



Technical University of Crete
School of Production Engineering
& Management



Hellenic Operational Research
Society

7th INTERNATIONAL SYMPOSIUM & 29th NATIONAL CONFERENCE ON OPERATIONAL RESEARCH

**June 14-16, 2018
Chania, Crete, Greece**

Scientific Program

PROGRAM OUTLINE

June 14, 2018

09:00 – 10:00	Registration
10:00 – 10:15	Opening session & awards (<i>Conference center</i>)
10:15 – 11:15	Keynote Speech (<i>Conference center</i>)
11:15 – 11:30	Coffee break
11:30 – 12:30	Keynote Speech (<i>Conference center</i>)
12:30 – 14:00	Parallel sessions Session 1. Tourism management (<i>Conference center</i>) Session 2. Transport (<i>Socrates</i>)
14:00 – 15:00	Lunch
15:00 – 16:30	Parallel sessions Workshop in Energy & Climate Policies I (<i>Conference center</i>) Workshop in Marketing I (<i>Socrates</i>)
16:30 – 17:00	Coffee break
17:00 – 18:30	Parallel sessions Workshop in Energy & Climate Policies II (<i>Conference center</i>) Workshop in Marketing II (<i>Socrates</i>) Session 3. HELORS PhD Award (<i>Pythagoras</i>)
21:00	Gala dinner (<i>MAICh</i>)

June 15, 2018

09:30 – 11:00	Parallel sessions Session 4. Environment (<i>Conference center</i>) Session 5. Education (<i>Socrates</i>)
11:00 – 11:30	Coffee break
11:30 – 12:30	Keynote Speech (<i>Conference center</i>)
12:30 – 14:00	Parallel sessions Session 6. OR applications (<i>Conference center</i>) Session 7. Planning & Scheduling (<i>Socrates</i>)
14:00 – 15:00	Lunch
15:00 – 16:30	Parallel sessions Session 8. Quality management (<i>Socrates</i>) Session 9. Optimization (<i>Conference center</i>)
16:30 – 17:00	Coffee break
17:00 – 18:30	Parallel sessions Session 10. Finance (<i>Conference center</i>) Session 11. Strategy & Innovation Management (<i>Socrates</i>)
18:30 – 19:00	Closing session (<i>Conference center</i>)

June 16, 2018

09:30	A guided tour in the Old Town of Chania (registration required)
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DETAILED PROGRAM

June 14, 2018

- 09:00 – 10:00** **Registration**
- 10:00 – 10:15** **Opening session & awards** (*Conference center*)
- 10:15 – 11:15** **Keynote Speech** (*Conference center*)
Markos Papageorgiou (Technical University of Crete, Greece)
Chair: Constantin Zopounidis (Technical University of Crete, Greece)
- 11:15 – 11:30** **Coffee break**
- 11:30 – 12:30** **Keynote Speech** (*Conference center*)
Gert van Dijk (Nyenrode Business Universiteit & Tilburg University, The Netherlands)
Chair: George Baourakis (Mediterranean Agronomic Institute of Chania, Greece)
- 12:30 – 14:00** **Parallel sessions**
1. Tourism management, *Conference center* **Chair:** Athanasios Ballis (National Technical University of Athens, Greece)
- Big Data for personalised agricultural touring recommendations
Authors: *Kyvele Constantina Diareme, Theodore Tsiligiridis*
- The role of Board of Directors in Profitability: Insights from selected Greek hotel companies |
Authors: *Evangelia Pappa, John Filos, Panagiotis Spanos, Pantelis Papanastasiou*
- Perspectives for the development of the Greek water airports and seaplane services
Authors: *Athanasios Ballis, Tatiana Moschovou, Minas Pagonakis, Nikos Zachariadis*
- The contribution of air and maritime transport in the development of tourism in the islands of South Aegean
Authors: *Athanasios Ballis, Zacharias Petroulakis, Spyros Stathopoulos*
2. Transport **Room:** *Socrates* **Chair:** Michael Madas (University of Macedonia, Greece)
- Exploring the Effects of Fairness on Airport Scheduling Efficiency and Level of Service Metrics
Authors: *Konstantinos Androutsopoulos, Michael Madas, Vassileios Sitokonstantinou*
- Set-partition versus set-cover formulations for column generation based solution methodologies for optimal airline crew scheduling
Authors: *Odyseas Moschopoulos, Christos Kaimakamis, George Kozanidis*
- An Orienteering Problem Approach for City Tourist Trip Design
Authors: *Eleftherios Tsakirakis, Emmanouela Rapanaki, Irini Tsampounari, Magdalene Marinaki, Yannis Marinakis*
- City Logistics: Analysis of Factors Affecting the Development of an Intelligent Freight Transportation System
Authors: *Sotiris Gayialis, Evripidis Kechagias, Grigorios Konstantakopoulos, Georgios Papadopoulos, Stavros Ponis*

14:00 – 15:00 **Lunch**

15:00 – 16:30 **Parallel sessions**

Workshop in Energy & Climate Policies I. Transitions: policy, business and stakeholder perspectives.

Conference center, Chairs: Harris Doukas (National Technical University of Athens, Greece), Alexandros Flamos (University of Piraeus, Greece), Jenny Lieu (University of Sussex, UK)

The Triple Point of Energy Transitions: Stakeholder perceptions, Policy Mixes and the Climate Change and Energy Transition Law in Spain

Authors: *Alevgul H. Sorman, Xaquín García-Muros, Cristina Pizarro-Irizar, Mikel González-Eguino, Iñaki Arto*

Operational Research in support of energy and climate policy: The case of Greece

Authors: *Alexandros Nikas, Vassilis Stavrakas, Vangelis Psarras, Eleni Kanellou, Ioanna Makarouni, Haris Doukas, Alexandros Flamos*

A system dynamic approach for managing the corporate social responsibility strategies

Authors: *Thomas Tsalis, Ioannis Nikolaou*

Stakeholders find the missing risks

Authors: *Oscar van Vliet, Susanne Hanger-Kopp, Alexandros Nikas, Eise Spijker, Henrik Carlsen, Jenny Lieu*

Workshop in Marketing I. **Room:** *Socrates* **Chairs:** Nikolaos Matsatsinis & Stelios Tsafarakis (Technical University of Crete, Greece)

Visitor's multi-dimensional decision making approach: A pilot case study on a Unesco National Park

Authors: *George Fakotakis, Georgios Baourakis, Periklis Drakos, Gert van Dijk, Constantin Zopounidis*

Digital Transformation on Industry Level: Evidence from 5 industries

Authors: *Konstantinos Fouskas, Panagiotis Potouris, Maro Vlachopoulou*

Artificial Intelligence in Marketing: an Application for Tourism Development

Author: *Ioannis Issaris*

Sentiment Analysis in the Food Sector: The Greek Case

Authors: *Anastasios Liapakis, Theodore Tsiligiridis*

Marketing Strategy Decision Support for Technology and Market-Driven Changes

Authors: *Dimitrios Mitroulis, Fotis Kitsios, Evangelos Grigoroudis*

16:30 – 17:00 **Coffee break**

17:00 – 18:30 **Parallel sessions**

Workshop in Energy & Climate Policies II. Energy technologies, systems and carriers: top down and bottom up perspectives.

Conference center, Chairs: Harris Doukas (National Technical University of Athens, Greece), Alexandros Flamos (University of Piraeus, Greece), Jenny Lieu (University of Sussex, UK)

Assessing energy carriers and technology options on the Representative Concentration Pathways

Authors: *Athanasios Dagoumas, Stavros Lazarou, Filip Markovic*

Theory and practice of Hydrothermal coordination aligned to the Greek electricity market regulatory framework

Authors: *Michael Kounalakis, Petros Theodorou*

Gas stations under the microscope: deciding on station physical locations

Authors: *Vasileios Stavrou, Nikolaos Panayiotou*

Achieving a low-carbon power system through empowering consumers to produce and store clean energy at the local level: The case of Greece

Authors: *Vassilis Stavrakas, Serafeim Michas, Sotiris Papadelis, Alexandros Flamos*

Workshop in Marketing II. **Room:** *Socrates* **Chairs:** Nikolaos Matsatsinis & Stelios Tsafarakis (Technical University of Crete, Greece)

Changing users' energy consumption behavior using IoT

Authors: *Eftychios Protopapadakis, Anastasios Doulamis, Maria Kaselimi*

Measuring preferences of Airbnb users: a conjoint analysis study

Authors: *Stelios Tsafarakis, Georgios-Spyridon Bekos*

A Hybrid Multi-Criteria Hotel Recommender System using online ratings and reviews

Authors: *Yannis Zisos, Nikolaos Matsatsinis, Nikolaos Tsotsolas*

Analysing customers' satisfaction data via MCDA and fuzzy set methods

Authors: *Evangelia Krassadaki, Stelios Tsafarakis*

3. HELORS PhD Award **Room:** *Pythagoras* **Chair:** Yannis Siskos (University of Piraeus, Greece)

Optimal allocation of flight and maintenance hours to mission aircraft: Formulations, solution algorithms and computer implementations

Andreas Gavranis

The composition and the weak-link approaches to Network Data Envelopment Analysis

Grigorios Koronakos

A methodological framework for treating uncertainty in experts' opinion when evaluating maritime safety. Application to Ship-to-Ship (STS) cargo transfer operations

Dimitrios Stavrou

21:00

Gala dinner (MAICH)

June 15, 2018

09:30 – 11:00 Parallel sessions

4. Environment. *Conference center* **Chair:** Athanasios Vavatsikos (Democritus University of Thrace, Greece)

A User-Oriented Approach to Provide Online Decision Support Services: The AquaNES DSS Experience

Authors: *George Arampatzis, Patricia Stathatou, Dionysis Assimacopoulos, Panagiotis Scaloubakas*

Deciding to Go Green: Challenges and Benefits of the Leed Green Building Rating System

Authors: *Alexandros Iliopoulos, Konstantinos Kirytopoulos, Emmanuel Dermitzakis*

Green supplier selection and evaluation using multicriteria decision analysis

Authors: *Stratos Kartsonakis, Evangelos Grigoroudis, Nick Szirbik*

Assessing Decarbonisation Pathways towards 2050: A multicriteria approach

Authors: *Aikaterini Papapostolou, Charikleia Karakosta, Haris Doukas, John Psarras*

Renewable Energy Land Use Suitability Analysis Using Spatially Estimated Net Present Value

Authors: *Athanasios Vavatsikos, Sotirios-Orestis Alexandris, Eirini-Agni Theodorou*

5. Education **Room:** *Socrates* **Chair:** Michalis Doumpos (Technical University of Crete, Greece)

Proposing a New Dynamic Framework of Digital Skills: A Bottom-Up Approach

Authors: *George Barboutidis, Emmanouil Stiakakis, Fotis Kitsios, Maria Kamariotou*

Applying an excellence model to assess the Leadership best practices in Primary Education

Authors: *Konstantinos Christopoulos, Panagiotis Mitropoulos, Ioannis Mitropoulos*

Students' experience and Course evaluation: An MCDA analysis approach

Authors: *Ioannis Sitaridis, Stavros Stefanakakis, Maria Kamariotou, Fotis Kitsios*

11:00 – 11:30 Coffee break

11:30 – 12:30 Keynote Speech (Conference center)

Yannis Siskos (University of Piraeus, Greece)

Chair: Nikolaos Matsatsinis (Technical University of Crete, Greece)

12:30 – 14:00 Parallel sessions

6. OR applications. *Conference center* **Chair:** Yannis Siskos (University of Piraeus, Greece)

A robust evaluation of European e-government using the multicriteria PROMETHEE II method and bipolar robustness control

Authors: *Eleftherios Siskos, John Psarras*

Computational aspects, duality and applications of nonlinear models in data envelopment analysis

Authors: *Maria Trnovska, Margareta Halicka*

A Stochastic model for Air Transportation of Agricultural Goods under uncertainty

Authors: *Yue Wu, Lin Zhu*

Evaluating Operational and Quality Performance of the Health Services in EU Countries with Dynamic Network DEA

Authors: *Panagiotis Mitropoulos, Ioannis Mitropoulos*

7. Planning & Scheduling **Room:** *Socrates* **Chair:** Yannis Marinakis (Technical University of Crete, Greece)

A Study on the Effects of Quality on Market Share in Single Stage Manufacturing Systems with Customer Class Dependent Satisfaction

Authors: *Stratos Ioannidis, Dimitrios Konstantas, Vassilis Kouikoglou, Evangelos Grigoroudis*

Heuristic Approaches for Cooperative Covering Location Problems

Authors: *Maria Michopoulou, Ioannis Giannikos*

A Production Cost System for Supply Chain Decision Making in Metal Industry

Authors: *Nikolaos Panayiotou, Sotiris Gayialis*

A Firefly Algorithm for the Permutation Flow-Shop Scheduling Problem

Authors: *Andromachi Taxidou, Ioannis Karafyllidis, Dimitra Trachanatz, Manousos Rigakis, Magdalene Marinaki, Yannis Marinakis*

14:00 – 15:00 **Lunch**

15:00 – 16:30 **Parallel sessions**

8. Quality management **Room:** *Socrates* **Chair:** Evangelos Grigoroudis (Technical University of Crete, Greece)

Airline Efficiency Benchmarking with Data Envelopment Analysis: The Effect of Alliance Membership

Authors: *Angelos Kottas, Michael Madas*

A new business excellence framework for adaptation in times of turbulence

Authors: *Ioannis Metaxas, Dimitrios Koulouriotis, Prodromos Chatzoglou*

A multicriteria approach to assess the weights of the EFQM excellence model's criteria

Authors: *Yannis Politis, Evangelos Grigoroudis*

Defining customer satisfaction criteria categories using MCDA and Kano's model

Authors: *Evangelia Krassadaki, Evangelos Grigoroudis*

9. Optimization. *Conference center* **Chair:** Maria Trnovska (Faculty of Mathematics, Physics and Informatics, Comenius University, Slovakia)

A comparison of Weighted Superposition Algorithm and Firefly Algorithm in unitation-based changing environments

Authors: *Fehmi Burcin Ozsoydan, Adil Baykasoğlu*

Entropy Analytics of Online Ratings: A mixed GEO-BIN Model

Author: *Yiannis Dimotikalas*

Artificial Bee Colony Algorithm for the Solution of Multiobjective Fuel Consumption Multi-Depot Vehicle Routing Problem

Authors: *Emmanouela Rapanaki, Iraklis-Dimitrios Psychas, Eleftherios Tsakirakis, Magdalene Marinaki, Yannis Marinakis*

Evolving Strategies for the Iterated Prisoners Dilemma via a Binary Firefly Algorithm

Authors: *Manousos Rigakis, Dimitra Trachanatz, Andromachi Taxidou, Ioannis Karafyllidis, Magdalene Marinaki, Yannis Marinakis*

A Gravitational Search Algorithm for the Open Vehicle Routing Problem

Authors: *Irini Tsampounari, Eleftherios Tsakirakis, Magdalene Marinaki, Yannis Marinakis, Nikolaos Matsatsinis*

16:30 – 17:00 **Coffee break**

17:00 – 18:30 **Parallel sessions**

10. Finance. *Conference center* **Chair:** Constantin Zopounidis (Technical University of Crete, Greece)

A novel group decision making methodology for multicriteria portfolio selection

Authors: *Haris Doukas, Panos Xidonas, John Psarras*

Jumps in Commodity markets: What do we learn?

Author: *Christos Floros*

Robust Optimization Approaches for Portfolio Selection: An Empirical Comparative Analysis

Authors: *Antonios Georgantas, Michalis Doumpos*

Portfolio Formation Using Geographic Information Systems, Multi-Criteria Decision Making Models and Integer Programming Models: A Case Study in Wind Energy Exploitation

Authors: *Athanasios Vavatsikos, Aikaterini Arvanitidou, Dimitrios Petsas*

11. Strategy & Innovation Management **Room:** *Socrates* **Chair:** Yiannis Dimotikalis (Technological Educational Institute of Crete, Greece)

E-Business Strategy: Mission statement and performance of digital businesses

Authors: *Timoleon Delimpasis, Fotis Kitsios*

Strategic Decision Making using Multicriteria Analysis: Information Systems Performance Evaluation in Greek SMEs

Authors: *Maria Kamariotou, Fotis Kitsios, Evangelos Grigoroudis*

MCDAs framework to sustainable innovative strategy

Authors: *Dimitrios Mitroulis, Fotis Kitsios, Evangelos Grigoroudis*

A multicriteria Approach for Evaluating the Performance of Startup Companies in the sector of Smart Cities

Authors: *Christos Nikoloudis, Niki Karali, Konstantinos Aravossis*

18:30 – 19:00 **Closing session** (*Conference center*)

June 16, 2018

09:30 **A guided tour in the Old Town of Chania** (registration required)