

The 16<sup>th</sup> International Symposium on Operational Research  
in Slovenia – SOR '21

September 20-21, 2021, Online  
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# SOR '21 programme

- 2021-09-15 -



Slovenian Society INFORMATIKA  
Section for Operational Research  
- organizer -

University of Maribor  
Faculty of Organizational Sciences  
- co-organizer -

University of Ljubljana  
Faculty of Mechanical Engineering  
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- sponsor -

| <b>Wednesday</b><br>September 22, 2021   | <b>Thursday</b><br>September 23, 2021   | <b>Friday</b><br>September 24, 2021   |
|--|---|---|
| 9.00 – 9.45<br>Opening ceremony<br>(Channel 1)   | 9.00 – 9.40<br><b>Plenary lecture (Channel 1):</b><br><b>(PL3) Jerneja Žganec Gros</b><br>Alpineon Ltd, Slovenia                | 9.00 – 9.55<br><b>Plenary lecture (Channel 1):</b><br><b>(PL5) Nikolina Ban</b><br><b>(The PRACE plenary lecture)</b><br>University of Innsbruck, Austria |
| 9.50 – 10.30<br><b>Plenary lecture (Channel 1):</b><br><b>(PL1) Panos Patrinos</b><br>KU Leuven, Belgium                           | 9.45 – 10.30<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(SS5) HPC&amp;BD + (SS4) GT&amp;A +</b><br><b>(SS7) IPIOR</b>    | 10.00 – 11.15<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(SS3) DSM&amp;CS + (SS9) L&amp;S +</b><br><b>(S6) MCDM</b>                                |
| 10.30 – 10.45<br>Break   | 10.30 – 10.45<br>Break  | 11.15 – 11.30<br>Break  |
| 10.45 – 12.15<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(S5) MP&amp;O +</b><br><b>+ (SS1) AoORiSC + (SS6) I&amp;S5.0</b>   | 10.45 – 12.15<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(SS2) CMO + (SS8) COVID-19 +</b><br><b>(S4) L&amp;TG&amp;tA</b> | 11.30 – 12.45<br>Parallel sessions (Channels 1, 2<br>and 3): <b>(SS3) DSM&amp;CS + (SS9) L&amp;S</b><br><b>+ (S6) MCDM</b>                                |
| 12.15 – 13.15<br>Break   | 12.15 – 13.15<br>Break  | 12.55 – 13.20<br>Closing ceremony<br>(Channel 1)  |
| 13.15 – 13.55<br><b>Plenary lecture (Channel 1):</b><br><b>(PL2) Vedran Kojić</b><br>University of Zagreb, Croatia                 | 13.15 – 14.45<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(SS2) CMO + (SS8) COVID-19 +</b><br><b>(S8) PAOR</b>            |   |
| 14.00 – 15.15<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(SS10) ORiAS&amp;SI + (SS11)</b><br><b>ORiAE&amp;FM + (S7) ToG</b> | 14.45 – 15.00<br>Break  |   |
| 15.15 – 15.30<br>Break   | 15.00 – 15.40<br><b>Plenary lecture (Channel 1):</b><br><b>(PL4) Suresh P. Sethi</b><br>University of Texas, USA                |   |
| 15.30 – 16.45<br>Parallel sessions (Channels 1, 2 and<br>3): <b>(S1) EM&amp;S + (S3) F&amp;I +</b><br><b>(S2) E&amp;SI</b>         | 15.45 – 16.00<br>Piano concert  |   |

Plenary lectures: 30 minutes for presentation plus 10 minutes for discussion.

Contributed papers: 14 minutes all together for presentation and for discussion.

# Wednesday

September 22, 2021

9.00 – 9.45 Opening ceremony (Channel 1)

9.50 – 10.30 **Plenary lecture** (Channel 1, Chair: Janez Žerovnik)  
 PL1 – **Panos Patrinos**: Algorithms for Large-Scale Structured Nonconvex Optimization

10.30 – 10.45 Break

10.45 – 12.15 Parallel sessions:

| <b>(S5)</b> Chair: Tunjo Perić<br><b>Mathematical Programming and Optimization</b> (Channel 1)  | <b>(SS1)</b> Chair: Maja Čukušić and Mario Jadrić<br><b>Application of Operational Research in Smart Cities</b> (Channel 2)   | <b>(SS6)</b> Chair: Drago Bokal and Andrej Košir<br><b>Industry &amp; Society 5.0: Optimization in Industrial and Human Environments</b> (Channel 3)   |
|---|---|--|
| <p>SS5.1 - Valentina Đurek, Nikola Kadoić and Dijana Oreški: Effective Decision Making in Local Government Using the Hybrid Approach Based on Multi-Criteria Decision-Making Methods and Machine Learning</p> <p>SS5.2 - Milan Hladík: Six Ways how to Define Robust Pareto Optimality under Double Interval Uncertainty</p> <p>SS5.3 - Tibor Illés: Sufficient Matrices and Linear Complementarity Problems</p> <p>SS5.4 - Mira Krpan: Monopsony in Labor Market: Short-Run Profit Maximization Model from Duality Perspective</p> <p>SS5.5 - Zrinka Lukač: Optimal Taxation of a Monopoly with Cobb-Douglas Production Function for Two Inputs as a Bilevel Programming Problem</p> <p>SS5.6 - Tunjo Perić, Zoran Babić and Josip Matejaš: A New Methodology to Solve Decentralized Multi-Level Multi-Objective Linear Fractional Programming Problem</p> | <p>SS1.1 - Aleš Groznik, Eva Jelerčič, Sarina Kaloh, Maša Klun and Anton Manfreda: Examining the Gap Between Smart City Definitions and Smart City Indexes: A Call Towards Unified Index</p> <p>SS1.2 - Ivan Kekez and Daniela Garbin Praničević: Investigating Singular Value Decomposition as a Tool for Data Management in Tourism</p> <p>SS1.3 - Ivan Kekez, Mario Jadrić and Maja Čukušić: Demonstration Potential of Simulation Modelling in the Urban Mobility Domain</p> <p>SS1.4 - Antonija Kvasina, Tea Mijač and Marko Hell: Developing System Dynamics Model for Waste Management in Tourism-Oriented Smart City</p> <p>SS1.5 - Tea Mijač, Ivana Ninčević Pašalić and Luka Tomat: Selection of IoT Platforms in Smart Cities: Multi-Criteria Decision Making</p> <p>SS1.6 - Polona Pavlovčič Prešeren: Group Method of Data Handling for Modeling GNSS Site-Specific Quality Parameters</p> | <p>SS6.1 - Tamara Čurlin, Ivan Miloloža and Helena Nikolić: Increasing Efficiency of Health Care Management with the Online Scheduling for Medical Services: Impact of Age and Occupation</p> <p>SS6.2 - Aleksandar Dojčinović, Martin Prelog, Maj Lopatič and Uroš Rajković: Smart House for Older and People with Disabilities</p> <p>SS6.3 - Ana Sousa, Cristina Rodrigues, Senhorinha Teixeira and Dominique Besson: Influence of National Culture in Supply Chain Internal Integration</p> <p>SS6.4 - Tena Žužek, Janez Kušar and Tomaž Berlec: Guidelines for Agile Concurrent Product Development in SMEs</p> <p>SS6.5 - Drago Bokal, Markus Chimani and Alen Vegi Kalamar: On the Didactic Value of Crossing Critical Graphs</p> <p>SS6.6 - Janja Jerebic, Špela Kajzer, Monika Vogrinec and Drago Bokal: Longitudinal Dynamics between Linearly Ordered Classes</p> |

12.15 – 13.15 Break

13.15 – 13.55 **Plenary lecture** (Channel 1, Chair: Zrinka Lukač)  
 PL2 - **Vedran Kojić**: Application of Basic Mathematical Inequalities to Selected Problems in Economics

14.00 – 15.15 Parallel sessions:

| <b>(SS10)</b> Chair: Marija Bogataj, David Bogataj and Samo Drobne<br><b>Operational Research in Ageing Studies and Social Innovations</b> (Channel 1) | <b>(SS11)</b> Chair: Črtomir Rozman and Karmen Pažek<br><b>Operations Research in Agricultural Economics and Farm Management</b> (Channel 2) | <b>(S7)</b> Chair: Helena Gaspars-Wieloch<br><b>Theory of Games</b> (Channel 3) |
|--|--|---|
| <p>SS10.1 - David Bogataj and Valerija Rogelj: The Social Value of Specialised Housing for Older Adults</p>  | <p>SS11.1 - Jure Brečko and Jaka Žgajnar: Farm Model and Risk Management Strategies on a Mixed Farm Type</p>                                 | <p>S7.1 - Jan Bok: Cooperative Interval Games and Selections Revisited</p>      |

## Wednesday

September 22, 2021

|   |  |  |
|---|--|--|
| <p>SS10.2 - Samo Drobne and Marija Bogataj: Older Adults Perspectives in Optimisation of Migration Flow</p> <p>SS10.3 - Lana Kordić and Josipa Višić: Efficiency of Croatian Nursing Homes - DEA Analysis</p> <p>SS10.4 - Marija Milavec Kapun, Vladislav Rajkovič, Olga Šušteršič, Rok Drnovšek and Uroš Rajkovič: Multi-Criteria Self-Care Decision Model of Patients with Chronic Diseases</p> <p>SS10.5 - Renata Možanić and David Bogataj: Forecasting the Homecare Utilization: Case for Varaždin County</p>  | <p>SS11.2 - Ana Novak and Luka Juvančič: Multi-Criteria Evaluation of Alternative Scenarios for Closing Loops of Agricultural and Forestry Biomass</p> <p>SS11.3 - Boris Prevolšek, Maja Žibert, Karmen Pažek, Aleksandar Maksimović, Adis Puška and Črtomir Rozman: Multi Criteria Assessment of Sustainable Development of Ethno-Villages in Bosnia and Herzegovina</p> <p>SS11.4 - Janja Rudolf and Andrej Udovč: Testing MCDM Model for Evaluating the Potential of Coordinated Agri-Environmental Approaches Among Farmers on Two Case Studies from Netherland</p> <p>SS11.5 - Maja Žibert, Boris Prevolšek, Andrej Škraba and Črtomir Rozman: Strategies for Structural Changes in Agricultural Holdings as a Farm Tourism Model Development</p> | <p>S7.2 - Helena Gaspars-Wieloch: From the Interactive Programming to a New Decision Rule for Uncertain One-Criterion Problems</p> <p>S7.3 - Jakub Mróz and Tomasz Wachowicz: The Dyadic Analysis of the Impact of Conflict-Handling Style on Negotiation Outcomes in Software Supported Negotiations</p> <p>S7.4 - Tamás Solymosi: Sensitivity of Fair Prices in Assignment Markets &lt;from SS2&gt;</p>  |
| 15.15 – 15.30 Break   |  |  |
| 15.30 – 16.45 Parallel sessions:  |  |  |
| <p><b>(S1) Chair: Ksenija Dumičić</b><br/> <b>Econometric Models and Statistics</b><br/>                     (Channel 1)</p>  | <p><b>(S3) Chair: Snježana Pivac</b><br/> <b>Finance and Investments</b><br/>                     (Channel 2)</p>  | <p><b>(S2) Chair: Lidija Zadnik Stirn</b><br/> <b>Environment and Social Issues</b><br/>                     (Channel 3)</p>   |
| <p>S1.1 - Darja Boršič and Lea Žižek: Determinants of Economic Development: An Application of Limited Dependent Variable Models</p> <p>S1.2 - Michaela Chocholatá and Andrea Furková: Educational Inequalities Across the EU Regions: Mixed GWR Approach</p> <p>S1.3 - Ksenija Dumičić and Ivana Cunjak Mataković: Approaches to Data Transformations and their Impact on the Skewness Statistic for Seriously Skewed Distributions: Selected Cryptocurrencies' Data Explored</p> <p>S1.4 - Elza Jurun, Nada Ratković and Lidija Bekavac: Strategy Europa 2020 and Economic Development from a National Point of View</p> <p>S1.5 - Kosovka Ognjenović: Gender Wage Inequality in the Labor Market of a Post-Socialist Economy</p> <p>S1.6 - Petar Sorić and Marija Logarušić: Tipping Points in the Croatian Political Sentiment: When, Why, and does the Economy have Anything to do with it?</p> | <p>S3.1 - Zdravka Aljinović, Branka Marasović and Tea Kalinić Miličević: An Evidence on Risk and Return of Cryptocurrencies</p> <p>S3.2 - Boris Cota, Nataša Erjavec and Saša Jakšić: Income Inequality and Current Account Imbalances in New EU Members</p> <p>S3.3 - Aleš Kresta and Garegin Minasjan: Analysts' Recommendations as the Predictions of Future Stock Returns at Prague Stock Exchange</p> <p>S3.4 - Blanka Škrabić Perić and Ana Rimac Smiljanić: Derivatives Markets Development and Country Political Risk</p> <p>S3.5 - Marija Vuković and Snježana Pivac: The Impact of Business Economics Students' Use of Heuristics on their Predispositions for Long-Term Investment Decisions</p>  | <p>S2.1 - Artur M. C. Brito da Cruz, Helena Sofia Rodrigues and M. Teresa T. Monteiro: Household Costs for Personal Protective Measures for Dengue Disease</p> <p>S2.2 - Marek Kvet and Jaroslav Janáček: Incrementing Heuristic for Non-Dominated Designs of Emergency Medical System</p> <p>S2.3 - Teodora Mishevskaja and Samo Drobne: Functional Areas in Higher Education: A Case Study for Slovenia</p> <p>S2.4 - Mario Pepur: Validation of the Fan Type Scale in Croatia</p> <p>S2.5 - Lidija Zadnik Stirn and Gregor Dolinar: MCDM with Imprecise Information: Economic, Ecological, Social and Participatory Insights on Natural Resource Management Scenarios</p> |

# Thursday

## September 23, 2021

9.00 – 9.40 **Plenary lecture** (Channel 1, Chair: Mirjana Kljajić Borštnar)  
 PL3 - **Jerneja Žganec Gros**: Speech Synthesis in Language Digitisation: The Slovenian Use Case

9.45 – 10.30 Parallel sessions:

| <b>(SS5) Chair: Janez Povh<br/>High-Performance Computing and<br/>Big Data</b> (Channel 1)  | <b>(SS4) Chair: Sandi Klavžar<br/>Graph Theory and Algorithms</b><br>(Channel 2)   | <b>(SS7) Chair: Anja Žnidaršič and<br/>Janja Jerebic<br/>International Projects in Operations<br/>Research</b> (Channel 3)  |
|---|--|---|
| <p>SS5.1 - Tomaž Čegovnik, Andrej Dobrovoljc, Janez Povh and Matic Rogar: Electricity Consumption Prediction Using Artificial Intelligence</p> <p>SS5.2 - Timotej Hrga and Janez Povh: On Using Hypermetric Inequalities in a Cutting-Plane Algorithm for Max-Cut</p> <p>SS5.3 - Andrej Kastrin, Rok Hribar, Gregor Papa and Janez Povh: Bibliographic Data Clustering Based on Symmetric Non-Negative Matrix Tri-Factorization</p> | <p>SS4.1 - Peter Czimmermann and Michal Lichner: Critical Edges in Weighted Center Problems</p> <p>SS4.2 - Boštjan Gabrovšek, Aljoša Peperko and Janez Žerovnik: 2-Rainbow Independent Domination Numbers of Some Graphs</p> | <p>SS7.1 - Alenka Tratnik, Anja Žnidaršič, Janja Jerebic, Uroš Rajkovič, Alenka Baggia, Dragana Gak, Tatjana Grbič, Nataša Duraković and Slavica Medić: Predictors of Email Communication Skills among Slovenian and Serbian Students</p> <p>SS7.2 - Anja Žnidaršič, Borut Werber, Alenka Baggia, Maryna Vovk, Vanja Bevanda and Lukasz Zakonnik: The Intention to Use Microchip Implants: Model Extensions after the Pandemics</p> <p>SS7.3 - Frane Banić and Irena Palić: The Assessment of Twin Divergence in Croatia: The Impact of Trade Deficit on the Budget Deficit &lt;from S3&gt;</p> |

10.30 – 10.45 Break

10.45 – 12.15 Parallel sessions:

| <b>(SS2) Chair: Tibor Illés and Marianna<br/>Eisenberg-Nagy<br/>Computational Mathematical<br/>Optimization</b> (Channel 1)  | <b>(SS8) Chair: Veljko Jeremić<br/>Lessons Learned from the COVID-19<br/>Pandemic: Applications of Statistical<br/>and OR Methods</b> (Channel 2)   | <b>(S4) Chair: Samo Drobne<br/>Location and Transport, Graphs and<br/>their Applications</b> (Channel 3)  |
|--|---|---|
| <p>SS2.1 - Kolos Cs. Ágoston and Marianna E.-Nagy: Mixed Integer Linear Programming Formulation for K-means Cluster Problem</p> <p>SS2.2 - Kolos Csaba Ágoston and Márton Gyetvai: Comparison of an Iterative Heuristic and Joint Optimization in the Optimization of Bonus-Malus Systems</p> <p>SS2.3 - Márton Benedek, Péter Biró, Walter Kern and Daniel Paulusma: Computing International Kidney Exchange Schemes</p> <p>SS2.4 - Kristóf Druzsín, Péter Biró, Rita Fleiner and Xenia Klimentova: Simulations for Measuring Efficiency of</p> | <p>SS8.1 - Matúš Bilka and Zdravka Aljinović: The Role of Cryptocurrencies in the Portfolio Optimization During the COVID-19 Pandemic</p> <p>SS8.2 - Alenka Brezavšček, Janja Jerebic, Gregor Rus and Anja Žnidaršič: In-Class and Online Teaching of Mathematics – A Comparison of Students' Outcomes at the Midterm Exams</p> <p>SS8.3 - L.N. Bulder and N.M. van Dijk: On the COVID effect for OT-ICU systems</p> <p>SS8.4 - Ivana Lazarevic, Milica Maricic and Marina Ignjatovic: Segmenting Centennials Based on their Consumer Behaviour During COVID-19</p> | <p>S4.1 - Szilvia Erdős and Bence Kóvári: Algorithms Based on Analytic Learning Neural Networks for Final Exam Scheduling</p> <p>S4.2 - Elif Garajová and Miroslav Rada: Exact Method for the Worst Optimal Value of an Interval Transportation Problem</p> <p>S4.3 - László Hajdu and Miklós Krész: The Influence Monitoring Problem</p> <p>S4.4 - Tea Šestanović: Bitcoin Price Direction Forecasting Using Neural Networks</p> <p>S4.5 - Samo Drobne, Alberto Garre and Eloy Hontoria: Analysis of the Relationships between Slovenian</p> |

## Thursday

September 23, 2021

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|--|---|---|
| <p>International Kidney Exchange Programmes</p> <p>SS2.5 - Dávid Cserecsik: Heuristics for Combinatorial Auction-Based Channel Allocation Approaches in Multi-Connective Wireless Environments</p> <p>SS2.6 - Marianna E.-Nagy and Anita Varga: A Family of Long-Step Interior Point Algorithms for Linear Programming</p>   | <p>Pandemics: The Case of Confectionery Industry</p> <p>SS8.5 - Jelena Minović: The Response of Market Volatility to the COVID-19 Pandemic</p>  | <p>Functional Regions Identified in the Network</p>   |
| <p>12.15 – 13.15 Break</p>   |   |   |
| <p>13.15 – 14.45 Parallel sessions:</p>  |   |   |
| <p><b>(SS2)</b> Chair: Tibor Illés and Marianna Eisenberg-Nagy<br/><b>Computational Mathematical Optimization</b> (Channel 1)</p>  | <p><b>(SS8)</b> Chair: Veljko Jeremić<br/><b>Lessons Learned from the COVID-19 Pandemic: Applications of Statistical and OR Methods</b> (Channel 2)</p>   | <p><b>(S8)</b> Chair: Vesna Čančer<br/><b>Problems Approaching OR</b> (Channel 3)</p>   |
| <p>SS2.7 - Marianna E.-Nagy and Anita Varga: A Numerical Comparison of Long-Step Interior Point Algorithms for Linear Optimization</p> <p>SS2.8 - László Á. Kóczy and Balázs R. Sziklai: Power and Preferences</p> <p>SS2.9 - Petra Renáta Rigó, Tibor Illés and Zsolt Darvay: Algebraic Equivalent Transformation Technique in Case of Sufficient Linear Complementarity Problems</p> <p>SS2.10 - Dávid Tollner and Tibor Illés: Bounded Pooling Problem</p> <p>SS2.11 - Roland Török, Tibor Illés and Petra Renáta Rigó: Implementation of Primal-Dual Interior-Point Algorithm for Solving Sufficient Linear Complementarity Problems</p> <p>SS2.12 - Ajda Zavrtnik Drglin, Romi Koželj, Martin Pečar and Gregor Mrak: Making the Next Step in Finding the Best Route</p> | <p>SS8.6 - Gordana Savić, Kristina Dobrilović, Bisera Andrić Gušavac, Minja Marinović and Milena Popović: Measuring Efficiency of Health Care System of OECD Member Countries During Pandemic COVID-19</p> <p>SS8.7 - Nikola Zornić, Nataša Bojković and Tanja Živojinović: Assessing the Impact of COVID-19 Lockdown on Air Pollutant Emissions in Cities: The Case of Europe's Cleanest and Most Polluted Countries</p> <p>SS8.8 - Berislav Žmuk: Does the COVID-19 Discriminate by Gender? Croatian and Slovenian Case</p> | <p>S8.1 - Nikola Kadoić, Dijana Oreški and Marija Lendl: Comparative Analysis of Decision Tree Methods from Two Scientific Fields</p> <p>S8.2 - Lorena Mihelač and Janez Povh: Computational Analysis of the Musical Diversity in 22 European Countries</p> <p>S8.3 - Dino Pavlic: Business Process Management and Customer Experience Management Convergence – A Literature Review</p> |
| <p>14.45 – 15.00 Break</p>   |   |   |
| <p>15.00 – 15.40 <b>Plenary lecture</b> (Channel 1, Chair: Marija Bogataj)<br/>PL4 - <b>Suresh P. Sethi</b>: Managing with Incomplete Inventory Information</p>  |   |   |
| <p>15.45 – 16.00 <b>Piano concert</b> (Channel 1)<br/>Tadeusz Trzaskalik</p>   |   |   |



## Friday

September 24, 2021

9.00 – 9.55 **Plenary lecture** (Channel 1, Chair and presentation of PRACE: Janez Povh)  
 PL5 (The PRACE plenary lecture) - **Nikolina Ban**: Mountain Climate at the Kilometer-Scale Grid Spacing

10.00 – 11.15 Parallel sessions:

| <b>(SS3)</b> Chair: Mirjana Pejić Bach<br><b>Data Science – Methodologies and Case Studies</b> (Channel 1)   | <b>(SS9)</b> Chair: Ângela Silva, Wellington Alves and Helena Sofia Rodrigues<br><b>Logistics and Sustainability</b> (Channel 2)  | <b>(S6)</b> Chair: Tadeusz Trzaskalik<br><b>Multi-Criteria Decision-Making</b> (Channel 3)   |
|--|---|--|
| <p>SS3.1 - Aljaž Ferencek and Mirjana Kljajić Borštnar: Open Government Data Impact Areas Identification with Data Mining Techniques</p> <p>SS3.2 - Blaž Gašperlin, Andreja Pucihar and Mirjana Kljajić Borštnar: SMEs Readiness in Utilizing Digital Technologies and Data in Digital Transformation</p> <p>SS3.3 - Petra Kašparová and Petr Průcha: Design of a Model for Implementation of Business Intelligence Methods in Decision-Making Processes</p> <p>SS3.4 - László Kovács: Performance Testing of Feature Selection Algorithms for Generalized Additive Models</p> <p>SS3.5 - Zoltán Madari and Veronika Szádóczkiné Varga: Empirical Analysis of the Hungarian Insurance Market</p> | <p>SS9.1 - Wellington Alves, Ângela Silva and Helena Sofia Rodrigues: Consumer's Willingness to Engage in the Circular Economy: The Higher Education Outlooks</p> <p>SS9.2 - Ana Rita Castro, Claudia Duarte, Senhorinha Teixeira and Ângela Silva: Urgent Orders Impact on Materials Management in Portuguese Construction Sector - Case Study</p> <p>SS9.3 - Balázs Dávid, Olivér Ósz and Máté Hegyháti: Scheduling of Waste Wood Processing Facilities with Overlapping Jobs</p> <p>SS9.4 - Joana Nascimento, Nuno Frazão, Senhorinha Teixeira and Ana Cecília Ribeiro: Order Variation and Flexibility Rules Dashboard</p> <p>SS9.5 - Ana Órfão, Ângela Silva and Wellington Alves: The Role of Intermodal Transportation on Reducing CO2 Emissions</p> | <p>S6.1 - Andrej Bregar: Multiple Criteria Utility Models for Sorting Incorporating Veto Related Preference Structures</p> <p>S6.2 - Vesna Čančer: How to Create Piecewise Linear Value Functions</p> <p>S6.3 - Hannia Gonzalez-Urango, Rocío Poveda-Bautista, Pablo D'Este, Oscar Llopis and Adrian A. Díaz-Faes: A Multicriteria Approach for the Analysis of Biomedical Research Networks</p> <p>S6.4 - Petra Grošelj, Gregor Dolinar and Tjaša Šmidovnik: Comparison of Best-Worst Method and Analytic Hierarchy Process</p> <p>S6.5 - Rok Hržica and Mirjana Kljajić Borštnar: Multi-Criteria Decision Making Methods Comparison on a Case of Power Plant Procurement</p> |

11.15 – 11.30 Break

11.30 – 12.45 Parallel sessions:

| <b>(SS3)</b> Chair: Mirjana Pejić Bach<br><b>Data Science – Methodologies and Case Studies</b> (Channel 1)   | <b>(SS9)</b> Chair: Ângela Silva, Wellington Alves and Helena Sofia Rodrigues<br><b>Logistics and Sustainability</b> (Channel 2)   | <b>(S6)</b> Chair: Tomasz Wachowicz<br><b>Multi-Criteria Decision-Making</b> (Channel 3)  |
|--|--|---|
| <p>SS3.6 - Boris Peršak, Uroš Rajkovič and Davorin Kofjač: Factors of Motor Policies Casco Coverage Risk Exposures</p> <p>SS3.7 - Maja Pervan and Petra Babić: Evaluation of Efficiency and Its Determinants in Croatian Hotel Industry</p> <p>SS3.8 - Maja Pervan and Ena Jurić: Determinants of Tourism Demand in Croatia</p> <p>SS3.9 - Jovana Zoroja, Mirjana Pejić Bach and Ivan Miloloža: Seeking Health</p> | <p>SS9.6 - Vitoria Packer do Amaral, Ana Cristina Ferreira and Bruna Ramos: A PDCA-Based Approach to Improve the Logistic Supply of an Assembly Line in the Automobile Sector: A Case Study</p> <p>SS9.7 - Eduardo Pintado, Lia Coelho de Oliveira and Jorge Esparteiro Garcia: Enhancing Environmental Sustainability and E-Commerce Deliveries through the Use of EPP Boxes in a Darkstore</p> | <p>S6.6 - Jaroslav Janáček and Marek Kvet: Emergency Medical System under Conflicting Criteria</p> <p>S6.7 - Sabina Šegula, Vladislav Rajkovič and Uroš Rajkovič: Assessing Florists' Competencies Using Multicriteria Decision Methodology</p> <p>S6.8 - Andrej Škraba, Anja Žnidaršič, Davorin Kofjač and Alenka Baggia: Comparison of Student and Expert Idea Assessment in Online Brainstorming Session</p> |

# Friday

September 24, 2021

Information over the Internet: Cluster Analysis Approach to Analyzing Differences Among European Countries

SS3.10 - Petr Průcha and Petra Kašparová: Use of Emotion in Designing BI Dashboards

SS9.8 - Tiago Duarte Silva Vieira, Ângela Silva, Jorge Esparteiro Garcia and Wellington Alves: Methodological Framework for Measuring Regional Logistics Performance

SS9.9 - Ana Rita Vasconcelos, Ângela Silva and Helena Sofia Rodrigues: Volunteering in Humanitarian Logistics: A Structural Equation Modeling

S6.9 - Tadeusz Trzaskalik: Vectors of Indicators in Multistage Bipolar Method

S6.10 - Tomasz Wachowicz, Ewa Roszkowska, Krzysztof Piasecki and Marzena Filipowicz-Chomko: Analyzing the Concordance of Principals' Preference Representation by Agents with Different Decision-Making Profiles Using Generalized Fuzzy Approach

12.55 – 13.20 Closing ceremony (Channel 1)





### **Program Committee:**

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