



# Non- and Semiparametric Volatility and Correlation Models

- Economic Sources of Volatility, Risk Decomposition  
and Financial Crises

24.-26.7.2014  
University of Paderborn

## Workshop Programme



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## **Programme Committee**

Luc Bauwens, Université catholique de Louvain  
Jan Beran, University of Konstanz  
Wolfgang Härdle, Humboldt University of Berlin  
Oliver Linton, Cambridge University  
Timo Teräsvirta, Aarhus University  
Yuanhua Feng, University of Paderborn

**A special invited lecture:** Peter M. Robinson, LSE

## **Local Organizing Committee**

Yuanhua Feng,  
Thomas Gries,  
Sonja Lück,  
Christian Peitz,  
Sarah Forstinger

## **Assistants of Organization**

Chen Zhou (Assistant for documentation and the Book of Abstracts)  
Tobias Benninger (Technical Support)



**Time schedule for the International Workshop**  
***Non- and Semiparametric Volatility and Correlation models***  
***- Economic Sources of Volatility, Risk Decomposition and Financial Crises***  
 24. - 26. July 2014, Paderborn, Germany

Thursday, 24. July 2014		Friday, 25. July 2014		Saturday, 26. July 2014	
Time		Time		Time	
7:00 -9:00	Registration	8:30 -9:15	Keynote Talk	8:30 -9:30	IS 7, CS 2, CS 3
9:00 -9:30	Welcome & Opening Speech	9:15 -9:30	Short Break	9:30 -9:40	Short Break
9:30 -10:30	Opening Lecture	9:30 -10:30	Special Inv. Lecture	9:40 -11:10	IS 8A, IS 8B
10:30 -11:00	Coffee Break	10:30 -11:00	Coffee Break	11:10 -11:30	Coffee Break
11:00 -12:30	IS 1A, IS 1B	11:00 -12:30	IS 4A, IS 4B	11:30 -12:30	Closing Lecture
12:30 -14:00	Lunch Break (PS: 13:30-14:00)	12:30 -14:00	Lunch Break (PS: 13:30-14:00)	12:30 -12:45	Closing Speech
14:00 -14:45	Keynote Talk	14:00 -14:45	Keynote Talk		
14:45 -15:00	Short Break	14:45 -15:00	Short Break		
15:00 -16:30	IS 2A, IS 2B	15:00 -16:30	IS 5A, IS 5B		
16:30 -17:00	Coffee Break	16:30 -17:00	Coffee Break		
17:00 -18:30	IS 3A, IS 3B	17:00 -18:30	IS 6, CS 1		
From 19:00	Welcome Reception				

# Thursday, 24.07.2014

Time	Registration (Q-Building, Ground-floor)	
7:00 – 9:00	Welcome & Opening Speech by Bernd Frick (Oo.101) Chair: Yuanhua Feng	
9:00 – 9:30	Opening Lecture by Wolfgang Härdle (Oo.101) <i>TEDAS-Tail Event Driven Asset Allocation</i> Chair: Alois Kneip	
9:30 – 10:30	Coffee Break (Q-Building, Floor 1)	
10:30 – 11:00	<b>Invited Session 1A (O2.113)</b>	<b>Invited Session 1B (O2.122)</b>
11:00 – 12:30	<i>Structural Breaks in Volatility and Financial Crises</i>  Organizer & Chair: Ostap Okhrin Speakers: Ostap Okhrin, Hans Manner, Vasy Golosnoy	<i>Application of Non-and Semiparametric Volatility and Correlation Models in Quantitative Risk Management and Measuring Systemic Risk</i>  Organizer & Chair: Weining Wang Speakers: Melanie Schienle, Mengmeng Guo, Wei Cui
12:30 – 14:00	Lunch Break	
14:00 – 14:45	<b>Keynote Talk I by Jan Beran (H3)</b>  <i>On estimation of cross-sectional dependence for strongly dependent time series</i> Chair: Philipp Sibbertsen	
14:45 – 15:00	Short Break	
15:00 – 16:30	<b>Invited Session 2A (O2.113)</b>  <i>Semiparametric Models for Trend and Volatility and their Applications</i>  Organizer & Chair: Yuanhua Feng Speakers: Sucharita Ghosh, Yuanhua Feng, Liudas Giraitis	<b>Invited Session 2B (O2.122)</b>  <i>Nonparametrics of Volatility and Risk</i>  Organizer & Chair: Yang Zu Speakers: Aijun Hou, Yang Zu, Xiao Xiao
16:30 – 17:00	Coffee Break (Q-Building, Floor 1)	
17:00 – 18:30	<b>Invited Session 3A (O2.113)</b>  <i>Time Varying Volatility Models</i>  Organizer & Chair: Philipp Sibbertsen Speakers: Matei Demetrescu, Rolf Tschernig, Christian Leschinski	<b>Invited Session 3B (O2.122)</b>  <i>Recent Development in Nonparametric Financial Econometrics I</i>  Chair: Juan Manuel Rodriguez Poo Speakers: Johannes Schmidt-Hieber, Weining Wang, Boqiang Huang
From 19:00	Welcome Reception (Q-Building, Floor 1)	

## Opening Lecture

Wolfgang Härdle: TEDAS – Tail Event Driven Asset Allocation

## IS 1A: Structural Breaks in Volatility and Financial Crises

Ostap Okhrin: Efficient Iterative Maximum Likelihood Estimation of High-Parameterized Time Series Models

Hans Manner: Detecting Financial Contagion in a Multivariate System

Vasyl Golosnoy: The Empirical Similarity Approach for Volatility Prediction

## IS 1B: Application of Non- and Semiparametric Volatility and Correlation Models in Quantitative Risk Management and Measuring Systemic Risk

Melanie Schienle: Beyond Dimension Two: A Test for Higher-Order Tail Risk

Mengmeng Guo: Normality Test of Standardized Daily Return in the simultaneous Presence of Microstructure Noise and Jumps

Wei Cui: Dynamics of Natural Rate of Unemployment: A Structural Approach

## Keynote Talk I

Jan Beran: On Estimation of Cross-Sectional Dependence for Strongly Dependent Time Series

## IS 2A: Semiparametric Models for Trend and Volatility and their Applications

Sucharita Ghosh: Local Slope Estimation in Partial Linear Models under Gaussian Subordination

Yuanhua Feng: Non- and Semiparametric Modeling of Volatility and Correlation Components in Financial Returns

Liudas Giraitis: Autoregressive Conditional Duration and FIGARCH Models: Origins of Long Memory?

## IS2B: Nonparametrics of Volatility and Risk

Aijun Hou: Modelling and Forecasting short-term Interest Rate Volatility: A semiparametric Approach

Yang Zu: Estimating Stochastic Volatility Models with High-Frequency Data: A Monte Carlo Investigation

Xiao Xiao: Option implied Risk Measures: A Generalized Empirical Likelihood Approach

## IS 3A: Time Varying Volatility Models

Matei Demetrescu: Inference on the Long Memory Properties of Time Series with Non-Stationary Volatility

Rolf Tschernig: Fractionally Integrated VAR Models with a Fractional Lag Operator and Deterministic Trends: Finite Sample Identification and Two-Step Estimation

Christian Leschinski: Model Selection in Seasonal/Cyclical Long Memory Models

## IS 3B: Recent Development in Nonparametric Financial Econometrics

Johannes Schmidt-Hieber: Nonparametric Spot Volatility Estimation under Microstructure Noise

Weining Wang: Discontinuous Dynamic Semiparametric Factor models

Boqiang Huang: An optimization-based Empirical Mode Decomposition Scheme applied to Trading Volumes and Average Durations

# Friday, 25.07.2014

Time		
8:30 – 9:15	<p><b>Keynote Talk II by Timo Teräsvirta (Qo.101)</b>  <i>Specification and Testing of Multiplicative Time-Varying GARCH models with applications</i>            Chair: Liudas Giraitis</p>	
9:15 – 9:30	Short Break	
9:30 – 10:30	<p><b>Specially Invited Lecture by Peter M. Robinson (Qo.101)</b>  <i>Dependence and Nonstationarity in Time series and Spatial Data</i>            Chair: Siegfried Heiler</p>	
9:15 – 9:30	Coffee Break (Q-Building, Floor 1)	
11:00 – 12:30	<p><b>Invited Session 4A (Q2.113)</b>  <i>Semi/ Non-parametric Approaches for Realized Volatility and Correlations</i>            Organizer &amp; Chair: Francesco Audrino            Speakers: Jozef Barunik, Matthias Fengler, Lukáš Vácha</p>	<p><b>Invited Session 4B (Q2.122)</b>  <i>Aspects of Volatility Models and modeling Volatility</i>            Organizer &amp; Chair: Timo Teräsvirta            Speakers: Genaro Sucarrat, Christian Conrad, Francesco Violante</p>
12:30 – 14:00	Lunch Break and Poster Session (13:30 – 14:00, Q-Building, Floor 1)	
14:00 – 14:45	<p><b>Keynote Talk III by Luc Bauwens (Qo.101)</b>  <i>Long Term Component Dynamics Models for Realized Covariance Matrices</i>            Chair: Christian Hafner</p>	
14:45 – 15:00	Short Break	
15:00 – 16:30	<p><b>Invited Session 5A (Q2.113)</b>  <i>Volatility, Correlations and Financial Crises</i>            Organizer &amp; Chair: Christian Conrad            Speakers: Menelaos Karanasos, Uta Pigorsch, Roland Weigand</p>	<p><b>Invited Session 5B (Q2.122)</b>  <i>Test of Structural Breaks in Dependence</i>            Chair: Dominik Wied            Speakers: Robinson Kruse, Philipp Sibbertsen, Dominik Wied</p>
16:30 – 17:00	Coffee Break (Q-Building, Floor 1)	
17:00 – 18:30	<p><b>Invited Session 6 (17:00 – 18:00, Q2.113)</b>  <i>Semiparametric GARCH models</i>            Chair: Christian Hafner (Organizer: Lily Wang)            Speakers: Christian Hafner, Heejoon Han</p>	<p><b>Contributed Session 1 (Q2.122)</b>  <i>Non- and Semiparametric Approaches Based on High-Frequency Data</i>            Chair: Volker Seiler            Speakers: Andreas Fuest, Takaki Hayashi, Robert Maderitsch, Chen Zhou</p>
18:00 – 18:30	<b>18:00 – 18:30: Poster Session</b> (Q-Building, Floor 1)	



## Topics of presentations, Friday 25.07.2014

### *Keynote Talk II*

**Timo Teräsvirta:** Specification and Testing of Multiplicative Time-Varying GARCH Models with Applications

### *Specially Invited Lecture*

**Peter M. Robinson:** Dependence and Nonstationarity in Time Series and Spatial Data

### *IS 4A: Semi/Non-parametric Approaches for Realized Volatility and Correlations*

**Jozef Barunik:** Semiparametric Conditional Quantile Models for Financial Returns and Realized Volatility

**Matthias Fengler:** Additive Modelling of Realized Variance: Tests for Parametric Specifications and Structural Breaks

**Lukáš Vácha:** Asymmetric Connectedness of Stocks: How does Bad and Good Volatility spill over the U.S. Industries?

### *IS 4B: Aspects of Volatility Models and Modelling Volatility*

**Christian Conrad:** Misspecification testing in GARCH-MIDAS-X Models

**Genaro Sucarrat:** Unbiased QML Estimation of Log-GARCH Models in the Presence of Zero Return

**Francesco Violante:** On Weak Diffusion Limits of Dynamic Conditional Correlation Models

### *Keynote Talk III*

**Luc Bauwens:** Long Term Component Dynamics Models for Realized Covariance Matrices

### *IS5A: Volatility, Correlations and Financial Crises*

**Menelaos Karanasos:** Modelling Returns and Volatilities during Financial Crises: a Time Varying Coefficient Approach

**Uta Pigorsch:** Predicting Large Covariance Matrices Using a Characteristicbased Conditionally Heteroskedastic Factor Model

**Roland Weigand:** Matrix BoxCox Models for Multivariate Realized Volatility

### *IS 5B: Test of Structural Breaks in Dependence*

**Robinson Kruse:** Discriminating between Fractional Integration and spurious Long Memory

**Philipp Sibbertsen:** Testing for spurious Multivariate Long Memory

**Dominik Wied:** Nonparametric tests for Constant Tail Dependence with an Application to Energy and Finance

### *IS 6: Semiparametric GARCH Models*

**Christian Hafner:** A new Approach to Multivariate Volatility Modelling

**Heejoon Han:** Multiplicative GARCH-X Model

### *CS 1: Non- and Semiparametric Approaches based on High-Frequency Data*

**Andreas Fuest:** The Effects of Liquidity on Asset Price Volatility in a High-Frequency World

**Takaki Hayashi:** Lead-lag Analysis with High-Frequency Data: An Empirical Study for the Japanese Stock Market

**Robert Maderitsch:** A Quantile-Heterogeneous Model of Realized Volatility

**Chen Zhou:** Data-driven Estimating, Modelling and Forecasting Realized Kernels under Microstructure Noise

# Saturday, 26.07.2014

Time			
8:30 – 9:30	<p><b>Invited Session 7 (Q2.113)</b>  <i>Recent Development in Nonparametric Financial Econometrics II</i></p> <p>Chair: André Uhde            Speakers: Anna Simoni, Xiaojun Song</p>	<p><b>Contributed Session 2 (Q2.122)</b>  <i>Empirical Studies on Financial Market Behaviors</i></p> <p>Chair: Volker Seiler            Speakers: Volker Seiler, Weiyou Wu, Robert Maderitsch</p>	<p><b>Contributed Session 3 (Q2.101)</b>  <i>Recent Developments Financial Econometrics</i></p> <p>Chair: Sonja Lück            Speakers: Nam-Hyun Kim, Valeria Bondarenko, Sarah Forstinger</p>
9:30 – 9:40 9:40 – 11:10	Short Break		
11:10 – 11:30 11:30 – 12:30	<p><b>Invited Session 8A (Q2.113)</b>  <i>Non- and Semiparametric Extensions of GARCH Models</i></p> <p>Chair: Alexander Meister            Speakers: Alexander Meister, Patrick Saart, Yun Wang</p>		<p><b>Invited Session 8B (Q2.122)</b>  <i>Non-and Semiparametric Models for Panel Data</i></p> <p>Chair: Thomas Gries            Speakers: Juan Manuel Rodriguez Poo, Michael Vogt, Qualid Bada</p>
Coffee Break (O-Building, Floor 1)			
12:30 – 12:45	<p><b>Closing Lecture by Oliver Linton (Qo.101)</b>  <i>Multivariate Variance Ratio Statistics</i>            Chair: Winfried Pohlmeier</p>		
<p><b>Closing Speech by Peter M. Robinson (Qo.101)</b>            Chair: Luc Bauwens</p>			

## Topics of presentations, Saturday 26.07.2014

### *IS 7: Recent Development in Nonparametric Financial Econometrics II*

- Anna Simoni:** Semi-parametric Bayesian Partially Identified Models based on Support Function  
**Xiaojun Song:** Testing Symmetry of a Nonparametric Conditional Distribution

### *CS 2: Empirical Studies on Financial Market Behaviors*

- Volker Seiler:** On the Behaviour of Rare Earths Prices  
**Weiou Wu:** Quantile Dependence between Shanghai and Hong Kong Stock Markets: A Copula-based Approach  
**Robert Maderitsch:** Spillovers from the US to Stock Markets in Asia: A Quantile Regression Approach

### *CS 3: Recent Developments in Financial Econometrics*

- Nam-Hyun Kim:** Control Function Approach to Weak Instruments  
**Valeria Bondarenko:** The Modeling Time Series using Fractional Brownian Motion  
**Sarah Forstinger:** Modelling Financial Market Activities using a Varying Scale Log-ACD Model

### *IS 8A: Non- and semiparametric Extensions of GARCH Models*

- Alexander Meister:** Nonparametric Statistical Inference for Extensions of GARCH Models  
**Patrick Saart:** A Misspecification Test for Multiplicative Error Models of Nonnegative Time Series Processes  
**Yun Wang:** A Semiparametric Conditional Duration Model

### *IS 8B: Non- and Semiparametric Models for Panel Data*

- Juan Manuel Rodriguez Poo:** A new Nonparametric Estimator of a Panel Varying Coefficient Model with Fixed Effects  
**Michael Vogt:** A Semiparametric Model for Heterogeneous Panel Data with Fixed Effects  
**Oualid Bada:** Panel Data Models with Multiple Jump Discontinuities in the Parameters

### *Closing Lecture*

- Oliver Linton:** Multivariate Variance Ratio Statistics

### *Contributions to Poster Sessions*

- Sarah Forstinger:** On the Iterative Plug-In Algorithm for Estimating Diurnal Patterns of Financial Trading Durations  
**Tomáš Křehlík:** Disentangling Permanent from Transitory Spillovers  
**Christian Peitz:** Estimation of the Volatility Surface under a Spatial Model for High Frequency Financial Data  
**Xuehai Zhang:** A General Semiparametric GARCH Framework estimated under Weak Moment Conditions  
**Chen Zhou:** An Exponential SEMIFAR Model Applied to Forecasting Financial Market Activity

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