Risk Management and Financial Engineering Lab
University of Florida

International Workshop: Tutorials on Financial Engineering

March 20-21, 2005
Gainesville, FL, USA

PRESENTERS

Prof. Stan Uryasev, University of Florida, USA

Prof. Jay Ritter, University of Florida, USA

Prof. Valeriy Kholodnyi, Middle Tennessee State University, USA

Dr. Ursula Theiler, Risk Training, Germany

Prof. Terry Rockafellar, University of Washington, USA

Prof. John Birge, University of Chicago, USA

Dr. Craig Friedman, Stardard and Poor's, USA

Dr. Alex Kreinin, Algorithmics Inc., Canada

DAY ONE - March 20:

Stan Uryasev, Risk Management and Portfolio Rebalancing Strategies for Hedge Fund Portfolios

Jay Ritter, The Equity Risk Premium (the Return on Stocks Minus the Risk-Free Rate)

Valery Kholodnyi, Valuation and Hedging of Power-Sensitive Contingent Claims for Power with Spikes: the Non-Markovian Approach

Ursula Theiler, Practical Applications of New Risk Measurement Instruments in Banking: Internal Capital Adequacy Assessment

DAY TWO - March 21:

Terry Rockafellar, Safeguarding Against Losses in Portfolio Optimization

John Birge, Computational Methods for Dynamic Stochastic Optimization in Financial Engineering

Craig Friedman, Topics in Credit Risk Analysis

Alex Kreinin, Valuation of Credit Derivatives: from Credit Default Swaps to CDO-squared

Organizers: Prof. Stan Uryasev, Risk Management and Financial Engineerign Lab (RMFE Lab), Univeristy of Florida, URL: www.ise.ufl.edu/uryasev
Workshop Website: http://www.ise.ufl.edu/rmfe/events/ws2006
Information Hotline: (352) 328-7368

DAY ONE (March 20)

8:00 - 8:20 AM	Registration
8:20 - 8:30 AM	Opening remarks
8:30 - 9:20 AM	Prof. Stan Uryasev
9:20 - 9:35 AM	Break
9:35 -10:20 AM	Prof. Stan Uryasev
10:20 -10:40 AM	Break
10:40 - 11:30 AM	Prof. Jay Ritter
11:30 - 11:45 AM	Break
11:45 - 12:30 PM	Prof. Jay Ritter
12:30 - 1:55 PM	Lunch
1:55 - 2:45 PM	Prof. Valery Kholodnyi
2:45 - 3:00 PM	Break
3:00 - 3:45 PM	Prof. Valery Kholodnyi
3:45 - 4:05 PM	Break
4:05 - 4:55 PM	Dr. Ursula Theiler
4:55 - 5:10 PM	Break
5:10 - 6:00 PM	Dr. Ursula Theiler

Stan Uryasev

Risk Management and Portfolio Rebalancing Strategies for Hedge Fund Portfolios

- Risk management approaches and their applicability to hedge funds
- Portfolio optimization with various risk constraints: Max Loss, Conditional Value-at-Risk and Drawdown;
- Market-neutral investment strategies: pros and cons
- Model validation: in-sample vs. out-of sample performance of algorithms

Jay Ritter

The Equity Risk Premium (the Return on Stocks Minus the Risk-Free Rate)

- Historical numbers for the U.S
- Historical numbers for other countries
- Why historical numbers are irrelevant
- The equity risk premium in the future
- Why it is unnecessary to forecast the future economic growth rates

Valery Kholodnyi

Valuation and Hedging of Power-Sensitive Contingent Claims for Power with Spikes: the Non-Markovian Approach

- The non-Markovian approach to modeling power prices with spikes and power forward prices for power with spikes
- Valuation of European contingent claims on power with spikes
- Examples of the analytical valuation of European call and put options on power with spikes
- Valuation and dynamic hedging of European contingent claims on forwards on power for power with spikes
- Examples of the analytical valuation and dynamic hedging of European call and put options on forwards on power for power with spikes

Ursula Theiler

Practical Applications of New Risk Measurement Instruments in Banking: Internal Capital Adequacy Assessment

- Role of internal capital in banks’ risk management processes,
- Regulatory requirements on internal capital adequacy,
- Survey on new approaches of internal risk measurement and capital allocation,
- Applications in banks’ risk management
- Impacts on efficient risk return management and internal capital adequacy assessment

DAY TWO (March 21)

8:00 - 8:30 AM	Registration
8:30 - 9:20 AM	Prof. Terry Rockafellar
9:20 - 9:35 AM	Break
9:35 -10:20 AM	Prof. Terry Rockafellar
10:20 -10:40 AM	Break
10:40 - 11:30 AM	Prof. John Birge
11:30 - 11:45 AM	Break
11:45 - 12:30 PM	Prof. John Birge
12:30 - 1:55 PM	Lunch
1:55 - 2:45 PM	Dr. Craig Friedman
2:45 - 3:00 PM	Break
3:00 - 3:45 PM	Dr. Craig Friedman
3:45 - 4:05 PM	Break
4:05 - 4:55 PM	Dr. Alex Kreinin
4:55 - 5:10 PM	Break
5:10 - 5:55 PM	Dr. Alex Kreinin
5:55 - 6:10 PM	Closing remarks

Terry Rockafellar

Safeguarding Against Losses in Portfolio Optimization

- The effects of future uncertainty on optimization modeling
- Coherent measures of risk and their properties
- Generalized measures of deviation beyond standard deviation
- Portfolio theory with a diversity of deviation measures

John Birge

Computational Methods for Dynamic Stochastic Optimization in Financial Engineering

- Optimization formulations in discrete and continuous time
- Model construction, scenario, and time discretization choices
- Solution methods based on value function approximation
- Solution methods based on the lagrangian form
- Approximation bounds and convergence results

Craig Friedman

Topics in Credit Risk Analysis

- Single firm default probability modeling
- Single firm recovery modeling
- Portfolio credit risk modeling
- Collateralized Debt Obligations (CDO's)

Alex Kreinin

Valuation of Credit Derivatives: from Credit Default Swaps to CDO-squared

- Models of credit risky securities in the integrated market and credit risk framework
- Valuation and calibration of CDS models
- Basket credit derivatives
- CDOs and CDO-squared

Stan Uryasev

Stan Uryasev, a professor at the University of Florida, is director of the Risk Management and Financial Engineering Lab. His research is focused on the development of efficient computer modeling and optimization techniques and their applications in finance and military projects, including: 1) Risk management 2) Portfolio optimization; 3) Asset and Liability modeling; 4) Classification in financial applications, and 5) Optimal trading strategies. Published three books (monograph and two edited volumes) and about seventy research papers.

Jay Ritter

Jay Ritter, the Joe Cordell Professor of Finance at the University of Florida, holds B.A. and Ph.D. degrees in economics and finance from the University of Chicago, where he studied under seven Nobel Prize winners. He previously taught at the University of Pennsylvania's Wharton School, Michigan, Illinois, and the Massachusetts Institute of Technology's Sloan School of Management before joining the University of Florida in 1996. He has served on the Board of Directors of the American Finance Association and is an associate editor of the Journal of Financial Economics, Journal of Behavioral Finance, Journal of Financial and Quantitative Analysis, Review of Financial Studies, Financial Management, and the Pacific-Basin Finance Journal. Ritter's research interests include initial public offerings, investment banking, behavioral finance, and the predictability of stock returns.

Valery Kholodnyi

Valery A. Kholodnyi is a Professor of Financial Mathematics and Risk Management as well as the Executive Director of the Center for Quantitative Risk Analysis at the Middle Tennessee State University. Prior to this role he served in the capacities of the Chief Science Officer and Vice President of Research and Development for the Integrated Energy Services, the Director of Research for the TXU Energy Trading, and the Director of Quantitative Analysis for the Reliant Resources. He also held university positions in various departments such as the Department of Microwave and Quantum Electronics, the Department of Mathematical Modeling of Physical Processes, and the Department of Physics in both Russia and the United States.

He authored or co-authored four books (one in production) and a chapter in a book in finance, as well as over a hundred research papers in finance, mathematics, theoretical physics and engineering, and has published in journals such as the Energy Power and Risk Management Magazine, Journal of Mathematical Physics, European Physical Journal, Journal of Nonlinear Analysis, Journal of Engineering Mathematics, Journal of Integral Equations and Applications, Journal of the Dynamics of Continuous, Discrete and Impulsive Systems and Journal of Bioelectrochemistry and Bioenergetics. He was an invited speaker at numerous international and national conferences both for the industry practitioners and academic researchers. He holds a Ph.D. in Applied Mathematics from Moscow Institute of Electronics and Mathematics.

Ursula Theiler

Ursula Theiler is CEO of the company Risk Training, conducting trainings and consulting services for financial institutions and companies on topics related to bank and risk management. She is senior partner of the company acaron GmbH, a software and consulting company in risk and portfolio management. Prior to this, she has been working as credit analyst, corporate customer advisor and risk controller in different large German banks. She holds a Doctorate Degree of the Banking Business Department of the Ludwig-Maximilians-University of Munich, Germany. Her research agenda focuses on practical applications of innovative methods of risk and portfolio management.

Terry Rockafellar

Professor Rockafellar completed his undergraduate work at Harvard in 1957, and his graduate work in 1963 at Harvard as well. His teaching interests focus on optimization and variational analysis and control. Professor Rockafellar's research sponsors are the National Science Foundation and the Air Force Office of Scientific Research. Professor Rockafellar has received a number of honors, such as the Dantzig Prize (SIAM and Mathematics Programming Society, 1982); Honorary Doctorate, University of Groningen (Netherlands), 1984; and the Von Neuman Prize (SIAM, 1992). Professor Rockafellar is the former editor of the SIAM Journal on Control and Optimization, and he currently holds editorial positions on Mathematics of Operations Research and the new SIAM Journal on Optimization.

John Birge

John Birge is the Jerry W. and Carol Lee Levin Professor of Operations Management at the University of Chicago. Previously, he was at Northwestern University, where he was dean of engineering, and at the University of Michigan, where he established the financial engineering program. He is a leader in the development of methods for optimization under uncertainty and has consulted for a variety of companies in the financial and corporate sectors in the area of asset/liability and enterprise risk management.

Craig Friedman

Craig Friedman is the Head of Research for the Quantitative Analytics group at Standard & Poor's. His areas of interest/expertise include quantitative models for credit risk, model performance measurement and general problems in machine learning. He is also a Fellow in Courant's Mathematics in Finance Program and a member of the editorial boards of two journals. Prior to joining Standard & Poor's, Craig was a Vice President in Morgan Stanley's Fixed Income Division, where he
Stanley's Fixed Income Division, where
heworked on derivative pricing and trading strategies. He received Ph.D. in Mathematics from New York University's Courant Institute of Mathematical Sciences.

Alex Kreinin

Alex has been with Algorithmics since 1995, currently as Head of the Quantitative Research. Alex has PhD in Probability and Statistics from the University of Vilnius (Lithuania). Published over 50 papers and 2 monographs. Research areas include Market and Credit Risk Modeling, Numerical methods for risk management, Monte Carlo methods, Calibration of stochastic models, Semi-analytical methods of portfolio valuation, Design of numerical algorithms and their software implementation. Current research projects are focused on pricing and risk management of credit derivatives. Alex is a member of the American Mathematical Society and a member of the Bachelier Finance Society. Alex has been appointed as a Professor in the Computer Science Department of the University of Toronto.

DESCRIPTION

The workshop will provide a forum for state-of-the-art results and the latest advances in financial engineering and risk management, including market, credit, and operational risk; algorithms and techniques for portfolio optimization, pricing and hedging of various financial instruments, derivatives on traded as well as non-traded securities, trading algorithms, and others.

The workshop will consist of tutorials on selected topics of risk management and financial engineering given by prominent researchers.

REGISTRATION

All participants of the workshop should register and pay the registration fee.

The workshop registration desk will be located near Room 284, Reitz Union. It will be open from 6:00 PM to 8:00 PM on March 19, from 8:00 AM to 8:30 AM on March 20 and from 8:00 AM to 8:30 AM on March 21.

The workshop fee:

- Regular fee: $200 per day
- Government and Academic fee: $125 per day
- Team discount (two or more persons from the same organization paying regular fee): deduct $50 per person per day

The registration fee covers workshop materials, refreshments, breakfasts and lunches (every day).

Fee must be paid 15 working days in advance by check (US dollars) or by cash upon arrival.

Cancellation are accepted without charge if written notification is received at least 10 days prior to starting the workshop.

The resigtration form can be e-mailed (saryk@ufl.edu), faxed (352-392-3537) or mailed to the workshop address (provided in the form).

LOCATION

The workshop will take place on March 22-24, 2006 at the University of Florida, Reitz Union (Room 284), Gainesville, FL.

Campus map can be downloaded from http://campusmap.ufl.edu/; type "Reitz Student Union" in the Map Search window.

ACCOMODATIONS

The organizers have reserved a block of rooms at the negotiated rate of $109/night at the Hilton University of Florida Conference Center.

For participants staying in the Hilton Hotel we provide transportation to the Reitz Union. On March 20 and 21, the shattle from the Hilton Hotel to the Reitz Union will be available at 7:30-8:00 AM, the shattle from the Reitz Union to the Hilton Hotel will be available at 7:00-7:30 PM. No transportation to the Reitz Union will be provided for early registration on March 19.

Below we provide a list of webplaces and information that might be of interest.

Lodging in Gainesville area:

http://www.visitgainesville.net/I-75motels/index.htm
http://www.visitgainesville.net/Fullservice/index.htm

The next two sites are about Gainesville in general:
http://www.visitgainesville.net/
http://www.gainesville.com/
Also visit the page of the Harn Museum of Art.

To find cheap (and generally good) eats near the Hilton Conference Center (within 10 minute-walk), you can go to:
Panera Bread (sandwiches/soups/salads/pastry), 3443 SW Archer Road;
Wok and Roll (sushi/teryaki), 2106 SW 34th St;
Moe's Southwestern Grill (burritos, tacos), 3443 SW Archer Road
Starbucks, 3443 SW Archer Road

REGISTRATION FORM

Mail:
University of Florida, PO BOX 116595,
International Workshop: "Tutorials on Financial Engineering", March 20-21, 2006
Attn: S. Uryasev
303 Weil Hall, Gainesville, FL 32611-6595

Phone: (352) 328-7368 Fax: (352) 392-3537
E-Mail: saryk@ufl.edu WEB: www.ise.ufl.edu/rmfe/events/ws2006/

Name/Title		
Job Title		
Department		
Company/Organization		
E-Mail (required)		
Address		
City	State/Province	Zip
Country		
Phone	Fax	

Please register me for ☐ the first day and/or ☐ the second day of the International Workshop: "Tutorials on Financial Engineering", March 20-21, 2006

Workshop fee:

First day	Second day
☐ Regular fee: $200 USD ☐ Government and Academic fee: $125 USD ☐ Team discount (two or more persons paying regular fee): deduct $50 per person per day	☐ Regular fee: $200 USD ☐ Government and Academic fee: $125 USD ☐ Team discount (two or more persons paying regular fee): deduct $50 per person per day

Payment method:

☐ Check enclosed: payable to the University of Florida Research Foundation
☐ Pay by cash upon arrival

How did you learn about the workshop? ______