

# 28th International Scientific Conference on Mathematical Methods in Economics 2010

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## Conference Programme

Wednesday, September 8th, 2010

**Room: 1, chairman: Jan Pelikán**

- 13:30 Miloš Kopa  
*Incidence of stochastic dominance relation in financial data*
- 13:50 Martin Branda  
*Solving real-life portfolio problem using stochastic programming and Monte-Carlo techniques*
- 14:10 Michal Houda  
*Environmental factors in optimization of traffic line construction expenses*
- 14:30 Vlasta Kaňková  
*Ramsey Stochastic Model via Multistage Stochastic Programming*
- 14:50 Jan Voříšek  
*Estimating Stochastic Cusp Model Using Transition Density*

15:10 - 15:40 Coffee Break

**Room: 1, chairman: Karel Sladký**

- 15:40 Jozef Baruník, Lukáš Vácha, Ladislav Krištofuk  
*Comovement of Central European stock markets using wavelet coherence: Evidence from intraday data.*
- 16:00 Martin Šmíd  
*Dynamic model of Loan Portfolio with Levy Asset Prices*
- 16:20 Jakub Petrásek  
*Optimal Portfolio and Consumption under Pure Jump Process*
- 16:40 Jiří Haman, Petr Dostál  
*Evaluation of interval strategies for futures and stock trading with proportional transaction costs*
- 17:00 Petr Dostál, Aleksandra Tarabić  
*Almost optimal investment strategies for small transaction costs and independent assets*

**Room: 2, chairman: Martin Dlouhý**

- 13:30 Robert Hlavatý  
*Optimalization in stock control models with Markov property*
- 13:50 Pavel Gežík, Ivan Brezina, Juraj Pekár  
*Inventory management model with return*
- 14:10 Richard Cimler, Daniela Ponce  
*Solving queuing theory problems using multiagent systems*
- 14:30 Michal Kvasnička  
*Agent-based Computational Model of Democratic Choice of Redistribution under (Almost) Perfect Human Mobility*
- 14:50 Igor Krejčí  
*Computation of the Stocks and Consumption of Fixed Capital with use of Markov Chain*

15:10 – 15:40 Coffee Break

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### Room: 2, chairman Jaroslav Ramík

- 15:40 Simona Hašková Pavel Kolář  
*A contribution to a mathematic modeling of behavior of private and institutionalized investors as observed in practice*
- 16:00 Jitka Janová  
*Optimization models in agriculture and natural resources: the validation and verification process*
- 16:20 Hana Mihalčinová  
*Conditions which influence performance of economic system from perspective of game theory*
- 16:40 Jan Pelikán  
*On the complexity of the hybrid flowshop with adjustment*
- 17:00 Rostislav Staněk  
*Frictions in the exchange process and the Essentiality of Money*

### Room 3, chairman: Helena Brožová

- 13:30 Josef Jablonský  
*Comparison of ranking methods in data envelopment analysis models*
- 13:50 Jan Nevima, Jaroslav Ramík  
*Application of DEA for evaluation of regional efficiency of EU regions*
- 14:10 Veronika Skočdoplová, Josef Jablonský  
*Multi-Criteria Evaluation of Human Development in European Countries*
- 14:30 Martina Beránková, Milan Houška, Ludmila Dömeová  
*Cost and Benefit Criteria in MCDM Methods*
- 14:50 Veronika Vilánková, Jana Kalčevová  
*IZAR – the multiattribute evaluation decision support*

15:10 - 15:40 Coffee Break

### Room 3, chairman: Josef Jablonský

- 15:40 Andrea Voříšková, Jan Rydval  
*Comparison of decision-making methods*
- 16:00 Martin Flégl, Helena Brožová  
*Decision making models with fuzzy values*
- 16:20 Pavel Smrčka, Jana Kalčevová  
*Implementation of single-criteria discrete methods*
- 16:40 Jiří Mazurek  
*Group Decision Making in Ordinal Consensus Ranking Problem*
- 17:00 Jiří Hofman, Ladislav Lukáš  
*Application of entropy for supplier-customer system complexity analysis – case studies*

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### **Room 4, chairman: Osvald Vašíček**

- 13:30 Veronika Beláková  
*Analysis of Interactions Between Czech and Slovak Economy*
- 13:50 Jana Hančlová, Martin Luptáčik, Karol Szomolányi  
*A VEC Model of the Czech and Slovak economies*
- 14:10 Martin Slanicay  
*Structural Differences in DSGE Models with Nominal Rigidities*
- 14:30 Tomáš Motl, Osvald Vašíček  
*Analysis of behaviour of small open economy in period of dramatic economic events*
- 14:50 Jan Čapek  
*DSGE Model Sensitivity to Current Recession*

15:10 - 15:40 Coffee Break

### **Room 4, chairman: Jana Hančlová**

- 15:40 Miroslav Hloušek  
*Measuring output gap using New Keynesian model: application for the Czech economy*
- 16:00 Daniel Němec, Osvald Vašíček  
*Estimating structural changes of the Czech economy: How convincing are the symptoms of the economic crisis?*
- 16:20 Zdeněk Liščinský  
*Estimating Nonlinear Approximation of DSGE Models: the Case of Czech Economy*
- 16:40 Vladimír Mlynarovič  
*Portfolio insurance methods and moving investment horizons*
- 17:00 Jaromir Baxa  
*The Effects of Fiscal Policy in the Czech Republic*

# 28th International Scientific Conference on Mathematical Methods in Economics 2010

## Conference Programme

*Thursday, September 9th, 2010*

### **Room 1, chairman: Karel Zimmermann**

- 09:00 Vít Bubák, Evžen Kočenda, Filip Žikeš  
*Volatility Transmission in Emerging European Foreign Exchange Markets*
- 09:20 Vadym Omelchenko  
*Elliptical Stable Distributions*
- 09:40 Jan Kodera, Tran Van Quang  
*Application of Fuzzy Control on Inflation Targeting (Simple Model)*
- 10:00 Jan Šindelář  
*Bayesian vector auto-regression model with Laplace errors applied to financial market data*
- 10:20 Karel Sladký  
*Risk-Sensitive Ramsey Growth Model*
- 10:40 – 11:10 Coffee Break

### **Room 1, chairman: Jan Kodera**

- 11:10 Helena Myšková  
*An algorithm for testing T4 solvability of interval systems of linear equations in max-plus algebra*
- 11:30 Martin Gavalec, Zuzana Němcová  
*Eigenproblem for Queueing Systems in Max-Plus Algebra*
- 11:50 Agáta Bodnárová, Tomáš Fiedler, Martin Gavalec  
*Flow control in data communication networks using max-plus approach*
- 12:10 Imran Rashid, Martin Gavalec  
*Monotone eigenspace structure of a fuzzy (max,prod)-matrix*
- 12:30 Martin Gavalec, Hana Tomášková  
*Interval Eigenproblem for Circulant Matrices in Max-min Algebra*

### **Room 2, chairman: Václava Pánková**

- 09:00 Vladimíra Hovorková Valentová, Jiří Rozkovec  
*Comparison of Approaches Leading to Courses Credits Allocation Based on European Credit Transfer and Accumulation System (ECTS)*
- 09:20 Jana Mašátová, Jana Kalčevová, Martina Kuncová, Barbora Bokšťeflová, Pavel Smrčka  
*Comparison of the Universities from the Operational Research Point of View*
- 09:40 Václav Urbánek, Kateřina Maršiková, Pavla Řehořová  
*Expected Returns on University Investment: Survey in the Czech Republic and the UK*
- 10:00 Jana Talašová, Jan Stoklasa  
*Fuzzy approach to academic staff evaluation*
- 10:20 Pavel Holeček, Jana Talašová  
*Designing Fuzzy Models of Multiple-Criteria Evaluation in FuzzME Software*
- 10:40 – 11:10 Coffee Break

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*Thursday, September 9th, 2010*

### **Room 2, chairman: Miroslav Žižka**

- 11:10 Blanka Zemková, Jana Talašová  
*Applications of Fuzzy Sets in Human Resources Management*
- 11:30 Martin Pech, Jaroslava Smolová  
*Using of fuzzy entropy as a supportive method for managing the real supply chain:  
a case study*
- 11:50 Ondřej Krčál  
*Competition, Innovation and Technology Gap*
- 12:10 Petr Fiala  
*Approximations for solving network revenue management problems*
- 12:30 Pavel Pražák  
*On a Dynamic Model of Revenue Maximizing Firm*

### **Room 3, chairman: Petr Fiala**

- 09:00 Jan Bartoška, Tomáš Šubrt  
*The Phases of Work Effort and the Student Syndrome Model*
- 09:20 Zouhar Jan, Sládková Ivana  
*Scheduling Projects with Cyclical Structure: A Comparison of Fuzzy and  
Probabilistic Approaches*
- 09:40 Hana Brůhová-Foltýnová  
*Estimation of the value of time in the Czech Republic using discrete choice models*
- 10:00 Vítězslav Antoš, Roman Kvasnička  
*AHP in System for Project Staff Rewarding and Motivation*
- 10:20 Jiří Beck, Ladislav Lukáš  
*Analytic hierarchical process and weight generation for inconsistent interval  
comparison matrices by eigenvalue method*

10:40 – 11:10 Coffee Break

### **Room 3, chairman: Tomáš Šubrt**

- 11:10 Jaroslav Ramík, Josef Vícha  
*Fuzzy Bi-matrix Games*
- 11:30 Milan Horniaček  
*Strict Strong Perfect Equilibrium in a Bilateral Oligopoly*
- 11:50 Iveta Beččáková, Jana Talašová  
*Fuzzified Choquet integral: a way to model interacting criteria in decision making*
- 12:10 Aleš Antonín Kuběna  
*Pexeso ("Concentration game") as a arbiter of bounded-rationality models*
- 12:30 Jaroslav Mlýnek  
*Business Impact Analysis and Determination of Critical Information of Business Company*

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### **Room 4, chairman: Jan Hanousek**

- 09:00 Viktor Chrobok  
*On the Convergence of Czech and EU27's Net Export*
- 09:20 Pavla Vodová  
*Markets of loans provided to household and their integration measured by price indicators*
- 09:40 Šárka Lejnarová-Krkošková, Adéla Ráčková  
*Export analysis of selected transitive economies*
- 10:00 Irena Szarowská  
*The effect of tax burden on economic growth in the European Union*
- 10:20 Elena Mielcová  
*Cointegration Analysis of the Unemployment Rate Time Series – the Case of the Czech Republic, Slovakia, Poland, Austria, and Germany 1998-2009*
- 10:40 – 11:10 Coffee Break

### **Room 4, chairman: Evžen Kočenda**

- 11:10 Jan Stoklasa  
*Multiphase linguistic fuzzy model for the Czech emergency medical rescue services*
- 11:30 David Martinčík, Blanka Šedivá  
*Macroeconomic experimental model*
- 11:50 Veronika Mitřková  
*The Impact of the Fleet Renewal Scheme Proposal in the Czech Republic*
- 12:10 Daniel Stavárek  
*The effect of financial crisis on asymmetry of the exchange rate volatility in Central Europe*
- 12:30 Petr Volf  
*On Statistical Modeling of Incidence of Competing Events, with Application to Labor Mobility Analysis*

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## Conference Programme

*Friday, September 10th, 2010*

### **Room 1, chairman: Michal Holčapek**

- 09:00 Milan Václavík  
*Extension and Reconvexification of Markowitz's Optimal Portfolio Selection Model*
- 09:20 Martin Gavalec, Karel Zimmermann  
*Dual max-prod linear optimization problems*
- 09:40 Martin Gavalec, Karel Zimmermann  
*Optimization problems with two-sided systems of linear equations over distributive lattices*
- 10:00 Pavel Dvořák, Jan Hanousek  
*The determinants of retail bank fees in Central Europe*
- 10:20 Václava Pánková  
*FDI and Export, Substitute or Complement?*
- 10:40 – 11:10 Coffee Break

### **Room 1, chairman: Martin Gavalec**

- 11:10 Petr Jonáš  
*Robust estimation of the VAR model*
- 11:30 Michal Holčapek, Tomáš Tichý  
*Smoothing of FX returns by a filter based on fuzzy transform*
- 11:50 Michal Černý, Milan Hladík  
*The regression tolerance quotient in data analysis*
- 12:10 Jiri Skuhrovec  
*Bootstrapping Least Weighted Squares*
- 12:30 Aleš Kresta  
*A modeling quality comparison of estimated Lévy models*

### **Room 2, chairman: Jana Talašová**

- 09:00 Martin Klicnar  
*Multicategorical Response Models in Logistic Regression*
- 09:20 Ingrid Petrová  
*The analysis of impact of asset-holding period on the cost of capital in the context of Solvency II*
- 09:40 Petr Gurný, Martin Gurný  
*Comparison of the credit scoring models in PD estimation of US banks*
- 10:00 Tomáš Tichý  
*Market risk backtesting via Lévy models and parameter estimation*
- 10:20 Jiří Havlický, Tomáš Tichý  
*Operational risk - bottom up approach by copulas*
- 10:40 – 11:10 Coffee Break

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*Friday, September 10th, 2010*

### **Room 2, chairman: Jiří Beck**

- 11:10 Vladislav Chýna  
Clustering with Bregman divergence in factoring business
- 11:30 Miroslav Žížka  
*Quantitative Methods of Identification of Industry Clusters*
- 11:50 Petr Gurný, Eva Pardubická, Kateřina Lasáková  
*Prediction of the probability of default for the portfolio of three large Czech banks*
- 12:10 Petr Hájek  
Adaptive Fuzzy Rule-Based Systems for Credit Rating Analysis
- 12:30 Petr Gapko, Martin Šmíd  
*Modeling a distribution of mortgage credit losses*
- 12:50 Michal Tvrdoň  
*Regional Income Disparities in the new Member States: Decomposition and Measurement*

### **Room 3, chairman: Ladislav Lukáš**

- 09:00 Kristýna Ivanková  
*Application of isobars to stock market indices*
- 09:20 Vítězslav Píša  
*An Assessment of Land Use with a Computable General Equilibrium Model for the Czech Republic*
- 09:40 Karel Bába  
*Equity Home Bias in the Czech Republic*
- 10:00 David Hoyos, Petr Mariel, Jürgen Meyerhoff  
*Non-attendance in discrete choice experiments*
- 10:20 Petr Jablonský  
*Modelling and measuring dependencies between zero-bond returns*
- 10:40 – 11:10 Coffee Break

### **Room 3, chairman: Michael Rost**

- 11:10 Štefan Berežný, Marek Andrejkovič  
*The Processing Data For Time Series Analysis*
- 11:30 Miroslav Čulík, Jiří Valecký  
*Modelling daily electricity prices at Austria Energy Exchange: linear vs. non-linear (regime-switching) M-R models*
- 11:50 Martin Dlouhý  
A Classification of Simulation and Management Methods
- 12:10 Ladislav Lukáš  
*Application of empirical mode decomposition to analyze simulated financial time series*

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*Friday, September 10th, 2010*

### **Room 3, chairman: Michael Rost**

- 12:30 Miroslav Plevný, Petra Lavičková  
*Modelling of evaluation of a company investment into an information system – case study*
- 12:50 Jana Friebelová, Ludvík Friebel  
*Stochastic analysis of maintenance process costs in IT industry - a case study*

### **Room 4, chairman: Miroslav Plevný**

- 09:00 Jana Hančlová  
Output convergence amongst the NUTS 2 regions of Visegrad countries
- 09:20 Dagmar Škodová Parmová  
*Statistic methods of multidimensional scaling used for competitiveness comparison*
- 09:40 Pavel Herber, Daniel Němec  
*Investigating structural differences of the Czech economy: Does asymmetry of shocks matter?*
- 10:00 Jana Klicnarová, Renata Klufová, Michael Rost, Marek Šulista  
*Development typology of the demographic growth in the Czech Republic*
- 10:20 Martina Kuncová, Jana Kalčevová, Jakub Novotný, Hana Vojáčková  
*Multicriteria Decision in the Analysis of the Market Environment for the Notification Process of the Broadband Network Development*
- 10:40 – 11:10 Coffee Break

### **Room4, chairman Martin Šmíd**

- 11:10 Petr Kučera  
*Different versions of the Savings Method for the Time Limited Vehicle Problem*
- 11:30 Jan Fábry  
*Optimization of Routes in Pickup and Delivery Problem*
- 11:50 Tomáš Majer  
*Shortest Trail Problem with Respect to Prohibited maneuvers*
- 12:10 Stanislav Palúch  
*A Vehicle Scheduling Algorithm Based on Vertex Covering by a Set of Disjoint Paths*
- 12:30 Ladislav Beránek, Pavel Tlustý, Radim Remeš  
*The usage of belief functions in online auction trust model*