

Daniel CONUS

Birthdate : 12th June 1980.
Swiss citizen.
Single.

Home Address

Ch. de la Cocarde 5 A
CH-1024 Ecublens
Switzerland

Office Address

Institut de Mathématiques
Ecole Polytechnique Fédérale de Lausanne
Station 8
CH-1015 Lausanne
Switzerland

Home phone : + 41 21 691 64 85
Mobile phone : + 41 78 618 40 83
Office phone : + 41 21 693 25 88
E-mail : daniel.conus@epfl.ch

Research Interests.

- Probability theory, stochastic analysis, stochastic partial differential equations and random fields.
- Stochastic optimization, mathematical finance.

Studies.

2003 – **PhD student** under the supervision of Prof. R.C. Dalang.
Institute of Mathematics, Swiss Federal Institute of Technology
(EPFL), Lausanne (Switzerland).

PhD thesis : *The non-linear stochastic wave equation in high dimensions*. (Expected completion date : August 2008).

Doctoral Courses :

- *Markov Processes*. Prof. R.Dalang (Feb 2006)
- *Random Matrices and Communication Systems*. Dr. O.Lévêque (Summer 2005)
- *Parabolic Anderson Model*. Prof. T.Mountford (Summer 2005)
- *Introduction to SPDE's*. Prof. R.Dalang (Feb 2005)
- *Conformal Invariance and Lattice Models*. Prof. S.Smirnov (Winter 2004-2005)
- *Dirichlet Forms and Symmetric Markov Processes*. Prof. T.Mountford. (Summer 2004)
- *Lévy Processes*. Prof. R.Dalang (Feb 2004)
- *Malliavin Calculus*. Prof. M.Sanz-Solé (Winter 2003-2004)

1998 – 2003 **Master of Science** in Mathematical Sciences. EPFL, Lausanne (Switzerland).

Master thesis : *Approximating Snell Envelopes and American Options Pricing*. (Supervised by Prof. R.Dalang).

Semester projects :

- *Stochastic Integration and Calculus*. (Prof. G.Ben Arous)
- *Percolation Models*. (Prof. G.Ben Arous)
- *Optimal Stopping Theory and Application in Options Pricing*. (Prof. A.Dubey)
- *Fermat's Last Theorem*. (Science-Technology-Society). (Dr. J.Sesiano)

1995 – 1998 **Swiss High School Degree** (type C). Gymnase Auguste Piccard, Lausanne (Switzerland). Mathematics award, physics-mathematics award and annual best results award.

Employment.

2003 – **Research and teaching assistant**. Chair of Probability, Institute of Mathematics, EPFL, Lausanne (Switzerland).

2001 – 2003 Student teaching assistant. Section of Mathematics, EPFL, Lausanne (Switzerland). Tutorial sessions in calculus, probability and statistics.

Publications.

[1] Conus D. & Dalang R.C. *The non-linear stochastic wave equation in high dimensions*. Electronic Journal of Probability, Vol. 13 (2008), 629-670.

[2] Dalang R.C. & Conus D. *Introduction à la théorie des probabilités*. Lecture notes, EPFL. (First edition Sept. 2006, Second edition Sept. 2007, to be published by EPFL Press).

Work in Progress.

Itô-Taylor expansion for the solution of the non-linear stochastic wave equation. Joint work with Prof. R.C.Dalang.

Seminars delivered.

– *6th Seminar on Stochastic Analysis, Random Fields and Applications*. Ascona (Switzerland). 19-23 May 2008. Poster referring to [1].

– *VIIIth International Conference on Stochastic Partial Differential Equations and Applications*. Levico Terme (Trento, Italy). 6-12 Jan. 2008. Poster referring to [1].

- *The Mittag-Leffler Institute*, Djursholm (Sweden). Semester on « Stochastic Partial Differential Equations ». 2-28 Sept. 2007. Grant to stay one month, talk concerning [1] during the « *Workshop on SPDE's* » and presentation concerning the stochastic integration of martingale measures in the Young Researchers' Seminar.
- *University of Barcelona*, Spain. Probability Seminar. Invited by Prof. M.Sanz-Solé. Talk concerning [1]. 16-20 Oct. 2006.
- *EPFL*, Lausanne, Switzerland. Probability Seminar. Talk concerning [1]. 5 Oct. 2006.

Conferences attended.

- *31st International Conference on Stochastic Processes and Their Applications*. University René Descartes (Paris 5), Paris, France. 17-21 Jul 2006.
- *Workshop on Stochastic Partial Differential Equations*. Centro di Ricerca Matematica Ennio de Giorgi, Scuola Normale Superiore, Pisa, Italy. 3-7 Apr 2006.
- *5th Seminar on Stochastic Analysis, Random Fields and Applications*. Centro Stefano Franscini, Ascona, Switzerland. 30 May – 3 Jun 2005.

Teaching Activities.

Courses for students in Mathematics.

- Probability (Bachelor course, 40 students). Introduction to probability theory, see [2]. Head assistant, 2004-2007 (Preparing and attending tutorial sessions, correcting tests and exams).
- Stochastic Control (Master course, 10 students). Head assistant, 2004 + 2006.
- Stochastic Processes. (Bachelor course, 30 students). Head assistant, 2006.
- Martingales and Applications. (Bachelor course, 20 students). Head assistant, 2004.

Courses for students in Engineering.

- Analysis IV (Microtechnology, Life Sciences, 140 students). Fourier Analysis, ODEs, PDEs. Assistant, 2007-2008 (Attending tutorial sessions, correcting exams).
- Linear Algebra. (Communication Sciences, 120 students). Assistant, 2003-2005.
- Analysis I (Computer Sciences, 100 students). Basic calculus. Assistant, 2003. (Attending tutorial sessions).

Supervising students in Mathematics.

- Master thesis on *Levy processes and financial assets modelling*. Master student, 2007.
- Master thesis on *Optimal control of a Poisson process*. Master student, 2005.
- Six term projects on subjects like : *Brownian motion : theory and simulation*, *Stochastic integration*, and *The optimal strategy for « Who wants to be a Millionaire ? »*. Master and bachelor students, 2004-2008.

Awards.

Two awards for high quality teaching by the Mathematics Dept. EPFL. (2005 and 2007)

References.

Prof. Robert C. Dalang
Institut de Mathématiques
Ecole Polytechnique Fédérale de Lausanne
Station 8
CH-1015 Lausanne
robert.dalang@epfl.ch

Prof. Marta Sanz-Solé
Facultat de Matemàtiques
Universitat de Barcelona
Gran Via, 585
E-08007 Barcelona
marta.sanz@ub.edu

Prof. Thomas Mountford
Institut de Mathématiques
Ecole Polytechnique Fédérale de Lausanne
Station 8
CH-1015 Lausanne
thomas.mountford@epfl.ch

Administrative Tasks.

2005 – Representative for the teaching assistants in the Council of the Mathematics Department, EPFL.

2002 - 2003 Representative for the mathematics students in the Council of the School of Basic Sciences, EPFL. Representative for the mathematics students in the Council of the Mathematics Department, EPFL.

Languages.

French : Mother tongue.

English : Very good knowledge (reading, writing and speaking). Working language.

German : Good knowledge.

Computer skills.

Operating systems : Windows, Linux.

Office softwares : Office, Latex, HTML.

Scientific softwares : R, Matlab, Octave.

Programming : C++, VBA.

Miscellaneous.

Military service : sergeant in the Swiss Army.

Activities : mountain hiking and climbing, ice hockey, card games.