

Datum: 24. 2. 2016

## Zadeva: **Poročilo SDI-SOR o SOR'15**

Sekcija za operacijske raziskave Slovenskega društva INFORMATIKA (Litostrojska cesta 54, SI 1000 Ljubljana, ki ji predseduje prof. dr. Lidija Zadnik Stirn, je v dneh od 23. do 25. septembra 2015 organizirala v hotelu Astoria na Bledu 13. mednarodni simpozij iz operacijskih raziskav (The 13<sup>th</sup> International Symposium on Operational Research – SOR'15).

Lokalni soorganizator simpozija je bila Fakulteta za organizacijske študije, Univerze v Mariboru (UM, FOV), Kidričeva cesta 55a, Kranj.

SOR'15 je bil strokovno brežhibno organiziran po zaslugi **Organizacijskega odbora SOR'15:**

- S. Drobne, UL, Fakulteta za gradbeništvo in geodezijo, Ljubljana, Slovenija (predsednik)
- P. Gorjanc, UM, Fakulteta za organizacijske vede, Kranj, Slovenija (podpredsednica)
- M. Bogataj, MEDIFAS, Šempeter pri Gorici, Slovenija
- M. Kljajič Borštnar, UM, Fakulteta za organizacijske vede, Kranj, Slovenija
- J. Povh, Fakulteta za informacijske študije, Novo mesto, Slovenija
- L. Zadnik Stirn, UL, Biotehniška fakulteta, Ljubljana, Slovenija
- J. Žerovnik, UL, Fakulteta za strojništvo, Ljubljana, Slovenija

Za kakovostno raven vabljenih prispevkov in recenziranih referatov nosi odgovornost **Programski odbor SOR'15:**

- L. Zadnik Stirn, UL, Biotehniška fakulteta, Ljubljana, Slovenija (predsednica)
- M. Kljajič Borštnar, UM, Fakulteta za organizacijske vede, Kranj, Slovenija (podpredsednica)
- J. Žerovnik, UL, Fakulteta za strojništvo, Ljubljana, Slovenija (podpredsednik)
- Z. Babić, University of Split, Faculty of Economics, Split, Hrvaška
- M. Bastič, UM, Ekonomsko-poslovna fakulteta, Maribor, Slovenija
- M. Bogataj, MEDIFAS, Šempeter pri Gorici, Slovenija
- M. Bohanec, Inštitut Jožef Stefan, Ljubljana, Slovenija
- K. Cechlarova, P. J. Šafarik University, Faculty of Science, Košice, Slovaška
- T. Csendes, University of Szeged, Department of Applied Informatics, Szeged, Madžarska
- S. Drobne, UL, Fakulteta za gradbeništvo in geodezijo, Ljubljana, Slovenija
- K. Dumičić, University of Zagreb, Faculty of Economics and Business, Zagreb, Hrvaška
- M. Ferjan, UM, Fakulteta za organizacijske vede, Kranj, Slovenija
- W. Gutjahr, University of Vienna, Department of Statistics and Decision Support Systems, Vienna, Avstrija
- J. Jablonsky, University of Economics, Faculty of Informatics and Statistics, Prague, Češka
- D. Jukić, University of Osijek, Department of Mathematics, Osijek, Hrvaška
- S. Klavžar, UL, Fakulteta za matematiko in fiziko, Ljubljana, Slovenija
- D. Kofjač, UM, Fakulteta za organizacijske vede, Kranj, Slovenija

- J. Kušar, UL, Fakulteta za strojništvo, Ljubljana, Slovenija
- A. Lisec, UL, Fakulteta za gradbeništvo in geodezijo, Ljubljana, Slovenija
- Z. Lukač, University of Zagreb, Faculty of Economics and Business, Zagreb, Hrvaška
- L. Neralić, Faculty of Economics, Zagreb, Hrvaška
- M. Pejić Bach, University of Zagreb, Faculty of Economics and Business, Zagreb, Hrvaška
- M. Petitjean, University Paris 7, INSERM, Paris, Francija
- U. Pferschy, University of Graz, Department of Statistics and Operations Research, Graz, Austria
- J. Povh, Fakulteta za informacijske študije, Novo mesto, Slovenija
- V. Rajkovič, UM, Fakulteta za organizacijske vede, Kranj, Slovenija
- M. S. Rauner, University of Vienna, Department of Innovation and Technology Management, Vienna, Austrija
- R. Sotirov, Department of Econometrics and Operations Research, Tilburg University, Nizozemska
- K. Šorić, University of Zagreb, Faculty of Economics & Business, Zagreb, Hrvaška
- D. Škulj, UL, Fakulteta za družbene vede, Ljubljana, Slovenija
- P. Šparl, UM, Fakulteta za organizacijske vede, Kranj, Slovenija
- T. Trzaskalik, University of Economics, Department of Operational Research Katowice, Poljska
- G. W. Weber, Middle East Technical University, Institute of Applied Mathematics, Ankara, Turčija
- M. Zekić Sušac, University of Osijek, Faculty of Economics, Hrvaška

Simpozija se je udeležilo 119 strokovnjakov s področja operacijskih raziskav z univerz, inštitutov, podjetij in javne uprave in 4 spremljevalne osebe. Izmed njih je bilo 90 tujih (iz 20 držav) in 29 domačih.

Udeleženci so predstavili 6 vabljenih predavanj in 93 recenziranih referatov, ki jih je napisalo 191 avtorjev in soavtorjev. Posebej je treba omeniti 5 vabljenih predavateljev iz tujine in 1 iz Slovenije in častne govornike na otvoritveni slovesnosti, med katerimi gre posebno mesto predsednikom oziroma *predstavnikom društev za operacijske raziskave naslednjih držav*.

**Častni govorniki** so bili:

- prof. dr. Lidija Zadnik Stirn, predsednica Sekcije za operacijske raziskave, Slovensko društvo Informatika;
- prof. dr. Marjan Ferjan, dekan Fakultete za organizacijske vede, Univerza v Mariboru;
- mag. Urban Krajcar, generalni direktor Direktorata za znanost, Ministrstvo za izobraževanje, znanost in šport;
- prof. dr. József Györkös, direktor Javne agencije za raziskovalno dejavnost Republike Slovenije;
- dr. Sarah Fores in prof. dr. Gerhard Wilhelm Weber, predstavnika EURO (The Association of European Operational Research Societies);
- g. Niko Schlamberger, predsednik Slovenskega društva Informatika;
- prof. dr. Marijana Zekić-Sušac, predsednica Hrvaškega društva za operacijske raziskave.

**Vabljeni predavatelji** (plenarna predavanja) so bili:

- prof. dr. Aharon Ben-Tal, William Davidson Faculty of Industrial Engineering and Management, Technion - Israel Institute of Technology, Haifa, Israel, naslov predavanja: Robust Solutions of Uncertain Optimization Problems under Ambiguous Stochastic Data;
- prof. dr. Sergio Cabello, Univerza v Ljubljani, Fakulteta za matematiko in fiziko, Ljubljana, Slovenija, naslov predavanja: Two Applications of Geometric Optimization;
- dr. Stefano Cozzini, Centro DEMOCRITOS, Istituto Officina dei Materiali CNR-IOM, Trst, Italija, naslov predavanja: HPC as a Key-Enabling Technology;
- prof. dr. Nebojša Gvozdenović, University of Novi Sad, Faculty of Economics, Subotica, Srbija, naslov predavanja: OR Techniques in Real World Vehicle Routing;
- prof. dr. Gerhard Wilhelm Weber, Middle East Technical University, Institute of Applied Mathematics, Ankara, Turčija, naslov predavanja: A New Contribution to Operational Research: Optimal Control of Stochastic Hybrid Systems with Jumps - with Applications in Finance, Economics, Engineering and Biosciences;
- prof. dr. Ou Tang, Linköping University, Department of Management and Engineering, Linköping, Švedska, naslov predavanja: Remanufacturing and Core Acquisition.

Na SOR'15 smo organizirali **štiri posebne sekcije**; in sicer:

- Qualitative MCDM – so-organizatorji so bili Inštitut Jožef Štefan (Marko Bohanec), UM, Fakulteta za organizacijske vede (Vladislav Rajkovič in Mirjana Kljajić Borštnar) in SDI-SOR;
- Inventory Research – so-organizatorja sta bila Mediteranski inštitut za napredne študije (MEDIFAS, Marija Bogataj) in SDI-SOR;
- Metaheuristic Optimization – so-organizatorja sta bila Inštitut Jožef Štefan (Bogdan Filipič in Jurij Šilec) in SDI-SOR;
- Big Data – so-organizatorja sta bila Fakulteta za informacijske študije iz Novega mesta (Janez Povh) in SDI-SOR.

Proceedings of the 13<sup>th</sup> International Symposium on Operational Research, ki so ga uredil prof. dr. Lidija Zadnik Stirn, prof. dr. Janez Žerovnik, prof. dr. Mirjana Kljajić Borštnar in mag. Samo Drobne bo *eferiran* v: ISI (Index to Scientific and Technical Proceedings on CD-ROM and ISI/ISTP&B online database), Current Mathematical Publications, Mathematical Review, MathSci, Zentralblatt für Mathematics, Mathematics Abstracts, MATH on STN International CompactMath, INSPEC, Journal of Economic Literature.

Referati v zborniku del so razdeljeni v štirinajst poglavij (številka v oklepaju pomeni število prispevkov v sekciji): Plenary Lectures (6), Qualitative Multiple Criteria Decision Making (6 papers), Inventory Research (7), Metaheuristic Optimization (7), Big Data (4), Mathematical Programming and Optimization (7), Graphs and their Applications (5), Multiple Criteria Decision Making (5), Econometric Models and Statistics (10), Production (7), Finance and Investments (7), Location and Transport (7), Environment and Human Resources (9), OR Perspectives (6).

Vsebina in struktura prispevkov je bila tokrat nekoliko usmerjena v korist problemskim sklopom, čeprav je bilo tudi veliko zelo kakovostnih metodoloških prispevkov. Opazno je, da se operacijske raziskave vse bolj vključujejo v neposredne gospodarske probleme; navkljub velikemu številu udeležencev, ki so običajno avtorji, zlasti teoretičnih prispevkov, z univerz in raziskovalnih inštitutov. Nadalje je potrebno poudariti, da je bilo med avtorji veliko predstavnikov mlajše generacije, kar pomeni, da imajo operacijske raziskave tudi, kar se tiče kadrov, svetlo prihodnost.

Kot v preteklih letih (SOR'05, SOR'07, SOR'09, SOR'11 in SOR'13), smo žal tudi ob tem dogodku opazili, da je bila kljub pravočasnemu in ustreznemu informiranju občutna premajhna odzivnost uporabnikov OR-raziskovanja; pri tem mislimo tako zastopnike javnih sistemov kot na zastopnike industrije. To so predvsem energetske, okoljevarstvene, elektroenergetske, gradbeniške, transportne, vojaške strokovnjaki, med drugimi so to strokovnjaki iz managementa industrijskih podjetij in proizvodnje. To so skratka vsi tisti, ki bi pri svojem delu morali intenzivno uporabljati metode OR. V primeru, da bi bilo srečanje tako izpopolnjeno, k čemur bienalni simpoziji iz OR težijo, bi lahko prišlo že v okviru simpozija do začetka reševanja problemov, ki se v Sloveniji v okviru OR s praktičnega stališča zdijo kritični. To so predvsem identifikacija problemov in identifikacija ljudi ter skupin, ki se tako na strani uporabnikov kot na strani izvajalcev lahko soočijo z njimi. V takšnem primeru bi lahko prišlo do zametka primernih delovnih skupin. Smatramo, da bi se v bodoče moralo Ministrstvo za gospodarstvo bolj aktivno vključiti v delo simpozija.

Na koncu lahko ugotovimo, da je SOR'15, ki je tokrat obeležil že 13. izvedbo, presegel naša pričakovanja tako v strokovnem kot tudi moralnem pogledu. Velika udeležba tujih strokovnjakov je potrdila zaupanje v naše strokovne sile, obenem pa nudila domačim strokovnjakom priložnost, da se seznanijo z dosežki, ki razvitemu svetu pomenijo generator njihove diferencialne rente.

SOR'15 je finančno podprl tudi EURO (The Association of European Operational Research Societies).

### **Seznam referatov SOR'15**

Podroben seznam referatov po dnevih je razviden iz priloženega delovnega programa SOR'15. V nadaljevanju podajamo seznam referatov po sekcijah (iz zbornika del SOR'15):

#### ***Plenary Lectures***

*Aharon Ben-Tal*

Robust Solutions of Uncertain Optimization Problems under Ambiguous Stochastic Data

*Sergio Cabello*

Two Applications of Geometric Optimization

*Stefano Cozzini*

HPC as a Key-Enabling Technology

*Nebojša Gvozdrenović*

OR Techniques in Real World Vehicle Routing

*Gerhard Wilhelm Weber, Emel Savku, Diogo Pinheiro and Nuno Azevedo*

A New Contribution to Operational Research: Optimal Control of Stochastic Hybrid Systems with Jumps - with Applications in Finance, Economics, Engineering and Biosciences

*Shuoguo Wei and Ou Tang*

Remanufacturing and Core Acquisition

#### ***Special Session 1: Qualitative Multiple Criteria Decision Making***

*Marko Bohanec, Nejc Trdin and Branko Kontić*

A Qualitative Multi-Criteria Model for the Evaluation of Electric Energy Production Technologies in Slovenia

*Marko Debeljak, Sašo Džeroski, Vladimir Kuzmanovski, Jonathan Marks-Perreau, Aneta Trajanov and Benoit Real*

Decision Support Modelling for Environmentally Safe Application of Pesticides Used in Agriculture

*Mirjana Kljajić Borštnar, Tomi Ilijaš and Andreja Pucihar*  
Assessment of Cloud High Performance Computing Potential for SMEs

*Matej Mihelčič and Marko Bohanec*  
Empirical Comparison of three Methods for Approximating DEX Utility Functions

*Uroš Rajkovič and Vladislav Rajkovič*  
Managing Different Interests in Group Decision Making

*Črtomir Rozman, Karmen Pažek, Viljem Pavlovič, Marko Bohanec and Martin Pavlovič*  
Application of Multi Criteria DEX Model in HOP Breeding

### ***Special Session 2: Inventory Research***

*David Bogataj and Marija Bogataj*  
Floating Points of a Cold Supply Chain in an Environment of the Changing Economic Growth

*David Bogataj, Marija Bogataj, Damjana Drobne, Lorenzo Ros-McDonnell, Rebeka Rudolf and Domen Hudoklin*  
Investments in Smart Nano-Control Systems in Cold Supply Chains

*Robert W Grubbström*  
Some Aspects on the Distribution of the Net Present Value of a Stochastic Cash Flow Generated by a Compound Renewal Process

*Marko Jakšič*  
Near-Optimality of Myopic Policy for the Dual Sourcing Inventory Problem with Stochastic Capacitated Supplier

*Athanassios Nikolakopoulos and Ioannis Ganas*  
Inventory Routing and Control Models for the Distribution of Industrial Gases: A Multiperiod Deterministic and a Dynamical Predictive Approach

*Erica Pastore, Arianna Alfieri and Giulio Zotteri*  
Managing Different Demand Classes in a Spare Parts Inventory: a Practical Dynamic Allocation Strategy

*Lorenzo Ros-McDonnell and Maria Victoria de-la-Fuente Aragon*  
Modelling the Crude Oil Storage Management

### ***Special Session 3: Metaheuristic Optimization***

*Petra Drevenšek, Vida Vukašinić, Gregor Papa and Peter Korošec*  
Suitability of MASA Algorithm for Traveling Thief Problem

*Bogdan Filipič, Miha Mlakar and Tea Tušar*  
Multiobjective Optimization of Process Parameters in Steel Production

*Tadej Kanduč and Blaž Rodič*  
Factory Transport Costs Optimisation with a Novel Heuristic Algorithm

*Martin Pečar*  
Mobile Teams Problem

*Omer Faruk Yilmaz and Mehmet Bulent Durmusoglu*  
Hybrid Metaheuristic Algorithm for a New Scheduling Problem in Hybrid Manufacturing Environment

*Tulug Figen Yilmaz and Pinar Karagoz*  
Metaheuristic Based Automated Evaluation Method for Public Investment Projects

*Hugo Zupan, Niko Herakovič and Janez Žerovnik*  
A Hybrid Metaheuristic for Job-Shop Scheduling with Machine and Sequence-Dependent Setup Times

### ***Special Session 4: Big Data***

*Tanja Golobranc, Janja Jerebic, Jaka Kranjc, Borut Lužar, Luka Mali, Janez Povh and Drago Bokal*

On Applying Mathematical Models of Frequency Assignment to Wi-Fi Throughput Optimization

*Lukáš Rapant, Kateřina Slaninová and Jan Martinovič*

Traffic Incident Classification Using Bayesian Approach and Markov Chains

*Tomáš Režnar, Jan Martinovič, Kateřina Slaninová and Ekaterina Grakova*

Probabilistic Time-Dependent Vehicle Routing Problem

*Darko Zelenika, Janez Povh and Bernard Ženko*

Segmentation and Detection of Text in Document Images

### ***Session 1: Mathematical Programming and Optimization***

*Nejc Bat, Marko Kobal and Tomi Ilijaš*

Analysis of Use Cases Using HPC Services in the Cloud

*Milan Hladík*

Interval Convex Quadratic Programming Problems in a General Form

*Ludmila Jánošíková and Michal Haviar*

Hybrid Genetic Algorithms For the Capacitated p-Median Problem

*Latif Pourkarimi and Majid Soleimani-Damaneh*

On Robustness in Deterministic Linear Programming

*Maja Repnik and Drago Bokal*

A Basis for Taxonomy of Fuzzy Linear Programming Methods

*Galina Stoyanova Panayotova and Georgi Petrov Dimitrov*

Design of Web-Based Information System for Optimization of Portfolio

*Ilko Vrankić and Mira Krpan*

Duality in Monopoly

### ***Session 2: Graphs and Their Applications***

*Anna Azzi, Daria Battini, Alessandro Persona and Fabio Sgarbossa*

Logistics Cycle Indexes: Supply Network Analysis Takes a Step Further

*Ján Bendík*

Improving the Exact Algorithm for Solving the Public Service System Design in the Branching

*Michal Koháni*

Various Modifications of Greedy Algorithm for the Zone Partitioning Problem in Zone Tariff Systems

*Lukáš Melecký and Jana Hančlová*

Measuring Environmental Efficiency of European Regions: A Meta-Frontier Approach

*Aleksander Vesel*

Star Coloring of Fibonacci Cubes

### ***Session 3: Multiple Criteria Decision Making***

*Andrej Bregar*

Generalisation of Methods for Criteria Weight Derivation Based on Discordance Information

*Petra Grošelj and Lidija Zadnik Stirn*  
IGMDEA and TFNGMDEA Methods for Deriving Weights from Interval-Valued Comparison Matrices in AHP

*Slawomir Jarek*  
Approximating Random Indexes in the Analytical Hierarchy Process

*Nolberto Munier*  
A New Method Aiming at More Realistic Modelling and Dependable Results in Multicriteria Decision-Making

*Tunjo Perić and Zoran Babić*  
A New Linearization Approach for Solving Multi Objective Linear Fractional Programming Problems

#### **Session 4: Econometric Models and Statistics**

*Josip Arnerić, Ivana Lolić and Tea Poklepović*  
Algorithms for Maximum Likelihood Estimation of GARCH Models

*Ana Bilandžić, Marina Jeger and Nataša Šarlija*  
How to Improve Interpretability of the Logistic Regression Model

*Marko Bohanec, Mirjana Kljajić Borštnar and Marko Robnik-Šikonja*  
Feature Subset Selection for B2b Sales Forecasting

*Michaela Chocholatá and Andrea Furková*  
Income Convergence of the EU Regions: Spatial Econometric Approach

*Ksenija Dumičić, Berislav Žmuk and Anita Čeh Časni*  
Housing Affordability Levels in Selected European Countries: Hierarchical Clustering Approach

*Liljana Ferbar Tratar*  
The Performance of the Modified Holt-Winters Method: A Study of 1428 Monthly Series From M3-Competition

*Mirjana Pejić Bach and Jovana Zoroja*  
eGovernment Utilization in European Landscape: Hierarchical Cluster Analysis

*Snježana Pivac, Branka Marasović and Dujam Kovač*  
Economic and Demographic Determinants of Demand for Life Insurance

*Ervin Strmcnik and Liljana Ferbar Tratar*  
The Comparison of Holt-Winters Method and Multiple Regression Method: A Case of Monthly Heat Load Forecasting in the Company Energetika Ljubljana (Slovenia)

*Berislav Žmuk*  
The Impact of Intracluster Homogeneity on the Survey Costs: A Croatian Business Survey

#### **Session 5: Production**

*Dula Borozan and Luka Borozan*  
The Stationarity of Per Capita Electricity Consumption in Croatia Allowing for Structural Break(S)

*Helena Gaspars-Wieloch*  
Innovative Products and Newsvendor Problem Under Uncertainty Without Probabilities

*Gregory Gurevich, Baruch Keren and Yossi Hadad*  
The Robust Binomial Approach to the Machine Interference Problem with Different Groups of Identical Machines and Preemptive Priority

*Eva Jordan, Tomaž Berlec, Marko Starbek and Janez Kušar*  
A Lean Production Process - Today's Destination of Companies

*David Kaljun and Janez Žerovnik*

On Modelling of Spatial Light Distribution of LED with Attached Secondary Optics

*Michaela Staničková*

Evaluation of Performance Among EU28 NUTS 2 Regions – Context-Dependent Dea to Catch-Up/Down Effect

*Ozen Yavas and Ayca Altay*

A Hybrid Metaheuristic Approach for Production Scheduling

### **Session 6: Finance and Investments**

*Josip Arnerić, Mirjana Čižmešija and Petar Sorić*

Analysis of the Leverage Effect – Evidence from Ljubljana Stock Exchange

*Dajana Cvrlje, Vlasta Bahovec and Irena Palić*

The Analysis of the Financial Education Impact on Investment Behavior in Croatia: Ordered Logistic Regression Approach

*Anita Čeh Časni, Ksenija Dumičić and Irena Palić*

Flexibility of Real and Nominal Wages in Slovenia and Croatia: Var Approach

*Draženka Čizmić*

Higher-Level Indices in the Consumer Price Index

*Renata Kožul Blaževski and Jelena Vidović*

Causality between State Aid and GDP in European Countries

*Tihana Škrinjarić*

Time Varying CAPM Betas on Zagreb Stock Exchange

*Tihana Škrinjarić and Boško Šego*

Dynamic Modeling of Stock and Bond Return Correlation in Croatia

### **Session 7: Location and Transport**

*Peter Czimmermann and Štefan Peško*

A Polynomial Algorithm for a Particular Obnoxious Facility Location Problem

*Samo Drobne and Mitja Lakner*

Intramax and Constraints

*Eloy Hontoria and Darko Aleksovski*

Practical Logistic Applications of Small Scale Traveling Salesman Problem for Small and Medium Enterprises

*Marta Janackova and Alzbeta Szendreyova*

Time-Distance Versus Utility in the Public Service System Design

*Elza Jurun, Nada Ratković and Ivan Marijanović*

Croatian Maritime Freight Transport in the Environment of Schengen Area

*Marek Kvet and Jaroslav Janáček*

Semi-Fair Deployment of the Service Centers in a Transportation Network

*Polona Pavlovčič Prešeren, Bojan Stopar, Miran Kuhar and Oskar Sterle*

Fuzzy Logic Based Quality Assessment in Kinematic GNSS-Positioning

### **Session 8: Environment and Human Resources**

*Alenka Brezavšček and Alenka Baggia*

Analysis of Students' Flow in Higher Education Study Programmes Using Discrete Homogeneous Markov Chains



*Katarína Cechlárová, Pavlos Eirinakis, Tamás Fleiner, Dimitrios Magos,  
Ioannis Mourtos and Eva Oceláková*  
Approximation Algorithms for the Teachers Assignment Problem

*Nataša Erjavec and Saša Jakšić*  
Regional Unemployment in Croatia: Evidence from Dynamic Panel Model

*Jaroslav Janáček and Marek Kvet*  
Emergency System Design with Temporarily Failing Centers

*Alenka Kavkler and Jani Bekő*  
Reestimating the Purchasing Power Parity System for Emerging Asian Countries

*Tina Kocjančič, Jaka Žgajnar and Luka Juvančič*  
Incorporation of System Based Energy Indicators in Optimisation of Dairy Production in Slovenia

*Nataša Kurnoga and Mirjana Čižmešija*  
Has the Long-Term Recession Changed Managers' Assessments and Expectations in the Croatia's Retail Trade Sector?

*Andrea Majić, Adela Has and Marijana Zekić-Sušac*  
Discrete-Event Simulation Model of Customer Support Service in Telecommunications

*Slavko Šimundić and Danijel Barbarić*  
Computer Crimes in Modern Society

#### **Session 9: OR Perspectives**

*Frank Chen and Houmin Yan*  
Weather Risk Hedging - an Operations Perspective

*Jawad Elomari*  
Racing with Reset Utilizing Full Information

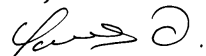
*Maciej Nowak and Tadeusz Trzaskalik*  
Optimal and Near-Optimal Strategies in Solving Bi-Criteria Discrete Stochastic Dynamic Programming Problem

*Andrei Orlov*  
On the Optimization Approach to Polymatrix Games

*Zoran Selinger and Marijana Zekić-Sušac*  
Using Data Mining Methods in Web Analytics

*Alexander S. Strekalovskiy*  
Nonconvex Optimization: Modern View

Tajnik SDI-SOR:



mag. Samo Drobne

Predsednica SDI-SOR:



prof. dr. Lidija Zadnik Stirn