel Session V : Room A

11:40 - 12:05 E. NICOLATO, University of Aarhus
On multivariate extensions of Ornstein-Uhlenbeck type stochastic volatility models and multi-asset options

12:05 - 12:30 S. SCARLATTI, Università di Chieti-Pescara "G. d'Annunzio"
Pricing barriers under stochastic volatility : an approximation result

Parallel Session VI : Room B

11:40 - 12:05 C. STRICKER, Université de Franche-Comté
Hedging of contingent claims under transaction costs

12:05 - 12:30 A. MIRA, Univ. dell'Insubria Varese
Bayesian estimate of credit risk via MCMC with delayed rejection

12:40 – 14:00 *Lunch*

Thursday, May 23, 2002 (continued)

14:00 - 14:45 E. EBERLEIN, Universität Freiburg
Modelling of Lévy term structures

14:50 - 15:15 A.N. SHIRYAEV, Steklov Mathematics Institute Moscow
Invariance principle for an exotic horizontal-vertical random walk

15:15 - 15:45 *Break*

15:45 – 16:30 C. KLÜPPELBERG, Universität München
Optimal portfolio with bounded capital-at-risk

Parallel Session VII : Room A

16:35 - 17:00 A. SULEM, INRIA-Rocquencourt
Risk-sensitive portfolio optimisation with transaction costs

17:00 - 17:25 U. SCHMOCK, ETH/Uni Zürich
Dealing with dangerous digitals

17:25 - 17:50 V. BALLY, Université de Paris VI
A quantization algorithm for pricing and hedging american options

Parallel Session VIII : Room B

16:35 - 17:00 F. GOZZI, Università di Roma La Sapienza
Degenerate parabolic PDE's arising in pricing multiasset European contingent claims: regularity properties and Galerkin finite element approximation

17:00 – 17:25 A. KOHATSU-HIGA, Universitat Pompeu Fabra
An insider with progressive enlargement of filtrations

17:25 – 17.50 M.-C. QUENEZ-KAMMERER, Université de Marne-la-Vallée
Pricing in an incomplete market

19:30 *Dinner*

Friday, September 24, 2002

7:00 - 8:00	*Breakfast*
8:15	***Bus departs from the Centro Stefano Franscini to the Centro Studi Bancari Lugano***
9:30 - 9:35	*Opening*
9:35 - 10:00	H. GEMAN, ESSEC + Dauphine Pricing and hedging in incomplete markets
10:05 - 10:30	R. CONT, Ecole Polytechnique Palaiseau Pricing and hedging options with a mis-specified model
10:30 - 11:00	*Coffee break*

Public Lectures **:**

11:00	*Opening*
	G. SCHEUENSTUHL, Risklab GmbH, Hypovereinsbank Options and long-term-investment*
	Discussion
	J.-P. FOUQUE, North Carolina State University Pricing volatility time scales*
	Discussion
13:00 - 14:00	*Aperitive - lunch*
14:15	***Bus departs from the Centro Studi Bancari Lugano to the Centro Stefano Franscini***
15:15	***Arrival at the Centro Stefano Franscini***
15:15 - 16:00	Coffee and refreshments
From 16:00	Minibus to the Locarno train station

* The duration of this lecture is approximately 45 minutes