Stefan Weber

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Employment

Full Professor (W3, July 2009 – present)
Institut für Mathematische Stochastik, Leibniz Universität Hannover, Germany

Honorary Associate Professor (January 2009 – June 2009)
Department of Finance, Universiteit Maastricht, The Netherlands

Assistant Professor (July 2006 – June 2009)
School of Operations Research and Information Engineering, Cornell University, USA

Postdoctoral Associate (July 2005 – June 2006)
School of Operations Research and Information Engineering, Cornell University, USA

Vertretung der Juniorprofessur in Mathematical Finance (March 2004 – June 2005)
Institut für Mathematik, Humboldt-Universität zu Berlin, Germany

Doctoral Research Fellow (February 2001 – February 2004)
Mathematical Finance Group, Humboldt-Universität zu Berlin, Germany

Research Fellow (September 1999 – January 2001)
Economics Department, European University Institute, Firenze, Italy

Summer Associate (July 2000 – August 2000)
McKinsey&Company, Frankfurt and München, Germany

Education

Ph.D. in Mathematics (2004), "Summa cum laude"
Humboldt-Universität zu Berlin, Germany

M.A. in Economics (2001) (ungraded)
European University Institute, Italy

Diplom in Mathematics (1999), "Mit Auszeichnung"
Universität Hannover, Germany

Fulbright Scholar (1996/97)
Purdue University and New York University, USA

Vordiplom in Mathematics (1995), Grade: 1.0
Universität Hannover, Germany

Abitur (1992), Grade: 1.0
UNESCO-Gymnasium Bismarckschule, Hannover, Germany

Research Interests

Applied Probability Theory, Mathematical Finance, and Insurance Mathematics:
Risk Management and Risk Measures, Monte Carlo Methods, Credit Risk,
Optimal Portfolio Choice, Behavioral Finance

Publications and Working Papers

(Manuscripts are available at `http://people.orie.cornell.edu/sweber/research.htm`)

Cyclical Correlations, Credit Contagion, and Portfolio Losses (with K. Giesecke)
Journal of Banking and Finance, 28(12), 3009-3036, 2004.

Alternativen zu Value at Risk (with T. Schmidt)
Zeitschrift für die gesamte Versicherungswissenschaft, 4, 669-689, 2005.

Distribution-Invariant Risk Measures, Information, and Dynamic Consistency
Mathematical Finance, 16(2), 419-442, 2006.

Credit Contagion and Aggregate Losses (with K. Giesecke)
Journal of Economic Dynamics and Control, 30(5), 741-767, 2006.

Distribution-Invariant Risk Measures, Entropy, and Large Deviations
Journal of Applied Probability, 44(1), 16-40, 2007.

Robust Utility Maximization with Limited Downside Risk in Incomplete Markets
(with A. Gundel)
Stochastic Processes and their Applications, 117(11), 1663-1688, 2007.

A Continuous Time Limit of an Evolutionary Stock Market (with B. Buchmann)
International Journal of Theoretical and Applied Finance, 10(7), 1229-1253, 2007.

Efficient Monte Carlo Methods for Convex Risk Measures in Portfolio Credit Risk Models
(with J. Dunkel)
Proceedings of the 2007 Winter Simulation Conference, edited by S.G. Henderson,
B. Biller, M.H. Hsieh, J. Shortle, J. D. Tew, and R. R. Barton, 958-966, 2007.

An Approximation for Credit Portfolio Losses (with R. Frey and M. Popp)
Journal of Credit Risk, 4(1), 3-20, 2008.

Measuring the Risk of Large Losses (with K. Giesecke and T. Schmidt)
Journal of Investment Management, 6(4), 1-15, 2008.

Robust Preferences and Robust Portfolio Choice (with H. Föllmer and A. Schied)
Handbook of Numerical Analysis XV, edited by A. Bensoussan and Q. Zhang,
Mathematical Modeling and Numerical Methods in Finance, 29-89, 2008

Utility Maximization under a Shortfall Risk Constraint (with A. Gundel)
Journal of Mathematical Economics, 44, 1126-1151, 2008.

Time Parameters and Lorentz Transformations of Relativistic Stochastic Processes
(with J. Dunkel and P. Hänggi)
Physical Review E, 79(1): 010101(R), 2009.

Stochastic Root Finding and Efficient Estimation of Convex Risk Measures
(with J. Dunkel)
To appear in *Operations Research*.

Importance Sampling Methods for Estimating Convex Risk Measures (with J. Dunkel)
Under revision.

Reliable Quantification and Efficient Estimation of Credit Risk (with J. Dunkel)
Submitted.

Liquidity Risk Measures and Stochastic Approximation
(with W. L. Anderson and M. Liese)
Preprint.

Dependence of Corporate Defaults: Hidden Factors or Mean-Field Interaction?
(with W. L. Anderson and T. Wu)
In preparation.

Dynamic Importance Sampling for Mixture Models (with M. Liese)
In preparation.

Dynamic Importance Sampling for Hitting Probabilities (with M. Liese)
In preparation.

Optimal Portfolios under Dynamic Risk Constraints
In preparation.

Book on Credit Risk Models and Risk Management
In preparation.

Theses

Ph.D. thesis: Measures and Models of Financial Risk, 2004

M.A. thesis: Fictitious Play in Perturbed Games, 2001

Diploma thesis: Stochastic Processes of Locally Bounded α-Variation, 1998

Conference Presentations

Program in Financial Mathematics, Institute for Mathematical Sciences, National University of Singapore, November 2009 (invited)

Workshop 'Aktuelle Trends in der Versicherungs- und Finanzmathematik', Universität Hannover, March 2009 (invited)

2007 Winter Simulation Conference, Washington DC, December 2007 (invited)

Fourteenth INFORMS Applied Probability Conference, Eindhoven, July 2007 (invited)

INFORMS Annual Meeting, Pittsburgh, November 2006 (invited)

DMV-Tagung, Bonn, September 2006 (invited)

Cornell, Carnegie Mellon, Columbia & Princeton Annual Finance Meeting, NYC, April 2006 (invited)

INFORMS Annual Meeting, San Francisco, November 2005 (invited)

13th INFORMS Applied Probability Conference, Ottawa, July 2005 (invited)

Tagung des Deutschen Vereins für Versicherungswirtschaft, Berlin, May 2005 (invited)

DMV-Tagung, Heidelberg, September 2004

6th World Congress of the Bernoulli Society, Barcelona, July 2004

3rd World Congress: Bachelier Finance Society, Chicago, July 2004

Second International Conference on Credit Risk, HEC Montréal, Canada, April 2004

DFG-Zentrumstage *Mathematik für Schlüsseltechnologien*, Berlin, March 2004 (invited)

Conference Stochastik-Tage 2004, Universität Karlsruhe, March 2004

Workshop *Mathematical Finance for Young Researchers*, Berlin, January 2004 (invited)

Banach Center Workshop *Analysis of Random Markets*, Warszawa, October 2003 (invited)

Conference 10th Annual DGF-Meeting, Mainz, October 2003

Conference GRETA CREDIT 2003, Venezia, September 2003

Blaise Pascal International Conference on Financial Modeling, Château Villiers le Mahieu, July 2003

Conference Quantitative Methods in Finance, Sydney & Cairns, December 2002

Workshop Financial Statistics - Copulas, Universität Kaiserslautern, November 2002

Conference Compstat XV - Computational Finance, Berlin, August 2002

Invited Seminar Presentations

Johann-Wolfgang-Goethe Universität Frankfurt, Dept. of Mathematics, October 2008

Universiteit Twente, Financial Engineering Lab, October 2008

Universität Mannheim, Department of Mathematics, October 2008

Rutgers University, Department of Mathematics, October 2008

Helmut-Schmidt-Universität Hamburg, Department of Economics, September 2008

Universität des Saarlandes, Department of Mathematics, September 2008

Universiteit Maastricht, Department of Finance, September 2008

Wirtschaftsuniversität Wien, Department of Finance and Accounting, September 2008

Boston University, Department of Mathematics and Statistics, September 2008

TU Berlin, Department of Mathematics, July 2008

University of Florida, Department of Industrial and Systems Engineering, April 2008

University of Michigan, Department of Mathematics, March 2008

Universität Marburg, Department of Mathematics, January 2008

Universität Hannover, Department of Mathematics, January 2008

TU Braunschweig, Department of Mathematics, January 2008

Princeton University, ORFE, December 2007

Ampega-Gerling Investment GmbH, Cologne, July 2007

ETH Zürich, Department of Mathematics, June 2007

Universität Mannheim, Department of Mathematics, December 2006

TU Berlin, Department of Mathematics, November 2006

Humboldt-Universität zu Berlin, Department of Mathematics, July 2006

Columbia University, IEOR, February 2006

Carnegie Mellon, Department of Mathematics, February 2006

Cornell University, School of ORIE, February 2006

UC Santa Barbara, Department of Applied Probability and Statistics, January 2006

Universität Leipzig, Department of Mathematics, January 2006

RISK Training, Credit Risk Modeling, London & New York, December 2005

University of Virginia, Department of Mathematics, October 2005

Cornell University, School of ORIE, September 2005

ETH Zürich, Department of Mathematics, June 2005

University of Cambridge, Isaac Newton Institute, February 2005

Universität Bonn, Department of Economics, October 2004

Universität Leipzig, Departments of Mathematics and Economics, February 2004

TU München, Department of Mathematics, January 2004

Universität Ulm, Department of Mathematics, January 2004

Deutsche Bundesbank, Abteilung Bankenaufsicht, Frankfurt, October 2003

University of Strathclyde, Department of Statistics, Glasgow, August 2003

Johann-Wolfgang-Goethe Universität Frankfurt, MathFinance Colloquium, April 2003

Vrije Universiteit Amsterdam, Division of Mathematics, January 2003

TU München, Department of Mathematics, January 2003

Universität Hannover, Department of Economics, November 2002

Universität Leipzig, Department of Mathematics, November 2002

Teaching Experience

Instructor of the following courses:

Financial Engineering with Stochastic Calculus II (ORIE 569/5610)
Cornell University, Spring Term 2009

Engineering Probability and Statistics II (ORIE 360/3500)
Cornell University, Fall Term 2008

Mathematical Finance in Discrete Time (ORIE 668)
Cornell University, Spring Term 2008

Mathematical Finance in Continuous Time (ORIE 790, seminar course)
Cornell University, Spring Term 2008

Advanced Stochastic Processes (ORIE 662)
Cornell University, Fall Term 2007

Credit Risk Modeling, Valuation and Management (ORIE 567)
Cornell University, Spring Term 2007

Applied Financial Engineering (ORIE 565)
Project course with industry sponsors (Bloomberg, Deutsche Bank & Merrill Lynch)
Cornell University, Spring Term 2007

Executive Education – Credit Risk
Cornell University, Operations Research Manhattan Center, Fall Term 2006

Case Studies in Financial Engineering (ORIE 516)
Case study with industry sponsor (CapitalOne)
Cornell University, Fall Term 2006

Credit Risk Modeling, Valuation and Management (ORIE 567)
Cornell University, Spring Term 2006

Applied Financial Engineering (ORIE 565)
Project course with industry sponsors (CapitalOne, Deutsche Bank & JPMorgan)
Cornell University, Spring Term 2006

Financial Engineering with Stochastic Calculus I (ORIE 568)
Cornell University, Fall Term 2005

Mathematical Finance in Continuous Time (lecture, 4 hours per week)
Humboldt-Universität zu Berlin, Summer Semester 2005

Credit Risk Models (lecture, 4 hours per week)
Humboldt-Universität zu Berlin, Winter Semester 2004/05

Risk Measures (lecture, 2 hours per week)
Humboldt-Universität zu Berlin, Summer Semester 2004

Modeling Credit Risk and Credit Derivatives (with Hans Föllmer, seminar course)
Humboldt-Universität zu Berlin, Summer Semester 2003

Teaching Assistant to the following courses:

Partial Differential Equations
Universität Hannover, April 1998 – September 1998

Real Analysis III, Topology and Functional Analysis, Complex Analysis I
Universität Hannover, April 1995 – July 1996

Thesis Advisor

Diploma students:

Jördis Haase: Die Rolle der Information in Portfolio-Kreditrisiko-Modellen
mit Anwendung auf die Preisberechnung von CDOs
Humboldt-Universität zu Berlin, January 2007

Andrea Konieczny: The Credit-Equity Link
Humboldt-Universität zu Berlin, August 2006

Jörn Dunkel: Effiziente Monte-Carlo-Methoden für konvexe Risikomaße
Humboldt-Universität zu Berlin, May 2005
(A SCOR Actuarial Prize was awarded to J. Dunkel for his thesis)

M.Eng. students:

W. Castillo, H.-W. Fok, K. Kaul, R. K.-C. Liao, J. W.-H. Liu, T. T. Trinh:
Can Correlation Risk be Hedged?
Cornell University and Deutsche Bank, May 2007

A. Dua, A. L. Gutiérrez Elizalde, E. Kim, M. Kovalchuk, J. Sierant, A. Subbiah:
Option Price Calibration Around Earning Announcements Using Modified VG Models
Cornell University and Deutsche Bank, May 2007

S. Chaisuwan, B. Chung, I-J. Liu, V. Poon, J. Qian, C.-K. Wang:
Does the Option Market Predict Volatility?
Cornell University and Deutsche Bank, May 2006

H.-C. Kao, L. Li, A. Malhorta, S. R. Steinarsson, X. Wang, C.-P. G. Weng:
Volatility Skew
Cornell University and Deutsche Bank, May 2006

Grants and Scholarships

Doctoral fellowship of the DFG, Graduiertenkolleg 251 *Stochastic Processes and Probabilistic Analysis*, 2001 – 2004

Travel Grant, 6th World Bernoulli Congress, Barcelona, 2004

Travel Grant, 3rd World Congress – Bachelier Finance Society, Chicago, 2004

Postgraduate fellowship of the DAAD, 1999 – 2001

Scholarship of the Fulbright commission, 1996/97

Scholarship of the Studienstiftung des deutschen Volkes, 1994 – 1999

Summer school grant of the Verein Bildung und Begabung e.V., 1990 & 1991

Honors and Awards

Honorary Associate Professor (January 2009 – June 2009)
Department of Finance, Universiteit Maastricht, The Netherlands

GAUSS-Prize 2003 of the German Actuary Society and the German Society of Insurance and Financial Mathematics

Prize of the Department of Mathematics and Computer Science (Universität Hannover) and the Freundeskreis der Universität Hannover e.V., 1999

Christian Kuhlemann Prize of the Universität Hannover, 1996

Prize of the German Federal Ministry of Education and Science, 1991 & 1992

Several prizes, Bundeswettbewerb Mathematik, 1989 – 1992

University Service

Member of the Graduate Field of Operations Research, Cornell University (September 2006 – June 2009)

Member of the Graduate Field of Applied Mathematics, Cornell University (December 2006 – June 2009)

Organizer of the Financial Engineering Seminar at Cornell University (May 2006 – December 2007, January 2009 – June 2009):
`www.orie.cornell.edu/orie/research/seminars/financial/index.cfm`

Coorganizer of the Manhattan Quantitative Finance Seminar (May 2006 – May 2007):
`www.orie.cornell.edu/manhattan`

Initiated the new curriculum of the Masters program in Financial Engineering at Cornell:
`http://www.orie.cornell.edu/orie/fineng/masters/studyplan.cfm`

Successfully proposed a closer integration of Cornell's Masters education in Financial Engineering with practical insights: the third semester of the program is now taught at Cornell's OR Manhattan office in collaboration with financial institutions

Member of the Financial Engineering Manhattan Committee, Cornell University (September 2006 – June 2008)

Advisor for Master and Undergraduate Students:
11 MEng in 2006/07, 18 MEng in 2007/08, 13 MEng and 5 Undergrad in 2008/09

Supervisor of reading courses and research projects for Cornell students on a regular basis (including two presidential research scholars, two outstanding undergrads who received an ELI research award for our project, one international research intern from Ecole Centrale Paris, and several MEng and PhD students)

Further Activities

Referee for *Acta Applicandae Mathematicae, Annals of Applied Probability*, *Annals of Operations Research*, *Applied Mathematical Finance*, *Deutsche Mathematiker-Vereinigung*, *Finance and Stochastics*, *IIE Transactions*, *International Journal of Theoretical and Applied Finance*, *Journal of Banking and Finance*, *Journal of Credit Risk*, *Journal of Mathematical Economics*, *Journal of Risk*, *Mathematical Finance*, *Quantitative Finance*, *Operations Research*, *SIAM Journal on Financial Mathematics*, *Statistics and Decisions*, *Stochastic Models*, *Stochastic Processes and their Applications*

Reviewer for *Zentralblatt für Mathematik*

Reviewer for National Science Foundation, NSF panel participant, April 2009

PhD committee member for Irina Penner, Humboldt-Universität zu Berlin, 2007

Member of program committee of the 2009 Applied Probability Society Conference

Invited Session Chair, 2008 Liquidity Risk Meeting, Cornell University, June 2008

Invited Session Chair, 2007 Winter Simulation Conference, Washington DC, December 2007

Invited Session Chair, Conference Stochastik-Tage 2004, Universität Karlsruhe, March 2004

Member of the DFG-Research Center MATHEON (October 2004 – June 2006)

Member of the DFG-Collaborative Research Center 373 *Quantification and Simulation of Economic Processes* (January 2003 – December 2003)

Member of INFORMS, Bachelier Society, Econometric Society

Academic Short-Term Visits

National University Singapore, Mathematical Sciences, November 2009 (2 weeks)

Princeton University, ORFE Department, December 2007 (1 week)

ETH Zürich, Department of Mathematics, May – July 2007 (2 months)

TU Berlin, Department of Mathematics, December 2006 – January 2007 (1 month)

Humboldt-Universität zu Berlin, Department of Mathematics, June – July 2006 (2 months)

University of Cambridge, Isaac Newton Institute, February 2005 (1 week)

TU München, Department of Mathematics, January 2004 (1 week)

Universität Hannover, Department of Mathematics, December 2003 (1 week)

TU München, Department of Mathematics, January 2003 (1 week)

This CV is current as of July 2, 2009.