



Croatian Operational  
Research Society



Faculty of Economics in  
Osijek, University of  
Osijek



Department of  
Mathematics,  
University of Osijek

15<sup>th</sup> International Conference on  
Operational Research KOI 2014

# KOI 2014 Conference Program

Osijek, Croatia, 24-26 September, 2014.

## Organizers:

**Croatian Operational Research Society**

In collaboration with  
Faculty of Economics in Osijek, University of Osijek, Croatia  
&  
Department of Mathematics, University of Osijek, Croatia

## Conference venue:

Faculty of Economics in Osijek, Trg Lj. Gaja 7, 31000 Osijek, Croatia

<http://www.hdoi.hr/koi2014>

## Sponsored by:



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Osijek Tourist Board

15th International Conference on Operational Research KOI 2014, Osijek, Croatia  
**Program Overview**

Day/Time	8:00-9:00	9:00-10:00	10:15-11:00	11:00-11:30	11:30-13:00	13:00-14:00	14:00-14:45	15:00-16:30	16:30-16:45	17:00-18:30	19:30
<b>Wednesday September 24, 2014</b>	Registration at the registration desk*	Opening session	<b>Plenary Lecture 1</b> <b>James Cochran</b> University of Alabama, USA	Coffee break	Parallel sessions A, B, C, and Special Section in Honor of L.Neralic	Lunch break	<b>Plenary Lecture 2</b> <b>Goran Lešaja</b> Georgia Southern University, USA	Teaching Effectiveness Colloquium – part 1	Coffee break	Parallel sessions A, B, C	Welcome reception - Light boat dinner on Drava river
Day/Time	8:00-8:30	8:30-9:15	9:20-10:50	10:50-11:05	11:05-12:35	12:35-14:00	14:00-15:00	15:15-20:00		20:00	
<b>Thursday September 25, 2014</b>	Registration at the registration desk*	<b>Plenary Lecture 3</b> <b>Ali Emrouznejad</b> Aston University, UK	Parallel sessions A, B, C, and Special Section in Honor of L. Neralić	Coffee break	Parallel sessions A, B, C	Lunch break	Teaching Effectiveness Colloquium – part 2	Excursion to Baranya region (Park of nature Kopacki rit, Belje winery with wine tasting)		Traditional Slavonian dinner with folk music	
Day/Time	8:00-8:30	8:30-9:15	9:20-10:50	10:50-11:05	11:05-12:35	12:35-14:00	14:00-14:45	15:00-16:30	16:30-16:45	16:45-17:30	17:30-18:30
<b>Friday September 26, 2014</b>	Registration at the registration desk*	<b>Plenary Lecture 4</b> <b>Janez Povh</b> Faculty for Information Studies in Novo mesto, Slovenia	Parallel sessions A, B, C, and Special Section in Honor of L. Neralić	Coffee break	Parallel sessions A, B, C	Lunch break	<b>Plenary Lecture 5</b> <b>Amir Nakib</b> Université Paris Est Créteil, France	Teaching Effectiveness Colloquium – part 3	Coffee break	Closing session	CRORS (HDOI) Annual meeting

\* Registration and Information desk working hours: from Wednesday to Friday 8.00-18.00

Duration of plenary lectures: 40 minutes lecture + 5 minutes for discussion

Duration of contributed presentations: 15 minutes presentation + 3 minutes for discussion

15th International Conference on Operational Research KOI 2014, Osijek, Croatia  
**Detailed program**

**Wednesday September 24, 2014 – 1<sup>st</sup> day**

Event / Session	Time	Room	Paper title	Author name and institution
Registration at the registration desk	8:00-9:00	Ground floor		
<b>Opening session</b>	9:00-10:00	Room 1 (ground floor)		
<b>Plenary Lecture 1</b> <b>James J. Cochran</b> , University of Alabama, Tuscaloosa, USA  Chair: <b>Luka Neralić</b>	10:15-11:00	Room 1 (ground floor)	<b>How are Analytics and Operations Research Related?</b>	<b>James J. Cochran</b> , Department of Information Systems, Statistics, and Management Science, University of Alabama, Tuscaloosa, USA
<b>Coffee break</b>	11:00-11:30	Room 3 (ground floor)		
<b>Parallel sessions A, B, C, and Special Section in Honor of L. Neralić</b>	11:30-13:00			
<b>Session A1 – OR Theory and Application</b> Chair: <b>Mirjana Pejić Bach</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	11:30-13:00	Room 12 (2nd floor)	A1-1. Decision-Making Under Non-Probabilistic Uncertainty	<b>Moshe Sniedovich</b> , Department of Mathematics and Statistics, University of Melbourne, Australia
			A1-2. Algorithm for The Nonlinear Generalized Transportation Problem	<b>Marcin Anholcer</b> , Department of Operations Research, Poznań University of Economics, Poland
			A1-3. Using Artificial Neural Networks in The Prediction of Incorrect Values of Coal Drying Experiments	<b>Mustafa Tahir Akkoyunlu, Mehmet Cabir Akkoyunlu, Şaban Pusa, Coskun Özkan</b> , YTU Faculty of Mechanical Engineering , Yildiz Technical University, Turkey
			A1-4. Testing the Sustainability of Croatian Military Forces: System Dynamics Approach	<b>Emil Tustanovski, Mirjana Pejić Bach, Ilko Vrankić</b> , Faculty of Economics & Business, University of Zagreb, Croatia

Event / Session	Time	Room	Paper title	Author name and institution
<p>Session B1 – Mathematical Programming Chair: <b>Karlo Kotarac</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>11:30- 13:00</b></p>	<p><b>Room 13 (2nd floor)</b></p>	<p>B1-1. Min-Max Optimal Public Service System Design</p>	<p><b>Marek Kvet</b>, University Science Park, University of Žilina, Slovakia <b>Jaroslav Janaček</b>, Faculty of Management Science and Informatics, University of Žilina, Slovakia</p>
			<p>B1-2. Finding An Optimal Seating Arrangement for Employees Traveling to An Event</p>	<p><b>Ninoslav Čerkez</b>, IN2 d.o.o., Croatia <b>Rebeka Čordaš, Mateja Đumić, Domagoj Matijević</b>, Department of Mathematics, J.J. Strossmayer University of Osijek, Croatia</p>
			<p>B1-3. Evaluating The Innovation Efficiency of European Countries by DEA and Malmquist-TFP Index</p>	<p><b>Ilker Murat Ar</b>, Department of Business Administration, Karadeniz Technical University, Turkey</p>
			<p>B1-4. An Integer Programming Model for Assigning Students to Elective Courses</p>	<p><b>Ivo Beroš, Joško Meter</b>, Department of Applied Mathematics and Computer Science, VERN' University of Applied Sciences, Croatia</p>
			<p>B1-5. Min-Max Optimization with Radial Approach to The Public Service System Design with Generalized Utility</p>	<p><b>Jaroslav Janaček</b>, Faculty of Management Science and Informatics, University of Žilina, Slovakia <b>Marek Kvet</b>, University Science Park, University of Žilina, Slovakia</p>
<p>Session C1 – Multicriteria Decision Making Chair: <b>Samo Drobne</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>11:30- 13:00</b></p>	<p><b>Room 14 (2nd floor)</b></p>	<p>C1-1. Accounting for Asymmetry Between Strengths, Weaknesses, Opportunities and Threats in Decision Making: The SPADE Outranking Approach</p>	<p><b>Nassim Dehouche</b>, <b>Daniel Vanderpooten</b>, Université Paris- Dauphine – LAMSADE, France</p>
			<p>C1-2. A Computational Study of Labelling Algorithms for Multi- Objective Shortest Path Problems With or Without Resource Constraints</p>	<p><b>Yi Qu, Tolga Bektas</b>, <b>Julia Bennell</b>, Southampton Management School, University of Southampton, United Kingdom</p>

Event / Session	Time	Room	Paper title	Author name and institution
			C1-3. Stability Analysis in Multi-Criteria Discrete Optimization Models: Quantitative and Qualitative Approaches	<b>Vladimir Korotkov</b> , Department of Mathematics and Statistics, University of Turku, Finland <b>Kuzmin Kirill</b> , Department of Mechanics and Mathematics, Belarusian State University, Belarus <b>Nikulin Yury</b> , Department of Mathematics and Statistics, University of Turku, Finland
			C1-4. Application of Markov Decision Processes in Minimization of the Expected Costs	<b>Marija Rukav</b> , Department of Mathematics, J. J. Strossmayer University of Osijek <b>Kruno Stražanac</b> , Farmeron d.o.o., Osijek, <b>Nenad Šuvak, Zoran Tomljanović</b> , Department of Mathematics, J. J. Strossmayer University of Osijek
			C1-5. Project Management in Mine Actions Using Multi-Criteria-Analysis-Based Decision Support System	<b>Marko Mladineo</b> , Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia <b>Nenad Mladineo, Jajac Niksa</b> , Faculty of Civil Engineering, Architecture and Geodesy, University of Split, Croatia
Session LN1 - Special Section in Honor of Luka Neralic Chair: <b>Zrinka Lukač</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>11:30-13:00</b>	<b>Room 1 (ground floor)</b>	LN1-1. Satisficing DEA: Bayesian Predictive Analytics for Peer Mining	<b>Vincent Charles</b> , CENTRUM Católica Graduate Business School, Pontificia Universidad Católica del Perú, Peru
			LN1-2. Sensitivity Analysis of Input Relaxation Super Efficiency Measure in Data Envelopment Analysis	<b>Mohammad Khodabakhshi, Saba Rashidi</b> , Department of Mathematics, Faculty of sciences, Lorestan University, Iran <b>Masoud Asgharian</b> , Department of Mathematics and statistics, McGill

Event / Session	Time	Room	Paper title	Author name and institution
				University, Canada <b>Luka Neralić</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			LN1-3. Improving Efficiency of Efficient Decision Making Unit	<b>Valter Boljunčić</b> , Faculty of Economics and Tourism "Dr. Mijo Mirković" Juraj Dobrila, University of Pula
			LN1-4. Efficiency Evaluation of Stock Portfolios based on Multiple Risk Measures: a DEA-like Envelopment Approach	<b>Yongjun Li, Hengxuan Gao, Liang Liang, Wei Lu</b> , Management School, University of Science and Technology of China, China
			LN1-5. DEA for Performance Evaluation and Benchmarking: Two Case Studies for Optimal Ecosystem Management	<b>Lidija Zadnik Stirn</b> , Biotechnical Faculty, University of Ljubljana, Slovenia
<b>Lunch break</b>	<b>13:00-14:00</b>			
<b>Plenary Lecture 2</b> <b>Goran Lešaja</b> , Georgia Southern University, USA  Chair: <b>Rudolf Scitovski</b>	<b>14:00-14:45</b>	<b>Room 1 (ground floor)</b>	<b>Interior-Point Methods for Linear Complementarity Problems and Generalizations</b>	<b>Goran Lešaja</b> , Department of Mathematical Sciences, Georgia Southern University, USA
Teaching Effectiveness Colloquium (TEC) Croatia Workshop – part 1	<b>15:00-16:30</b>	<b>Room 1 (ground floor)</b>	<b>Modeling for Insights</b>	<b>Jeffrey D. Camm</b> , Department of Operations, Business Analytics, and Information Systems, University of Cincinnati, USA
<b>Coffee break</b>	<b>16:30-16:45</b>	<b>Room 3 (ground floor)</b>		
<b>Parallel sessions A, B, C</b>	<b>17:00-18:30</b>			
Session A2 – OR Theory and Application Chair: <b>Darija Marković</b>  Time for each	<b>17:00-18:30</b>	<b>Room 12 (2nd floor)</b>	A2-1. Harmony Search Algorithm for Solving Hybrid Flow Shop Scheduling Problems	<b>Mehmet Cabir Akkoyunlu</b> , YTU Faculty of Mechanical Engineering, Yildiz Technical University, Turkey <b>Orhan Engin</b> , Faculty of

Event / Session	Time	Room	Paper title	Author name and institution
presentation: 15 minutes presentation + 3 minutes for discussion				Engineering, Selcuk University, Turkey
			A2-2. Single-Objective and Multi-Objective Optimization Using HUMANT Algorithm	<b>Marko Mladineo, Ivica Veza, Nikola Gjeldum</b> , Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia
			A2-3. Solving the Utility Maximization Problem with The Cobb-Douglas and CES Utility Function Without The Use of Calculus	<b>Vedran Kojić</b> , Department of Mathematics, Faculty of Economics and Business, University of Zagreb, Croatia
			A2-4. On The Existence of The Nonlinear Weighted Least Squares Estimate for Some Special Exponential Type Models	<b>Darija Marković, Luka Borozan</b> , Department of Mathematics, J.J. Strossmayer University of Osijek, Croatia
Session B2 – Mathematical Programming Chair: <b>Kristian Sabo</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	17:00- 18:30	Room 13 (2nd floor)	B2-1. Approximation of k-Minimum Hamiltonian Cover Problem	<b>Michael Khachay, Ekaterina Neznakhina</b> , Krasovsky Institute of Mathematics and Mechanics, Russia
			B2-2. Multiple Ellipse Fitting by Center-Based Clustering	<b>Tomislav Marošević, Rudolf Scitovski</b> , Department of Mathematics, J.J. Strossmayer University of Osijek, Croatia
			B2-3. Heuristic Methods for The Solution of The Tariff Zones Design	<b>Michal Koháni</b> , Department of mathematical methods and operations research, University of Žilina, Slovakia
			B2-4. A Comparison of Tabu Search Algorithm and Mathematical Model in a Pipeline Network	<b>Engin Pekel, Selin Soner Kara</b> , Department of Industrial Engineering, Yildiz Technical University, Turkey
			B2-5. Run-time Parameter Tuning of Optimization Systems	<b>Péter Tar, József Smidla, István Maros</b> , Department of Computer Science and Systems Technology, University of Pannonia, Hungary
Session C2 – Multicriteria	17:00- 18:30	Room 14 (2nd floor)	C2-1. Fuzzy Group Decision Support System Based on AHP and	<b>Petra Grošelj, Lidija Zadnik Stirn</b> , Biotechnical Faculty,

Event / Session	Time	Room	Paper title	Author name and institution
<b>Decision Making</b> Chair: <b>Danijela Rabar</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion			SWOT for Solving Natural Resource Management Problem in Slovenia	University of Ljubljana, Slovenia
			C2-2. Performance Concept in Cost-Effective Construction Management of Educational Facilities	<b>Ivona Gudac, Ivan Marović, Diana Car-Pušić</b> , Faculty of Civil Engineering, University of Rijeka, Croatia
			C2-3. Stock Selection using A Hybrid MCDM Approach	<b>Tea Poklepović, Zoran Babić</b> , Faculty of Economics, University of Split, Croatia
			C2-4. Cost Effectiveness of ATM's Automatic Deposit Service	<b>Marko Hell</b> , Faculty of Economics, University of Split, Croatia <b>Ivica Županović</b> , Splitska banka - Societe Generale Group, Croatia <b>Dino Pavlić</b> , Faculty of Economics, University of Split, Croatia
<b>Welcome reception - Light boat dinner on Drava river</b>	<b>19:30</b>			



## Thursday, September 25<sup>th</sup>, 2014 – 2<sup>nd</sup> day

Event / Session	Time	Room	Paper title	Author name and institution
Registration at the registration desk	8:00-8:30	Ground floor		
<b>Plenary Lecture 3</b> <b>Ali Emrouznejad</b> , Aston University, UK  Chair: <b>Luka Neralić</b>	8:30-9:15	Room 1 (ground floor)	<b>A Systematic Process for Measuring Efficiency of Decision Making Units using Data Envelopment Analysis</b>	<b>Ali Emrouznejad</b> , Operations & Information Management Group, Aston Business School, Birmingham, United Kingdom
<b>Parallel sessions A, B, C, and Special Section in Honor of L. Neralić</b>	9:20-10:50			
Session A3 – OR Theory and Application Chair: <b>Kristina Šorić</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	9:20-10:50	Room 12 (2nd floor)	A3-1. A Partial Backlogging Inventory Model for Deteriorating Items with Time-Varying Demand and Holding Cost: An Interval Number Approach	<b>Debashis Dutta, Pavan Kumar</b> , Department of Mathematics, National Institute of Technology, India
			A3-2. A Framework in The Formulation and Solution of Inventory Routing Problems	<b>Raúl Roldán, Rosa Basagoiti</b> , Electronics and Computing Department, Mondragon University, Spain <b>Enrique Onieva</b> , Deusto Institute of Technology (DeustoTech), University of Deusto, Spain
			A3-3. A Mathematical Model for Centralization of Humanitarian Relief Logistics Networks	<b>Erkan Celik, Alev Taskin Gumus</b> , Department of Industrial Engineering, Yildiz Technical University, Turkey
			A3-4. Hybrid Dynamic Cross Impact Analysis with Markov Chain and Trend Impact Analysis	<b>Amany Mohamed Mamdouh, Mohamed M. Saleh, Abd El-Hadi N. Ahmed, Nedaa Mohamed Ezzat Agami</b> , Operations Research & Decision Support Department, Faculty of Computers & Information, Cairo University, Egypt
			A3-5. Inventory Sharing with Speculations	<b>Andrija Raguž, Kristina Šorić, Ivan Šutalo</b> , Zagreb School of Economics and Management, Croatia
Session B3 –	9:20-	Room 13	B3-1. From Diagnosis	<b>Robert Zenzerović</b> ,

Event / Session	Time	Room	Paper title	Author name and institution
<p>Quantitative Methods in Banking and Finance Chair: <b>Mirjana Čižmešija</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>10:50</b></p>	<p><b>(2nd floor)</b></p>	to Prognosis of Financial (In)stability – Auditors’ Opinion Approach	Faculty of Economics and Tourism “Dr. Mijo Mirković”, Juraj Dobrila, University of Pula, Croatia <b>Martin Valić Vale</b> , Riviera Adria d.d., Croatia
			B3-2. Testing for Regime-Switching CAPM on Zagreb Stock Exchange	<b>Tihana Škrinjarić</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			B3-3. Estimating Investors Preferences Towards Portfolio Return Distribution Moments: Empirical Evidence from Croatian Investment Funds	<b>Margareta Gardijan, Tihana Škrinjarić</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			B3-4. The Application of Portfolio Optimization Methods in Investment Risk Management – Evidence from Zagreb Stock Exchange	<b>Jovan Njegić, Nataša Papić Blagojević</b> , Novi Sad Business School, Serbia <b>Marijana Ćurak</b> , Faculty of Economics, University of Split, Croatia
			B3-5. A Comparison of Four Different Block Bootstrap Methods	<b>Boris Radovanov, Aleksandra Marcikić</b> , Faculty of Economics Subotica, University of Novi Sad, Serbia
<p>Session C3 – Multicriteria Decision Making Chair: <b>Petar Sorić</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>9:20-10:50</b></p>	<p><b>Room 14 (2nd floor)</b></p>	C3-1. Planning Support Concept to Implementation of Sustainable Parking Development Projects in Ancient Mediterranean Cities	<b>Nikša Jajac</b> , Faculty of Civil Engineering, Architecture and Geodesy, University of Split, Croatia <b>Ivan Marović</b> , Faculty of Civil Engineering, University of Rijeka, Croatia <b>Marko Mladineo</b> , Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split, Croatia
			C3-2. Technology Competency Evaluation of The Manufacturing Companies Via Multi-Criteria Approaches	<b>Ufuk Bolukbas, Ali Fuat Guneri</b> , Department of Industrial Engineering, Yildiz Technical University, Turkey
			C3-3. The Setting of Key Performance Targets for Croatian	<b>Danijela Rabar</b> , Faculty of Economics and Tourism “Dr. Mijo

Event / Session	Time	Room	Paper title	Author name and institution
			Shipyards	Mirković", Juraj Dobriša University of Pula, Croatia
			C3-4. Ranking Zones Model – A Multicriterial Approach for Spatial Management of Urban Areas	<b>Ivan Marović</b> , Faculty of Civil Engineering, University of Rijeka, Croatia <b>Nikša Jajac</b> , Faculty of Civil Engineering, Architecture and Geodesy, University of Split, Croatia <b>Ivica Završki</b> , Faculty of Civil Engineering, University of Zagreb, Croatia
			C3-5. Maximizing the Number of Effective 2-Cycles in Kidney Exchange Programs	<b>Filipe Alvelos</b> , Department of Production and Systems Engineering, University of Minho, Portugal <b>Xenia Klimentova</b> , INESC TEC, Portugal <b>Ana Viana</b> , INESC TEC and ISEP - School of Engineering, Polytechnic of Porto, Portugal <b>Abdur Rais</b> , Department of Production and Systems Engineering, University of Minho, Portugal
Session LN2 - Special Section in Honor of Luka Neralic Chair: <b>Richard E. Wendell</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>9:20-10:50</b>	<b>Room 1 (ground floor)</b>	N2-1. On Local Search Based Heuristics for Optimization Problems	<b>Janez Žerovnik</b> , Faculty of Mechanical Engineering, University of Ljubljana, Slovenia
			N2-2. On Solving Hard Optimization Problems Using SDP	<b>Renata Sotirov</b> , Department of Econometrics and Operations Research, Tilburg University
			N2-3. Improved Full-Newton-Step Interior-Point Methods for LO and LCP	<b>Goran Lešaja</b> , Department of Mathematical Sciences, Georgia Southern University, USA

Event / Session	Time	Room	Paper title	Author name and institution
			N2-4. Analysis of The Applicability of Goal Programming Procedure for Solving Fuzzy Multiobjective Linear Fractional Programming Problems	<b>Tunjo Perić</b> , Faculty of Economics & Business, University of Zagreb, Croatia <b>Zoran Babić</b> , Faculty of Economics, University of Split, Croatia <b>Sead Rešić</b> , Faculty of Science, University of Tuzla, Bosnia and Herzegovina
			N2-5. Tolerance Sensitivity in DEA	<b>Luka Neralić</b> , Faculty of Economics and Business, University of Zagreb, Croatia <b>Richard E. Wendell</b> , Joseph M. Katz Graduate School of Business, University of Pittsburgh, USA
<b>Coffee break</b>	<b>10:50-11:05</b>	<b>Room 3 (ground floor)</b>		
<b>Parallel sessions A, B, C</b>	<b>11:05-12:35</b>			
<b>Session A4 – OR Theory and Application</b> Chair: <b>Ivan Marović</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>11:05-12:35</b>	<b>Room 12 (2nd floor)</b>	A4-1. Linear Programming Model for Rostering Ambulance Crew	<b>Aleksandra Marcikić, Boris Radovanov</b> , Faculty of Economics Subotica, University of Novi Sad, Serbia
			A4-2. Modeling Emergency Department Patient Surge in Disaster Conditions by Simulation	<b>Muhammet Gul, Ali Fuat Guneri</b> , Department of Industrial Engineering, Yildiz Technical University, Turkey
			A4-3. Performance Evaluation and Regulation Influence on The Portuguese Water Sector	<b>Rui Cunha Marques, Pedro Simões</b> CESUR, IST, University of Lisbon, Portugal
			A4-4. A Market Structure Analysis of The Brazilian Water Sector	<b>Pedro Carvalho, Pedro Simões, Rui Cunha Marques</b> , CESUR, IST, University of Lisbon, Portugal
			A4-5. Integrated Forest Road Maintenance and Harvest Scheduling With Endogenous Costs	<b>Sándor F.Tóth</b> , School of Environmental & Forest Sciences University of Washington, USA <b>Kai Ross</b> , Quantitative Ecology & Resource Management,

Event / Session	Time	Room	Paper title	Author name and institution
				University of Washington, USA <b>Weikko Jaross</b> , Washington State Department of Natural Resources, USA
<p>Session B4 – Quantitative Methods in Banking and Finance Chair: <b>Tihana Škrinjaric</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p>11:05-12:35</p>	<p>Room 13 (2nd floor)</p>	B4-1. Multivariate Approach to Determination of Intermediate Target of Monetary Policy Strategy in CEE Countries	<b>Mario Pečarić, Snježana Pivac, Josip Visković</b> , Faculty of Economics, University of Split, Croatia
			B4-2. Stochastic Programming Framework for Lithuanian Pension Payout Modelling	<b>Audrius Kabašinskas, Kristina Šutienė, Valakevičius Eimutis</b> , Department of Mathematical Modeling, Kaunas University of Technology, Lithuania <b>Francesca Maggioni</b> , Department of Management, Economics and Quantitative Methods, University of Bergamo, Italy
			B4-3. Testing The Effects of Financial Literacy on Debt Behavior of Croatian Financial Consumers Using Multivariate Analysis Methods	<b>Vlasta Bahovec, Dajana Cvrilje, Irena Palić</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			B4-4. Statistical Analyses of Investment and Pension Funds' Performances from South-Eastern Europe	<b>Petar Taleski</b> , NLB Nov penziski fond Skopje, Euro College – Kumanovo, Macedonia <b>Vasko Bogdanovski</b> , NLB Nov penziski fond Skopje, Macedonia
			B4-5. Measurement of European Banking Industry Cost Efficiency	<b>Alen Stojanović, Branka Jurčević</b> , Faculty of Economics and Business, University of Zagreb, Croatia
<p>Session C4 – Statistics and Econometrics Chair: <b>Ksenija Dumičić</b></p> <p>Time for each</p>	<p>11:05-12:35</p>	<p>Room 14 (2nd floor)</p>	C4-1. Which Distance-Decay Function for Migration and Which One for Commuting? The Case Study of Slovenia	<b>Samo Drobne, Mitja Lakner</b> , Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia
			C4-2. Adjusting for A	<b>Josip Arnerić, Anita</b>

Event / Session	Time	Room	Paper title	Author name and institution
presentation: 15 minutes presentation + 3 minutes for discussion			Calendar Effects of Real Retail Trade Turnover Time Series in Croatia	<b>Čeh Časni</b> , Faculty of Economics and Business Zagreb, University of Zagreb, Croatia <b>Marko Čular</b> , Faculty of Economics, University of Split, Croatia
			C4-3. Development Index: Do Weights Matter? An Application of Data-Driven Weights and Restrictions in The Construction of Composite Indicators	<b>Ana Perišić</b> , Polytechnic of Šibenik, Croatia
			C4-4. Research and Evaluation of The Effectiveness of E-Learning: a Linear Programming Case Study	<b>Ljiljana Miletić</b> , Gimnasium Pozega, Croatia
<b>Lunch break</b>	<b>12:35-14:00</b>			
Teaching Effectiveness Colloquium (TEC) Croatia Workshop – part 2	<b>14:00-15:00</b>		<b>Excel-Based Tools for Teaching Analytics</b>	<b>Michael J. Fry</b> , Department of Operations, Business Analytics & Information Systems, Carl H. Lindner College of Business, University of Cincinnati, USA
Excursion to Baranya region (Park of nature Kopacki rit, Belje winery with wine tasting)	<b>15:15-20:00</b>			
Traditional Slavonian dinner with folk music	<b>20:00</b>			

## Friday, September 26<sup>th</sup>, 2014 – 3<sup>rd</sup> day

Event / Session	Time	Room	Paper title	Author name and institution
Registration at the registration desk	8:00-8:30	Ground floor		
<b>Plenary Lecture 4</b> <b>Janez Povh</b> , Faculty for Information Studies Novo mesto, Slovenia  Chair: <b>Dragan Jukić</b>	8:30-9:15	Room 1 (ground floor)	<b>From Combinatorial Optimization to Real Algebraic Geometry and Back</b>	<b>Janez Povh</b> , Faculty for Information Studies in Novo mesto, Slovenia
<b>Parallel sessions A, B, C, and Special Section in Honor of L. Neralić</b>	9:20-10:50			
Session A5 – OR Theory and Application Chair: <b>Snježana Pivac</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	9:20-10:50	Room 12 (2nd floor)	A5-1. Modifications of The Omega Ratio for Decision Making Under Uncertainty	<b>Helena Gaspars-Wieloch</b> , Department of Operations Research, Faculty of Informatics and Electronic Economy, Poznań University of Economics, Poland
			A5-2. Impacts on Internet Booking for Travel and Holiday Accommodation in European Countries: Multivariate Analysis Approach	<b>Ksenija Dumičić, Berislav Žmuk, Anita Čeh Časni</b> , Department of Statistics, Faculty of Economics and Business – Zagreb, University of Zagreb, Croatia
			A5-3. A Group Decision Support System for Evaluating The Efficiency of Academic Units	<b>Gregory Koronakos, Dimitris Sotiros, Athanasios Zigomitros, Dimitris Apostolou, Dimitris Despotis</b> , Department of Informatics, University of Piraeus, Greece
			A5-4. Comparison of Discrete Event Simulation Tools in An Academic Environment	<b>Mario Jadrić, Maja Čukušić, Antonia Bralić</b> , Faculty of Economics, University of Split, Croatia
Session B5 – Machine Learning, Data Mining and Analytics Chair: <b>Nataša Šarlija</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	9:20-10:50	Room 13 (2nd floor)	B5-1. A New Fusion Algorithm for Fuzzy Clustering	<b>Ivan Vidović, Dražen Bajer</b> , Faculty of Electrical Engineering, University of Osijek, Croatia <b>Rudolf Scitovski</b> , Department of Mathematics, J.J. Strossmayer University of Osijek, Croatia
			B5-2. Color Image Segmentation Based on	<b>Petar Taler, Kristian Sabo</b> , Department of

Event / Session	Time	Room	Paper title	Author name and institution
			Intensity and Hue Clustering - Least Square and Least Absolute Deviation Approaches Comparison	Mathematics, J.J. Strossmayer University of Osijek, Croatia
			B5-3. Customer Segmentation Using Neural Networks	<b>Dajana Ćorić</b> , Faculty of Economics & Business, University of Zagreb, Croatia
			B5-4. Aligning Classification Schemas of The Croatian Encyclopedia and Wikipedia Through Supervised Machine Learning	<b>Ozren Kubelka</b> , Department of Applied Mathematics and Computer Science, VERN' University of Applied Sciences, Croatia <b>Nikola Ljubešić</b> , Faculty of Humanities and Social Sciences, University of Zagreb, Croatia <b>Siniša Jovčić</b> , A.G. Matoš Elementary School, Zagreb, Croatia
			B5-5. Business Clusters in Croatian Furniture Industry	<b>Martina Briš Alić</b> , Faculty of Economics in Osijek, Josip Juraj Strossmayer University of Osijek, Croatia <b>Alen Alić</b> , Aurea Grupa d.o.o., Croatia <b>Rudolf Scitovski</b> , Department of Mathematics, J.J. Strossmayer University of Osijek, Croatia
Session C5 – Statistics and Econometrics Chair: <b>Nataša Erjavec</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>9:20-10:50</b>	<b>Room 14 (2nd floor)</b>	C5-1. Entrepreneurial Intention Modeling Using Hierarchical Multiple Regression	<b>Marina Jeger</b> , Faculty of Economics in Osijek, University of Josip Juraj Strossmayer in Osijek, Croatia <b>Zoran Sušanj</b> , Faculty of Humanities and Social Sciences, University of Rijeka, Croatia <b>Josipa Mijoč</b> , Faculty of Economics in Osijek, University of Josip Juraj Strossmayer in Osijek, Croatia
			C5-2. Liquidity Indicator for The Croatian Economy – Factor Analysis	<b>Mirjana Čižmešija</b> , <b>Nataša Kurnoga</b> , <b>Vlasta Bahovec</b> , Faculty of Economics and



Event / Session	Time	Room	Paper title	Author name and institution
			Approach	Business, University of Zagreb, Croatia
			C5-3. Baltic Dry Index and Performance Excellence in The Crisis Environment	<b>Elza Jurun, Nada Ratković</b> , Faculty of Economics, University of Split, Croatia <b>Franjo Moro</b> , Moro & Moro j.d.o.o., Croatia
			C5-4. System Dynamics Modelling and Simulation of The Intellectual Capital Influence on The Economy Growth in The Republic of Croatia	<b>Ivona Milić Beran</b> , Maritime Department, University of Dubrovnik, Croatia
			C5-5. How (I)Rrational Are We? Case of Croatian Inflation	<b>Nataša Erjavec, Ivana Lolić, Petar Sorić</b> , Faculty of Economics & Business Zagreb, University of Zagreb, Croatia
<p>Session LN3 - Special Section in Honor of Luka Neralic Chair: <b>Tunjo Perić</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>9:20-10:50</b></p>	<p><b>Room 1 (ground floor)</b></p>	LN3-1. Measuring The Efficiency of Macedonian Banks: A Non-Parametric Approach	<b>Violeta Cvetkoska, Elena Naumovska</b> , Faculty of Economics, Ss. Cyril and Methodius University in Skopje, Macedonia
			LN3-2. The Model of Firm's Innovation Orientation - Case of Slovenia	<b>Majda Bastič, Igor Vrečko</b> , Slovenia Faculty of Business and Economics, University of Maribor
			LN3-3. Performance Evaluation of Central European Firms	<b>Petr Fiala, Josef Jablonsky</b> , Department of Econometrics, University of Economics Prague, Czech Republic
			LN3-4. Assessing the Quality of Academic Staff Using Multiple-Criteria Decision Making	<b>Karlo Kotarac, Zrinka Lukač</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			LN3-5. Equity Portfolio Optimization: A DEA Based Methodology Applied on Zagreb Stock Exchange	<b>Margareta Gardijan, Tihana Škrinjarić</b> , Faculty of Economics and Business – Zagreb, University of Zagreb, Croatia
<b>Coffee break</b>	<b>10:50-11:05</b>	<b>Room 3 (ground floor)</b>		
	<b>11:05-</b>			

Event / Session	Time	Room	Paper title	Author name and institution
<b>Parallel sessions A, B, C</b>	<b>12:35</b>			
<b>Session A6 – OR Theory and Application</b> Chair: <b>Zoran Tomljanović</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>11:05-12:35</b>	<b>Room 12 (2nd floor)</b>	A6-1. An Optimal Pair of Members of Forming Relations to A Liaison With Long Communication Lengths in The Same Level of An Organization Structure	<b>Kiyoshi Sawada</b> , Department of Policy Studies, University of Marketing and Distribution Sciences, Japan
			A6-2. Approximating The Solution of The Two-Part Tariff Problem	<b>Ilko Vrankić, Mira Krpan, Zrinka Lukač</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			A6-3. Optimisation of Workshop Layout in A Furniture Development Company	<b>Tadej Kanduč, Blaž Rodič</b> , Faculty of Information Studies in Novo mesto, Slovenia
			A6-4. Roman Domination Number on Cardinal Product of Paths and Cycles	<b>Antoaneta Klobučar</b> , Faculty of Economics in Osijek, University of Josip Juraj Strossmayer in Osijek, Croatia <b>Ivona Puljić</b> , Ernestinovo, Croatia
			A6-5. An Efficient Parallel Implementations of Approximation Algorithms for Guarding 1.5D Terrains	<b>Goran Martinović</b> , Faculty of Electrical Engineering, University of Osijek, Croatia <b>Domagoj Matijević, Domagoj Ševerdija</b> , Department of Mathematics, University of Osijek, Croatia
<b>Session B6 – Machine Learning, Data Mining and Analytics</b> Chair: <b>Marijana Zekić-Sušac</b>  Time for each presentation: 15 minutes presentation + 3 minutes for discussion	<b>11:05-12:35</b>	<b>Room 13 (2nd floor)</b>	B6-1. Decision Tree Learning for Turning Points Detection in Business Process Orientation: Case of Croatia	<b>Ljubica Milanović Glavan, Vesna Bosilj Vukšić, Nikola Vlahović</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			B6-2. Predicting Students' Course Satisfaction from Log Data in Virtual Learning Environment – Neural Networks and Classification Tree Model	<b>Ivana Đurđević Babić</b> , Faculty of Teacher Education, University of J. J. Strossmayer in Osijek, Croatia
			B6-3. Web Analytics Tools and Web Metrics Tools: An Overview and	<b>Ivan Bekavac, Daniela Garbin Praničević</b> , Faculty of Economics,

Event / Session	Time	Room	Paper title	Author name and institution
			The Tool Comparative Analysis	University of Split, Croatia
			B6-4. Cluster Analysis in Retail Segmentation for Credit Scoring	<b>Sanja Scitovski</b> , University of J.J. Strossmayer in Osijek, Croatia <b>Nataša Šarlija</b> , Faculty of Economics, University of J.J. Strossmayer in Osijek, Croatia
			B6-5. Discovering Patterns in Market Basket by Hierarchical Association Rules	<b>Marijana Zekić-Sušac</b> , <b>Adela Has</b> , Faculty of Economics, University of J.J. Strossmayer in Osijek, Croatia
<p>Session C6 – Statistics and Econometrics Chair: <b>Josip Arnerić</b></p> <p>Time for each presentation: 15 minutes presentation + 3 minutes for discussion</p>	<p><b>11:05-12:35</b></p>	<p><b>Room 14 (2nd floor)</b></p>	C6-1. An Application of Interactive Multiobjective Dynamic Programming in Project Portfolio Selection	<b>Maciej Nowak</b> , <b>Tadeusz Trzaskalik</b> , Department of Operations Research, University of Economics in Katowice, Poland
			C6-2. Measuring Real Exchange Rate Misalignment in Croatia: Cointegration Approach	<b>Irena Palić</b> , <b>Ksenija Dumičić</b> , <b>Petra Šprajac</b> , Faculty of Economics and Business, University of Zagreb, Croatia
			C6-3. Application and Development of Human Resource Information System and Electronic Recruitment in Croatian Companies	<b>Snježana Pivac</b> , <b>Ivana Tadić</b> , <b>Branka Marasović</b> , Faculty of Economics, University of Split, Croatia
			C6-4. A VECM Approach to Detangling Growth, Export, Import and FDI Knot in Selected CEE Countries	<b>Saša Žiković</b> , <b>Ivana Tomas Žiković</b> , <b>Maja Grdinić</b> , Faculty of Economics, University of Rijeka, Croatia
			C6-5. GARCH Based Artificial Neural Networks in Forecasting Conditional Variance of Stock Returns	<b>Josip Arnerić</b> , Faculty of Economics and Business Zagreb, University of Zagreb, Croatia <b>Tea Poklepović</b> , <b>Zdravka Aljinović</b> , Faculty of Economics, University of Split, Croatia
<b>Lunch break</b>	<b>12:35-14:00</b>			
<b>Plenary Lecture 5</b>	<b>14:00-</b>	<b>Room 1</b>	<b>From Static to</b>	<b>Prof. Amir Nakib</b> ,

Event / Session	Time	Room	Paper title	Author name and institution
<b>Prof. Amir Nakib</b> , Université Paris Est Créteil, France  Chair: <b>Kristina Šorić</b>	<b>14:45</b>	<b>(ground floor)</b>	<b>Dynamic Metaheuristics: Design and Applications</b>	Faculty of Sciences, Université Paris Est Créteil, France
Teaching Effectiveness Colloquium (TEC) Croatia Workshop – part 3	<b>15:00- 16:30</b>	<b>Room 1 (ground floor)</b>	<b>Engaging and Re- Engaging Students with Active Learning</b>	<b>James J. Cochran</b> , Department of Information Systems, Statistics, and Management Science, University of Alabama, Tuscaloosa, USA
<b>Coffee break</b>	<b>16:30- 16:45</b>	<b>Room 3 (ground floor)</b>		
<b>Closing session and award giving</b>	<b>16:45- 17:30</b>	<b>Room 1 (ground floor)</b>		
<b>CRORS (HDOI) Annual meeting</b>	<b>17:30- 18:30</b>	<b>Room 1 (ground floor)</b>		We invite all CRORS (HDOI) members to attend this meeting

#### IMPORTANT NOTICES

- Contributed authors have 15 minutes to present their paper and 3 minutes for discussion, while plenary speakers have 40 minutes to present their paper and 5 minutes for discussion.
- Registration desk will be on the ground floor at the hallway of the Faculty of Economics, open each day of the conference from 08:00 to 18:00.
- Room 1 is located on the ground floor. Rooms 12-14 are located on the 2<sup>nd</sup> floor with an elevator access. Every room is equipped with a personal computer and a projector to support presentations using Power Point, Word and PDF files.
- All participants will receive a certificate of participation at the KOI 2014. Participants of the TEC Croatia 2014 Workshop (who attend all three parts of the workshop) will receive a certificate of participation at the workshop.