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**FINANCIAL
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CENTER**



2013 HF The 5th Annual
CONFERENCE Modeling High Frequency
Data in Finance

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October

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STEVENS INSTITUTE OF TECHNOLOGY, HOBOKEN, NJ



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THE UNIVERSITY
OF TEXAS AT EL PASO

CONFERENCE PROGRAM

DAY 1 DeBaun Auditorium

8:00 - 9:00 **Registration and Welcome** Location: Babbio Atrium

9:00 - 9:15 **Opening Remarks and Introduction** - Ionut Florescu, Stevens Institute of Technology, Conference Chair

9:15 - 9:30 **Welcome to Stevens** - Dr. George Korfiatis, Provost, Stevens Institute of Technology

9:30 - 10:15 **Conference Kickoff Keynote Talk: Scott Mixon**, Commodity Futures Trading Commission (CFTC)

SECTION: MARKET MICROSTRUCTURE AND ORDER BOOK DYNAMICS

10:30 - 11:00 **Alvaro Cartea**, University College London
Robust Market Making

11:00 - 11:30 **Robert Almgren**, Quantitative Brokers and NYU
Market Simulator for Developing Execution Algorithms

11:30 - 12:00 **Irene Aldrige**, ABLE Alpha Trading, LTD. and Big Data Finance Institute
Market Microstructure and the Risks of High Frequency Trading

12:00 - 13:00 **Lunch break sponsored by Thomson Reuters Tick Data division**

13:00 - 13:30 **Martin Šmíd**, Institute of Information Theory and Automation of the ASCR, Czech Republic
Causal Model of Price and Inventory on a Market with a Market Maker

13:30 - 14:00 **Alec Kercheval**, Florida State University
Limit Order Book Forecasting with Support Vector Machines

14:00 - 14:30 **Igor Cialenco**, Illinois Institute of Technology
On Bid-Ask Prices for Dividend Paying Securities

14:30 - 15:00 **Ciamac Moallemi**, Columbia University
The Value of Queueing in a Limit Order Book

15:15 - 15:45 **Richard Liao**, U.S. Securities and Exchange Commission
Regulation in High Frequency Trading and Quantitative Methods

15:45 - 16:15 **Vladimir Markov**, Liquidnet
Optimal Execution of Limit Orders and Market Orders with Stochastic Liquidity Constraints

16:15 - 16:45 **Vladimir Filimonov**, ETH Zürich, Switzerland
Quantification of the High Level of Endogeneity and of Structural Regime Shifts in Commodity Markets

16:45 - 17:15 **Ciprian Tudor**, Universite Lille and Universite de Pantheon-Sorbonne Paris 1, France
Modeling High Frequency Data by Hawkes Processes

STUDENT SESSIONS

17:30 - 17:45 **Xuefeng Gao**, Georgia Institute of Technology
Hydrodynamic Limit of Order Book Dynamics

17:45 - 18:00 **Deepan Palguna**, Purdue University
Non-parametric Prediction in a Limit Order Book

18:00 - 18:15 **Nguyet Nguyen**, Florida State University
Hidden Markov Model for High Frequency Data

18:15 - 18:30 **Jian Wang**, Florida State University
Historical Arbitrage Opportunities Study for US Treasury Futures

18:30 - 18:45 **Jonathan Chavez-Casillas**, Purdue University
Long-run Price Dynamics under a Level-1 LOB with Memory and Variable Spread

18:45 - 19:00 **Patrick Houlihan**, Stevens Institute of Technology
Leveraging a Call-Put Ratio as a Trading Signal

19:00 - 21:30 **Dinner in Babbio Atrium. Sponsored by the Financial Systems Center at Stevens Institute of Technology**

DAY 2 DeBaun Auditorium

8:00 - 8:10 **Overview of the day - H. Eugene Stanley**, Director, Center for Polymer Studies, Boston University and member of the National Academy of Science, Conference co-chair

SECTION: VOLATILITY ESTIMATES

8:10 - 8:40 **Joseph Barunik**, Charles University in Prague and Academy of Sciences, Czech Republic
Asymmetric Volatility Spillovers: Revisiting the Diebold-Yilmaz (2009) Spillover Index with Realized Semivariance

8:40 - 9:10 **Dobrislav Dobrev**, Federal Reserve Board of Governors, Washington, DC
Duration-Based Volatility Estimation

9:10 - 9:55 **Keynote Talk: Per Mykland**, University of Chicago
Estimating and Forecasting Volatilities using the Leverage Effect

10:10 - 10:40 **Dacheng Xiu**, University of Chicago
Model-Free Leverage Effect Estimators at High Frequency

10:40 - 11:10 **Simona Sanfelici**, University of Parma, Italy
Estimating Volatility of Volatility Free from Spot Volatility Estimates

11:10 - 11:40 **Yong Zeng**, University of Missouri at Kansas City
Real-time Stochastic Volatility Estimation via Filtering Equation for a Partially-observed Heston Model

11:40 - 12:10 **Sylvain Corlay**, Bloomberg LP
Functional Quantization Techniques for Stochastic Volatility

12:10 - 13:00 **Lunch break sponsored by the Hanlon Financial Systems Lab at Stevens Institute of Technology (HFT white paper survey)**

SECTION: EXECUTION STRATEGIES FOR HFT

13:00 - 13:30 **Patrick Cheridito**, Princeton University
Optimal Execution under Stochastic Volatility and Liquidity

13:30 - 14:00 **Qihang Lin**, University of Iowa
Optimal Trade Execution with Coherent Dynamic Risk Measures

14:00 - 14:30 **Xin Guo**, University of California Berkeley
Optimal Placement in a Limit Order Book

14:30 - 15:00 **Sebastian Jaimungal**, University of Toronto, Canada
Algorithmic Trading with Learning: Informed Versus Uninformed

15:15 - 15:45 **Costis Maglaras**, Columbia University
A Limit Order Queue Model with Heterogeneous Traders

15:45 - 16:15 **Julian Manzano**, SC AG, Switzerland
Necessary Ingredients for a Successful Trading Strategy

16:15 - 16:45 **Olympia Hadjiliadis**, C.U.N.Y.
Trends and Trades

16:45 - 17:15 **Shinan Cao**, University of International Business and Economics, China
A Wavelet Model for Dynamic VWAP Approach

17:15 - 17:45 **Khaldoun Khashanah**, Stevens Institute of Technology
ACTUS and Systemic Risk Modeling

STUDENT SESSIONS

18:00 - 18:15 **Yuxiao (Shawn) Ning**, Cornell University
Small-World Network in Stock Cointegration

18:15 - 18:30 **Zhang Li**, Purdue University
A Distributed Algorithm for Systemic Risk Mitigation in Financial System

18:30 - 18:45 **Timothy Lewkow**, Florida State University
A Market Microstructure Model of Volatility using an Earth Mover's Distance

18:45 - 19:00 **Imma Valentina Curato**, University of Pisa, Italy
Fourier Estimation of Stochastic Leverage Using High Frequency Data

19:00 - 19:15 **Kristina Krsteva**, Stevens Institute of Technology
Portfolio Optimization under Regime-Switching Multi Factor Models

The keynote talks are 35 minutes long + 10 minutes for questions
The invited speakers' talks are 25 minutes long + 5 minutes for questions
The graduate students' talks are 12 minutes + 3 minutes for questions

DAY 3 Edwin A. Stevens Hall EAS 222

8:00 - 8:10 **Overview of the day - Maria C. Mariani**, Distinguished Professor and Department Chair, University of Texas at El Paso, Conference Co-organizer

SECTION: NEWS AND HFT

8:10 - 8:40 **Eleni Gousgounis**, Stevens Institute of Technology
The Role of Market Sentiment in Foreign Exchange Markets

8:40 - 9:10 **Suzy Moat**, University of Warwick, UK
Can Online Data Anticipate Stock Market Moves?

9:10 - 9:40 **Tobias Preis**, University of Warwick, UK
Digital Traces of the Human in the Loop - How Can We Predict Financial Markets Using Big Data?

9:40 - 10:10 **Germán Creamer**, Stevens Institute of Technology
Sentiment Analysis of the European Equity Market with a Hybrid Expert Weighting Algorithm

10:25 - 11:10 **Keynote Talk: Charles Jones**, Columbia University
The Causal Effects of High-Frequency Trading

SECTION: HFT IMPACT

11:10 - 11:40 **Dror Kenett**, Boston University
How High Frequency Trading Affects a Market Index

11:40 - 12:10 **Lukas Vacha**, Charles University and Academy of Sciences, Czech Republic
Gold, Oil, and Stocks

12:10 - 13:00 **Lunch sponsored by the Financial Engineering and Quantitative Finance programs at Stevens Institute of Technology**

13:00 - 13:30 **Takaki Hayashi**, Keio University, Japan
Which Market Moves Faster? Lead-lag Analysis for Japanese Stock Market

13:30 - 14:00 **Gordon H. Dash, Jr.** University of Rhode Island
Supervised Learning Networks to Fit the Daily and Near-High Frequency US Municipal Bond Term Structure

14:00 - 14:30 **Ambar Sengupta**, Louisiana State University
Gaussian Inequalities and Tranche Sensitivities

14:30 - 15:00 **Darinka Dentcheva**, Stevens Institute of Technology
Portfolio Optimization with Risk Control by Stochastic Order Constraints

15:15 - 15:45 **Bo Zhang**, IBM T.J. Watson Research Center
Efficient Monte Carlo Counterparty Credit Risk Pricing and Measurement

15:45 - 16:15 **Petter Kolm & Gordon Ritter**, NYU
Multi-period Portfolio Choice and Bayesian Dynamic Models

16:15 - 16:45 **Kiseop Lee**, University of Louisville
Discrete Time Hedging with Liquidity Risk

16:45 - 17:15 **Alexandra Chronopoulou**, C.U.N.Y.
Long Memory Stochastic Volatility Model: Leverage Effects & Hedging

17:30 - 18:00 **Indranil Sengupta**, North Dakota State University
Generalized Barndorff-Nielsen and Shephard Model and Volatility Smile

18:00 - 18:30 **Maria Pia Beccar Varela**, University of Texas at El Paso
Analysis of Generic Diversity Data, Financial Data and High Frequency Financial Data

18:30 - 19:00 **Alexander Shklyarevsky**, Bank of America
PDE, PIDE and other Dynamic Models for Data Sampled with High Frequency

STUDENT SESSIONS

19:00 - 19:15 **Francis Biney**, University of Texas at El Paso
Study of Volatility Structures and Memory Effects in Geophysics and Finance

19:15 - 19:30 **Bo Yi**, Sun Yat-sen University China and Purdue University US
Dynamic Portfolio Selection with Mispricing and Model Ambiguity