STEPHAN LAWI

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Citizenship : Canadian
Date of Birth : 17 October 1977

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Education

UNIVERSITY OF TORONTO   Toronto, Canada
2001–2004

Ph.D. in Mathematics, supervised by Prof. Claudio Albanese (Imperial College, London).
Thesis title : "Exactly Solvable Integrals of Stochastic Processes and q-Deformed Processes".
Examiners : P. Carr (Courant Institute, New York University), J. Quastel (Toronto), P. Greiner (Toronto), C. Sulem (Toronto) and M.-D. Choi (Toronto).

ECOLE POLYTECHNIQUE   Paris, France
2000–2001

Mastère Spécialisé et Cycle Postgrade en Ingénierie Mathématique
(M.Sc. in Applied Mathematics)
Thesis title : "State-Dependent Volatility Models using Hypergeometric Functions".
Examiners : N. El-Karoui (Polytechnique, Paris), R. Dalang (EPFL) and P.-A. Barès (EPFL).

ECOLE POLYTECHNIQUE FÉDÉRALE   Lausanne, Switzerland
1996–2001

Diplôme d'Ingénieur Physicien
(B.Sc. and M.Sc. in Physics)

COLLÈGE CLAPARÈDE   Geneva, Switzerland
1992–1996

Maturité Scientifique C, avec mention très bien
(Swiss A-levels in Science with Honors, First Class)

Award

NATURAL SCIENCES AND ENGINEERING RESEARCH COUNCIL OF CANADA
2002–2004

Postgraduate Scholarship Award for academic excellence, research ability, leadership and communication skills.

Experience	Laboratoire de Probabilités et Modèles Aléatoires Paris, France 2004–2005

CNRS Post-Doctoral Fellow in collaboration with Prof. Marc Yor (Paris VI).

Ecole Supérieure d'Ingénieurs Léonard De Vinci   Paris, France
2004–2005

Lecturer at the Department of Mathematics and Financial Engineering.

– **Monte Carlo Methods** S08 : Random number generators ; Discretization methods ; Variance reduction techniques ; Applications to Greeks and conditional expectations.

– **Probability Theory** S03 : Discrete random variables, uniform, Bernoulli, Binomial, Poisson distributions ; Continuous random variables, normal distribution ; Multidimensional laws.

University of Toronto   Toronto, Canada
2001–2004

Teacher Assistant at the Department of Mathematics.

– Master's in Mathematical Finance MMF1952Y.
  Information Technology for Financial Engineering :
  – Hedging and risk neutral measures for equity options
  – European-style claims and static arbitrage
  – Barrier options
  – American options in the binomial and trinomial models
  – Asian options and Monte Carlo methods
  – Calibration of equity options (Derman-Kani model)
  – Fixed income models, risk-neutral measures, forward measures and swaps
  – Calibration of fixed income models and interest rate derivatives
  – Value-at-risk, analytical and numerical methods.
  The course involved also mastering C# programming, SQL server database access and ASP.NET technologies for building XML Web services and multithreaded applications.

– **Linear Algebra** MAT188H1F : Sets, groups, rings ; Vector spaces and linear maps ; Matrices, determinants ; Unitary spaces.

– **Calculus** MAT187H1S : Topology in R^n ; Limits and derivatives ; Integration.

Conferences	Partial Differential Equations and Dynamical Systems

                          The Fields Institute, Toronto
January 31 – February 1, 2004.

Canadian Mathematical Society Summer Meeting   Halifax
Invited speaker. June 13–15, 2004.

3rd World Congress of the Bachelier Finance Society   Chicago
July 21–24, 2004.

6th World Congress of the Bernoulli Society   Barcelona
July 26–31, 2004.

Publications   – <u>in Probability Theory</u> :

S. Lawi and M. Yor (2005)
Matrix-Valued Stochastic Processes and Orthogonal Polynomials.
Submitted to Journal of Theoretical Probability.

S. Lawi and M. Yor (2005)
A Characterization of Markov Processes Enjoying the Time-Inversion Property.
Submitted to Probability Theory and Related Fields.

C. Albanese and S. Lawi (2004)
Laplace Transforms for Integrals of Markov Processes.
Accepted for publication in Markov Processes and Related Fields.

– <u>in Mathematical Physics and Mathematical Biology</u> :

C. Albanese and S. Lawi (2005)
Classification of Solvable Mirror-Periodic Quantum Spin Chains.
Submitted to Communications in Mathematical Physics.

T. Lepage, S. Lawi, P. Tupper and D. Bryant (2005)
Continuous and Tractable Models for the Variation of Evolutionary Rates.
Submitted to Mathematical Biosciences.

C. Albanese and S. Lawi (2004)
Time Quantization and q-Deformations.
Journal of Physics A : Mathematical and General. **37** (2004) 2983 - 2987

C. Albanese and S. Lawi (2004)
Poisson Kernels as Expansions in q-Racah Polynomials.
Accepted for publication in the SIAM Journal of Mathematical Analysis.

– <u>in Mathematical Finance</u> :

C. Albanese, A. Kuznetsov and S. Lawi (2005)
Solvable Stochastic Processes and Applications to Pricing Theory.
Accepted for publication in the Princeton-Paris Lecture Notes Series.

C. Albanese and S. Lawi (2003)
Spectral Risk Measures for Credit Portfolios.
In "Risk measures for the 21st century ", editor G. Szego (2004), John Wiley & Sons, Ltd.

Languages   Bilingual French - English.
Good knowledge of German.