

Datum: 21. 2. 2018

Zadeva: **Poročilo SDI-SOR o SOR'17**

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 27. do 29. septembra 2017 organizirala v hotelu Astoria na Bledu 14. mednarodni simpozij iz operacijskih raziskav (The 14<sup>th</sup> International Symposium on Operational Research – SOR'17).

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

SOR'17 je bil strokovno brezhibno organiziran po zaslugi šestih članov **Organizacijskega odbora SOR'17**:

- S. Drobne, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia, Chair
- P. Gorjanc, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia, Co-Chair
- N. Fileš, Slovenian Society Informatika, Ljubljana
- M. Kljajić Borštnar, University of Maribor, Faculty of Organizational Science, Kranj, Slovenia
- J. Povh, University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia
- L. Zadnik Stirn, University of Ljubljana, Biotechnical Faculty, Ljubljana, Slovenia

Za kakovostno raven vabljenih prispevkov in recenziranih referatov so poskrbeli člani **Programskega odbora SOR'17**:

- L. Zadnik Stirn, University of Ljubljana, Biotechnical Faculty, Ljubljana, Slovenia, Chair
- M. Kljajić Borštnar, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia, Co-Chair
- Z. Babić, University of Split, Faculty of Economics, Department for Quantitative Methods, Split, Croatia
- M. Bajec, University of Ljubljana, Faculty of Computer and Information Science, Ljubljana, Slovenia
- M. Bastič, University of Maribor, Faculty of Business and Economics, Maribor, Slovenia
- M. Bogataj, The Mediterranean Institute for Advanced Studies, Šempeter pri Gorici, Slovenia
- M. Bohanec, Jožef Stefan Institute, Department of Knowledge Technologies, Ljubljana, Slovenia
- D. Bokal, University of Maribor, Faculty of Natural Sciences and Mathematics, Maribor, Slovenia
- A. Brezavšek, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
- S. Cabello, University of Ljubljana, Faculty of Mathematics and Physics, Ljubljana, Slovenia
- K. Cechlarova, P. J. Šafarik University, Faculty of Science, Košice, Slovakia
- S. Cozzini, CNR/IOM and eXact-lab srl, Trieste, Italy
- T. Csendes, University of Szeged, Department of Applied Informatics, Szeged, Hungary
- V. Čančer, University of Maribor, Faculty of Business and Economics, Maribor, Slovenia
- S. Drobne, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia
- K. Dumičić, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- L. Ferbar Tratar, University of Ljubljana, Faculty of Economics, Ljubljana, Slovenia
- W. Gutjahr, University of Vienna, Department of Statistics and Decision Support Systems, Vienna, Austria
- N. Gvozdrenović, University of Novi Sad, Faculty of Economics, Subotica, Serbia

- J. Jablonsky, University of Economics, Faculty of Informatics and Statistics, Prague, Czech Republic
- S. Klavžar, University of Ljubljana, Faculty of Mathematics and Physics, Ljubljana, Slovenia
- D. Kofjač, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
- J. Kušar, University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia
- A. Lisec, University of Ljubljana, Faculty of Civil and Geodetic Engineering, Ljubljana, Slovenia
- Z. Lukač, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- L. Neralić, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- M. Pejić Bach, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia
- U. Pferschy, University of Graz, Department of Statistics and Operations Research, Graz, Austria
- J. Povh, University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia
- V. Rajkovič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia
- M. S. Rauner, University of Vienna, Dept. of Innovation and Technology Management, Vienna, Austria
- B. Rodič, Faculty of Information Studies, Novo mesto, Slovenia
- R. Sotirov, Department of Econometrics and Operations Research, Tilburg University, The Netherlands
- K. Šorić, Zagreb School of Economics and Management, Zagreb, Croatia
- D. Škulj, University of Ljubljana, Faculty of Social Sciences, Ljubljana, Slovenia
- O. Tang, Linköping University, Department of Management and Engineering, Linköping, Sweden
- T. Trzaskalik, University of Economics, Department of Operational Research Katowice, Poland
- G. W. Weber, Middle East Technical University, Institute of Applied Mathematics, Ankara, Turkey
- M. Zekić Sušac, University of Osijek, Faculty of Economics, Croatia
- J. Žerovnik, University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia

Simpozija se je udeležilo 97 strokovnjakov s področja operacijskih raziskav z univerz, inštitutov, podjetij in javne uprave in 7 spremljevalnih oseb. Izmed njih je bilo 75 tujih (iz 24 držav) in 29 domačih.

Udeleženci so predstavili 5 vabljenih predavanja in 97 recenziranih referatov, ki jih je napisalo 184 avtorjev in soavtorjev. Posebej je treba omeniti 4 vabljene predavatelje 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. Iztok Podbregar, dekan Fakultete za organizacijske vede, Univerza v Mariboru;
- dr. Sarah Fores, predstavnik 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:

- Dr. Serge Bogaerts, Managing Director of PRACE aisbl, PRACE, the Partnership for Advanced Computing in Europe, Brussels, Belgium, naslov predavanja: PRACE, the Research Infrastructure Supporting Science and Industry through Provision of High Performance Computing Resources;
- Prof. Dr. Ulrike Leopold-Wildburger, University of Graz, Austria, naslov predavanja: Operations Research and Behavioral Economics;
- Prof. Dr. Matjaž Perc, University of Maribor, Faculty of Natural Sciences and Mathematics, Maribor, Slovenia, naslov predavanja: Transitions towards Cooperation in Human Societies;
- Prof. Dr. Luk N. Van Wassenhove, INSEAD, Fontainebleau Cedex, France, naslov predavanja: Humanitarian Operations: Past Achievements, Future Challenges and Research Opportunities;
- Prof. Dr. Marijana Zekić-Sušac, University of Josip Juraj Strossmayer in Osijek, Faculty of Economics, Osijek, Croatia, naslov predavanja: Machine Learning in Energy Consumption Management.

Na SOR'17 smo organizirali **sedem posebnih sekcij**; in sicer:

- Advances in Modelling and Statistical Research of the Western Balkan Countries in the Times of Economic Crisis – so-organizatorji so bili University of Zagreb, Faculty of Economics and Business (Prof. Dr. Ksenija Dumičić), University of Tourism and Management in Skopje, Faculty of Economics (Assist. Prof. Dr. Blagica Novkovska) in SDI-SOR;
- High-Performance Computing and Big Data and General OR Topics – so-organizatorja sta bila University of Ljubljana, Faculty of Mechanical Engineering (Dr. Janez Povh) in SDI-SOR;
- Logistics – so-organizatorja sta bila University of Maribor, Faculty of Logistics (Assoc. Prof. Dr. Tomaž Kramberger) in SDI-SOR;
- MCDM – Software and Applications – so-organizatorji so bili Jožef Stefan Institute (Prof. Dr. Marko Bohanec, Scientific Councillor), University of Maribor, Faculty of Organisational Sciences (Assist. Prof. Dr. Mirjana Kljajić Borštnar, Prof. Dr. Vladislav Rajkovič, Professor Emeritus) in SDI-SOR.
- Metaheuristic Optimization – so-organizatorja sta bila Computer Systems Department, Jožef Stefan Institute (Dr. Vida Vukašinović, Dr. Jurij Šilc) in SDI-SOR.
- MRP and Related Systems Approach to Industrial Engineering and Services – so-organizatorji so bili University of Padua, Department of Management and Engineering (Prof. Dr. Daria Battini), CERRISK and MEDIFAS, Ljubljana (Prof. Dr. Marija Bogataj) in SDI-SOR.
- Systems Optimization and Control with Applications – so-organizatorja sta bila University of Maribor, Faculty of Organisational Sciences (Assist. Prof. Dr. Davorin Kofjač) in SDI-SOR.

(Posebne) sekcije na SOR'17 je vodilo **dvaindvajset priznanih domačih in tujih strokovnjakov**; in sicer:

- D. Battini, University of Padua, Department of Management and Engineering, Padua, Italy;
- M. Bogataj, CERRISK - Zavod INRISK, Ljubljana, Slovenia;
- M. Bohanec, Jožef Stefan Institute, Department of Knowledge Technologies, Ljubljana, Slovenia;
- D. Bokal, University of Maribor; Faculty of Natural Sciences and Mathematics, Maribor, Slovenia;
- V. Rajkovič, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia;
- V. Čančer, University of Maribor, Faculty of Economics and Business, Maribor, Slovenia;
- K. Dumičić, University of Zagreb, Faculty of Economics and Business, Zagreb, Croatia;
- R. Gumzej, University of Maribor, Faculty of Logistics, Celje, Slovenia;
- T. Illés, Budapest University of Technology and Economics, Budapest, Hungary;
- M. Kljajić Borštnar, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia;
- D. Kofjač, University of Maribor, Faculty of Organizational Sciences, Kranj, Slovenia;
- Z. Lukač, University of Zagreb, Department of Mathematics, Zagreb, Croatia;
- B. Novkovska, University of Tourism and Management, Faculty of Economics, Skopje, Republic of Macedonia;
- M. Pejić-Bach, University of Zagreb, Faculty Economics and Business, Zagreb, Croatia;
- S. Pivac, University of Split, Faculty of Economics, Split, Croatia;
- J. Povh, University of Ljubljana, Faculty of Mechanical Engineering, Institute of Mathematics, Physics and Mechanics, Ljubljana, Slovenia;
- J. Šilc, Jožef Stefan Institute, Computer Systems Department, Ljubljana, Slovenia;
- V. Vukašinović, Jožef Stefan Institute, Computer Systems Department, Ljubljana, Slovenia;
- L. Zadnik Stirn, University of Ljubljana, Biotechnical Faculty, Ljubljana, Slovenia;
- M. Zekić-Susac, University of Josip Juraj Strossmayer in Osijek, Faculty of Economics, Osijek, Croatia;
- J. Žerovnik, University of Ljubljana, Faculty of Mechanical Engineering, Ljubljana, Slovenia.

Proceedings of the 14<sup>th</sup> International Symposium on Operational Research, ki so ga uredil prof. dr. Lidija Zadnik Stirn, prof. dr. Mirjana Kljajić Borštnar, prof. dr. Janez Žerovnik in doc. dr. 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, Zentrallblatt für Mathematics, Mathematics Abstracts, MATH on STN International CompactMath, INSPEC, Journal of Economic Literature.

Referati v zborniku del so razdeljeni v šestnajst poglavij (številka v oklepaju pomeni število prispevkov v sekciji): Plenary Lectures (5); sedem posebnih sekcij: Advances in Modelling and Statistical Research of the Western Balkan Countries in the Times of Economic Crisis (8 papers), High-Performance Computing and Big Data and General OR Topics (8), Logistics (5), MCDM – Software and Applications (6), Metaheuristic Optimization (5), MRP and Related Systems Approach to Industrial Engineering and Services (5), Systems Optimization and Control with Applications (5); in osem sekcij: Econometric Models and Statistics (10), Environment and Human Resources (6), Finance and Investments (5), Location and Transport, Graphs and their Applications (6), Machine Learning (4), Mathematical Programming and Optimization (8), Multiple Criteria Decision Making (4), and OR Perspectives: Where we have been, where we can go (3).

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.

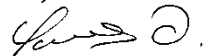
Kot v preteklih letih (SOR'05, SOR'07, SOR'09, SOR'11, SOR'13 in SOR'15), smo žal tudi ob tem dogodku opazili, da je bila kljub pravočasnemu in ustreznemu informiranju občutna premajhna odzivnost uporabnikov OR-raziskovanja; pri tem mislimo tako zastopnike javnih sistemov kot na zastopnike industrije. 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'17, ki je tokrat obeležil že 14. 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'17 je finančno podprl PRACE (Partnership for Advanced Computing in Europe).

Več o samem simpoziju na spletnih straneh <http://sor17.fov.uni-mb.si/>.

Tajnik SDI-SOR:



doc. dr. Samo Drobne

Predsednica SDI-SOR:



prof. dr. Lidija Zadnik Stirn