



ODYSSEUS 2018

Seventh International Workshop on Freight Transportation and Logistics, held in Cagliari, Sardinia.

June 3 – 8, 2018

PROGRAM



Department of Mathematics
and Computer Science of
Cagliari University



Map of the conference venue



Dear ODYSSEUS 2018 participant,

The Organizing Committee has great pleasure to welcome all participants and accompanying guests to Cagliari (Sardinia, Italy) for the 7th International Workshop on Freight Transportation and Logistics, ODYSSEUS 2018. This workshop is organized by the members of the Department of Mathematics and Computer Science of the University of Cagliari.

ODYSSEUS is a triennial series of international workshops providing a high quality forum on recent developments, trends and advances in the theory, practice and application of mathematical models, methodologies and decision support systems in the field of Freight Transportation and Logistics. This year ODYSSEUS continues to build upon the great success of our earlier meetings in Crete (2000), Sicily (2003), Altea (2006), Cesme (2009), Mykonos (2012) and Ajaccio (2015). It brings together more than 180 academics, researchers and practitioners from around the world to discuss recent experiences, exchange ideas, disseminate research results, and present advanced applications and technologies. ODYSSEUS 2018 has enjoyed an enthusiastic reception from the Freight Transportation and Logistics community, as shown by the large number of submissions. We believe the rigorously selected contributions will continue this tradition of excellence and advance the field.

There are 144 presentations grouped into 50 sessions arranged in three parallel streams. The program covers a wide range of topics, featuring sessions on various facets of Routing (e.g., Vehicle Routing, Arc Routing, Inventory Routing, Location-Routing, Dynamic Routing, Stochastic Routing), Logistics (e.g., Supply Chain Logistics, Humanitarian Logistics) and Transportation Networks (e.g., Freight Transportation Networks, Network Design and Planning), as well as several sessions on emerging topics (e.g., Drones, Car and Bike Sharing). We hope that you will be inspired by the presentations, as well as by the less formal discussions with friends and colleagues participating to ODYSSEUS 2018.

A two-day school for young researchers and PhD students is organized by VeRoLog in conjunction with the workshop. Four lectures will be given within the workshop venues on Friday 1st and Saturday 2nd of June by Teodor Gabriel Crainic, Guy Desaulniers, Ola Jabali, Thibaut Vidal on different methodologies for Vehicle Routing Problems.

Several social events are offered to the conference participants and their guests: a welcome party on Sunday, a guided visit of the city of Cagliari on Monday evening, a visit to the Nuraghe of Barumini and a typical dinner on Tuesday evening, a visit to the beach of Chia and the old city of Nora on Wednesday evening and the conference dinner on Thursday.

We are grateful to the organizations and the individuals that have supported the organization of this event. In particular, we are grateful to the ODYSSEUS 2018 Scientific Committee, as well as to all the individuals who either contributed abstracts or served as reviewers of these abstracts. We wish you all an excellent week, an exciting meeting with informative presentations and stimulating discussions, and an unforgettable staying in Cagliari.

Looking forward to welcoming you in Cagliari, The Organizing Committee of Odysseus 2018

Organizing Committee

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- Federica Bomboi, Department of Mathematics and Computer Science, Università degli Studi di Cagliari
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- Massimo Di Francesco, Università degli Studi di Cagliari
- Enrico Gorgone, Università degli Studi di Cagliari
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- Panagiotis Repoussis, Stevens Institute of Technology
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- Walter Ukovich, Università di Trieste
- Tom Van Woensel, Eindhoven University of Technology
- Vedat Verter, McGill University
- Thibaut Vidal, Pontifical Catholic University of Rio de Janeiro
- Daniele Vigo, Università di Bologna
- Stefan Voss, Universität Hamburg
- Stein Wallace, Norwegian School of Economics
- Roberto Wolfler Calvo, Università degli Studi di Cagliari
- Paola Zuddas, Università degli Studi di Cagliari

The conference venue

ODYSSEUS 2018 will be held at the “Cittadella dei Musei” (Citadel of Museums), located in Piazza Arsenale 1, Cagliari. The Citadel of Museums can be easily reached by taxi or bus lines 6, 7 and 8. Bus tickets will be provided for free upon request by the Organizing Committee.

The buses of line 8 leave from “Piazza Matteotti” (the square in front of the railway station) and after 7 stops they arrive in “Viale Buoncammino”. Drop at the stop “Buoncammino (Polizia)”. Go back along “Viale Buoncammino” for about 50 m until you arrive at one of the old town gates, which is called “Porta Cristina”. Pass through the gate and the meeting venue is on your left.

One could also catch the buses of line 7 from “Piazza Yenne”. After 4 stops you are in “Piazza Indipendenza” (bus stop “Indipendenza”). Go through the “Porta di San Pancrazio” gate and the meeting venue is right in front of you.

One could finally travel by the buses of line 6, as bus stops “Regina Margherita (Terrapieno)” and “Regina Margherita (Giardini Pubblici)” are only 200 m far from the conference venue. The same bus routes can be used to reach the main points of interest in the city.

Sessions will be held in three rooms of the “Citadel of Museums”: the Green Room, the Red Room and the White Room”. The registration desk is at the entrance of the Green Room. The “Sala Mostre Temporanee” of the conference venue will be used as a lunchroom. The map of the conference venue is in the back of this program.

The entrance of the conference venue is the meeting point for all social activities:

- Sunday June 3 at 7:30 pm: welcome buffet and registration.
- Monday June 4 at 6:00 pm: guided tour in the historical neighbourhoods of Cagliari;
- Tuesday June 5 at 3:00 pm: trip and visit to the “Nuraghe of Barumini” (and typical dinner);
- Wednesday June 6 at noon: trip and visit to the beach of Chia and the old city of Nora;
- Thursday June 7 at 7:45 pm: conference dinner.

Please, be on time.

Information to chairs and speakers

Session Chairs

The role of the Session Chair is to ensure the smooth running of the session. The last speaker in the session is the Session Chair. In particular, the Session Chair shall perform the following duties:

- ✓ Contact the talk contributors before the session to clarify who will be presenting and pre-empt technical problems.
- ✓ Open and close the session with a few short remarks.
- ✓ Act as a strict timekeeper. Each session typically lasts 90 minutes, with 30 minutes allotted to each one of the three presentations.
- ✓ Ensure that presentations are delivered in the order listed in the program. If a speaker cancels or for any reason does not attend, the original timeline should be respected rather than pushing talks forward. The objective is to allow participants the opportunity to jump between concurrently running sessions, if they desire so.
- ✓ Introduce each speaker and the title of each presentation.
- ✓ Provide (if necessary) visual warnings to speakers as to the number of minutes left.
- ✓ Officiate questions and answers at the end of each talk.

Session chairs must notify the Registration and Information Desk about changes or cancellations; these changes will then be posted both on the announcement board at the Registration and Information Desk and outside the meeting rooms.

Speakers

Although the nominal duration of a presentation is 30 minutes, speakers should plan to present for no more than 25 minutes, leaving at least 5 minutes for Q&A and audience participation. Please feel free to bring along copies of your paper to distribute or to provide audience members a hand out with relevant information. The room assigned to each session is listed in the following pages. All rooms will be equipped with standard video projectors. A PC or laptop provided by the organizers will be set up in each room. These computers will have Microsoft Powerpoint and Adobe Acrobat Reader installed as well as USB ports for use with USB-portable memory devices (e.g., memory sticks). Please be on time for your session and check in with the session chair. In order to minimize setup time, speakers are kindly asked to upload and to test their presentation before the session starts. We encourage speakers to have their presentation available on a USB-portable data device. If necessary, you may also plug in your own laptop. However, make sure that you have the required adapters for external video output, and the appropriate wall plug types for 220V/60Hz AC (European voltage applies). For any special requirements, please let us know well in advance.

Event Timeline (I)

<i>Date</i>	<i>Time</i>	<i>Event</i>
June 1st	8:30 - 9:00	Registration to VeRoLog School and Odysseus 2018
	9:00 - 10:30	Introduction by Daniele Vigo and Lecture I by Thibaut Vidal
	10:30 - 11:00	Coffee break
	11:00 - 12:30	Lecture by Thibaut Vidal (part II)
	12:30 - 14:15	Lunch in a restaurant
	14:15 - 15:45	Lecture by Ola Jabali (part I)
	15:45 - 16:00	Coffee break
	16:00 - 17:30	Lecture by Ola Jabali (part II)
June 2nd	9:00 - 10:30	Lecture by Guy Desaulniers (part I)
	10:30 - 11:00	Coffee break
	11:00 - 12:30	Lecture by Guy Desaulniers (part II)
	12:30 - 13:30	Light lunch in the conference venue
	13:30 - 15:00	Lecture by Teodor Gabriel Crainic (part I)
	15:00 - 15:15	Coffee break
	15:15 - 16:45	Lecture by Teodor Gabriel Crainic (part II)
June 3rd	16:00 - 19:30	Registration to Odysseus 2018 and recommended visit to the Archaeological Museum in front of the conference venue
	19:30 - 22:00	Registration to Odysseus 2018 and welcome buffet

Event Timeline (II)

<i>Date</i>	<i>Time</i>	<i>Event</i>
June 4th	8:45 - 9:30	Opening session
	9:30 - 11:00	Sessions MO1
	11:00 - 11:30	Coffee break
	11:30 - 13:00	Sessions MO2
	13:00 - 14:30	Lunch
	14:30 - 16:00	Sessions MO3
	16:00 - 16:30	Coffee break
	16:30 - 18:00	Sessions MO4
	18:00 - 20:00	Guided tour in the historical neighbourhoods of Cagliari
June 5th	9:00 - 11:00	Sessions TU1
	11:00 - 11:30	Coffee break
	11:30 - 13:00	Sessions TU2
	13:00 - 14:30	Lunch
	14:30 - 15:00	Proposals and Announcement of Odysseus 2021
	15:00 - 19:00	Trip and Visit to the Nuraghe of Barumini
	19:30 - 23:30	Typical dinner
June 6th	9:00 - 10:30	Sessions WE1
	10:30 - 11:00	Coffee break
	11:00 - 12:00	Sessions WE2
	12:00 - 20:00	Trip and Visit to the beach of Chia and the old city of Nora

Event Timeline (III)

<i>Date</i>	<i>Time</i>	<i>Event</i>
June 7th	9:00 - 11:00	Sessions TH1
	11:00 - 11:30	Coffee break
	11:30 - 13:00	Sessions TH2
	13:00 - 14:30	Lunch
	14:30 - 16:00	Sessions TH3
	16:00 - 16:30	Coffee break
	16:30 - 18:00	Sessions TH4
	19:45 - 24:00	Conference dinner
June 8th	9:00 - 11:00	Sessions FR1
	11:00 - 11:30	Coffee break
	11:30 - 13:00	Sessions FR2
	13:00 - 14:30	Lunch
	14:30 - 16:00	Sessions FR3
	16:00 - 16:30	Coffee break
	16:30 - 17:30	Sessions FR4
17:30 - 17:45	Closing session	

Regular Sessions

Monday, June 4				
<i>Sessions</i>	<i>Time</i>	<i>Green Room</i>	<i>Red Room</i>	<i>White Room</i>
	8:45 9:30	Opening session		
MO1	9:30 11:00	Vehicle Routing 1	Terminal Management 1	Location Problems
MO2	11:30 13:00	Stochastic Vehicle Routing 1	Machine Learning & Optimization	Routing and Synchronization
MO3	14:30 16:00	Integrated Routing Problems	Multi-Objective Optimization	Traveling Salesman Problem 1
MO4	16:30 18:00	Routing with Profits	Arc Routing 1	Stochastic Programming

Tuesday, June 5				
<i>Sessions</i>	<i>Time</i>	<i>Green Room</i>	<i>Red Room</i>	<i>White Room</i>
TU1	9:00 11:00	Robust Vehicle Routing	City Logistics 1	Humanitarian Logistics
TU2	11:30 13:00	Inventory Routing 1	Service Network Design 1	Terminal Management 2

Wednesday, June 6				
<i>Sessions</i>	<i>Time</i>	<i>Green Room</i>	<i>Red Room</i>	<i>White Room</i>
WE1	9:00 10:30	Stochastic Vehicle Routing 2	Service Network Design 2	Electric Vehicle Routing
WE2	11:00 12:00	Inventory Routing 1	Green Logistics	Multimodal Transportation

Thursday, June 7				
<i>Sessions</i>	<i>Time</i>	<i>Green Room</i>	<i>Red Room</i>	<i>White Room</i>
TH1	9:00 11:00	Vehicle Routing 2	Drones	Maritime Transportation
TH2	11:30 13:00	Rich Vehicle Routing	Dynamic Planning Problems	Traveling Salesman Problem 2
TH3	14:30 16:00	Stochastic Vehicle Routing 3	Routing in healthcare problems	Container Transportation
TH4	16:30 18:00	Routing with workload balancing	Arc Routing 2	Scheduling Problems

Friday, June 8				
<i>Sessions</i>	<i>Time</i>	<i>Green Room</i>	<i>Red Room</i>	<i>White Room</i>
FR1	9:00 11:00	Vehicle Routing 3	Inventory Routing 2	Collaborative Logistics
FR2	11:30 13:00	Vehicle Routing 4	Networks	Car Sharing
FR3	14:30 16:00	Dynamic Vehicle Routing	City Logistics 2	Bike Sharing
FR4	16:30 17:30	Heuristics for Vehicle Routing	Terminal Management 3	Location Routing 2

Monday, June 4, 9:30-11:00, Sessions MO1

Session MO1a: Vehicle Routing 1 (Green Room)

9:30 Christian Tilk and Michael Forbes. Branch-and-Cut for the
10:00 Active-Passive Vehicle Routing Problem

10:00 Pedro Munari, Twan Dollevoet and Remy Spliet. A p-step
10:30 formulation for the CVRP

10:30 Guy Desaulniers, Timo Gschwind and Stefan Irnich.
11:00 Variable fixing based on two-arc sequences in branch-
price-and-cut algorithms

Session MO1b: Terminal Management 1 (Red Room)

9:30 Timo Gschwind. A Branch-Price-and-Cut Algorithm for
10:00 the Order Batching Problem

10:00 Christopher Bayliss, Antonio Martinez-Sykora, Julia
10:30 Bennell and Christine Currie. Robust Queue Constrained
Packing: a Vehicle Ferry Case Study

10:30 Teodor Gabriel Crainic, Emma Frejinger, Gianluca
11:00 Morganti and Serge Bisailon. Block & Car Planning for
Intermodal Rail

Session MO1c: Location Problems (White Room)

9:30 Maria Battarra, Antonio Rodriguez-Chia and Gunes
10:00 Erdogan. Hub Location and Arc Pricing Problem

10:00 Marilène Cherkesly, Mercedes Landete and Gilbert
10:30 Laporte. The Covering Location Problem with
Interconnected Facilities

10:30 Massimo Di Francesco, Manlio Gaudioso, Enrico Gorgone
11:00 and Ishwar Murthy. A Lagrangian-based Decomposition
Method on a New Formulation of the Capacitated
Concentrator Location Problem

Monday, June 4, 11:30-13:00, Sessions MO2

Session MO2a: Stochastic Vehicle Routing 1 (Green Room)

11:30 Alexandre Florio, Richard Hartl and Stefan Minner. Branch-
12:00 Cut-and-Price for the Vehicle Routing Problem with
Stochastic Demands under Optimal Restocking

12:00 Felipe Lagos, Mathias Klapp and Alejandro Toriello. Branch
12:30 and Price for Probabilistic Routing

12:30 Stein W. Wallace, Zhaoxia Guo and Michal Kaut. High-
13:00 dimensional dependent random travel times in vehicle routing

Session MO2b: Machine Learning and Optimization (Red Room)

11:30 Eric Larsen, Sébastien Lachapelle, Yoshua Bengio, Emma
12:00 Frejinger, Simon Lacoste Julien and Andrea Lodi. Fast
prediction of solutions to an integer linear program using
machine learning

12:00 Christian Schröder, Jean-Bertrand Gauthier and Michael
12:30 Schneider. Machine learning to guide granular search - Part I
12:30 Jean Bertrand Gauthier and Stefan Irnich. Machine learning
13:00 to guide sequential search -- Part II

Session MO2c: Routing and Synchronization (White Room)

11:30 Jian Gang Jin, Qiang Meng and Hai Wang. Column
12:00 Generation Approach for Feeder Vessel Routing and
Synchronization at a Congested Transshipment Port

12:00 Marcello Sammarra, Manlio Gaudioso and M. Flavia
12:30 Monaco. A Lagrangian approach to a cross-docking problem
with multiple gates

12:30 Alp Arslan and Niels Agatz. Dynamic Crowd-shipping with
13:00 Transfers

Monday, June 4, 14:30-16:00, Sessions MO3

Session MO3a: Integrated Routing Problems (Green Room)

- 14:30** Aliaa Alnaggar, Fatma Gzara and James Bookbinder. Distribution
15:00 Planning with Consolidation: A Two-Stage Stochastic
Programming Approach
-
- 15:00** Gianfranco Guastaroba, Jean-Francois Cote and M. Grazia
15:30 Speranza. The value of integrating loading and routing
-
- 15:30** Nabil Absi, Claudia Archetti, Stéphane Dauzère-Pérès, Dominique
16:00 Feillet and M.Grazia Speranza. Comparing Sequential and
Integrated Approaches for the Production Routing Problem
-

Session MO3b: Multi-Objective Optimization (Red Room)

- 14:30** Estèle Glize, Sandra Ulrich Ngueveu and Nicolas Jozefowicz.
15:00 Branch-and-price algorithms for bi-objective vehicle routing
problems
-
- 15:00** Antoine Giret, Yannick Kergosien and Emmanuel Néron. Solving
15:30 a multi objective shortest path problem
-
- 15:30** Alexandra Anderluh, Vera Hemmelmayr, Pamela Nolz and Teodor
16:00 Gabriel Crainic. Multi-objective optimization of a bi-modal two-
echelon vehicle routing problem with synchronization arising in
urban logistics
-

Session MO3c: Traveling Salesman Problem 1 (White Room)

- 14:30** Xingyin Wang, Bruce Golden and Edward Wasil. A Steiner Zone
15:00 Variable Neighborhood Search Heuristic for the Close-Enough
Traveling Salesman Problem
-
- 15:00** Matthew Petering. Evaluating Exact vs. Rule-Based Algorithms
15:30 for the Unending Real-Time Traveling Repairperson Problem
Under True Simulated Operating Conditions
-
- 15:30** Mike Hewitt, Natasha Boland, Minh Duc Vu and Martin
16:00 Savelsbergh. Solving Time Dependent Traveling Salesman with
Time Windows Problems
-

Monday, June 4, 16:30-18:00, Sessions MO4

Session MO4a: Routing with Profits (Green Room)

- 16:30** Christos Orlis, Roberto Roberti, Nicola Bianchessi and
17:00 Wout Dullaert. The Team Orienteering Problem with
Overlaps
-
- 17:00** Said Hanafi, Renata Mansini and Roberto Zanotti. Multi-
17:30 visit Clustered Team Orienteering Problem
-
- 17:30** Dario Bezzi, Alberto Ceselli and Giovanni Righini.
18:00 Dynamic programming for the Electric Vehicle
Orienteering Problem with multiple technologies
-

Session MO4b: Arc Routing 1 (Red Room)

- 16:30** Lacomme Philippe and Prins Christian. An efficient multi-
17:00 thread metaheuristic for the CARP
-
- 17:00** Hani Zbib and Sanne Wøhlk. Clustering Techniques for
17:30 Very-Large Scale Arc Routing Problems in Curbside Waste
Collection
-
- 17:30** James F. Campbell, Isaac Plana, José M. Sanchis and
18:00 Ángel Corberán. The Drone Arc Routing Problem
-

Session MO4c: Stochastic Programming (White Room)

- 16:30** Mariangela Rosano, Guido Perboli, Teodor Gabriel Crainic
17:00 and Walter Rei. Multimodal capacity planning with
uncertainty on contract fulfillment and suppliers reliability
-
- 17:00** Eyal Zvi Tenzer and Tal Raviv. Using stochastic dynamic
17:30 programming for parcel routing in a service points network
-
- 17:30** Daniele Manerba and Guido Perboli. A Progressive
18:00 Hedging approach for a Supplier Selection Problem under
Total Quantity Discount and Demand Uncertainty
-

Tuesday, June 5, 9:00-11:00, Sessions TU1

Session TU1a: Robust Vehicle Routing (Green Room)

-
- 9:00** Samuel Pelletier and Fan E. The electric vehicle routing problem with energy consumption uncertainty
-
- 9:30** Anirudh Subramanyam, Panagiotis Repoussis and Chrysanthos Gounaris. Robust Optimization of Heterogeneous Vehicle Routing Problems under Demand Uncertainty
-
- 10:00** Anirudh Subramanyam, Frank Mufalli, Jose Lainez-Aguirre, Jose Pinto and Chrysanthos Gounaris. Robust Multi-Period Vehicle Routing under Customer Order Uncertainty
-
- 10:30** Artur Pessoa, Michael Poss, Ruslan Sadykov and François Vanderberk. Solving the robust CVRP under demand uncertainty
-

Session TU1b: City Logistics 1 (Red Room)

-
- 9:00** Pamela Nolz, Diego Cattaruzza, Nabil Absi and Dominique Feillet. Two-echelon distribution with city hub capacity management
-
- 9:30** Marlin Ulmer. Incentive Schemes for Same-Day Delivery Routing
-
- 10:00** Pirmin Fontaine, Teodor Gabriel Crainic, Ola Jabali and Walter Rei. Tactical planning for Two-Tier City Logistics Systems under disturbances
-
- 10:30** Charlotte Köhler, Jan Fabian Ehmke and Ann Melissa Campbell. Flexibility Schemes for Attended Home Deliveries
-

Session TU1c: Humanitarian Logistics (White Room)

-
- 9:00** Alena Otto, Stefan Poikonen and Bruce Golden. Planning deliveries in disaster relief by truck and drone
-
- 9:30** Ohad Eisenhandler and Michal Tzur. Operational Challenges of a Food Bank in a Gleaning Network
-
- 10:00** Selene Silvestri, Marie-Ève Rancourt and Gilbert Laporte. Optimizing access to drinking water for remote populations affected by the Nepal earthquake
-

Tuesday, June 5, 11:30-13:00, Sessions TU2

Session TU2a: Inventory Routing 1 (Green Room)

-
- 11:30** Annelieke C. Baller, Guy Desaulniers, Said Dabia and Wout E.H. Dullaert. The Inventory Routing Problem with Demand Moves
-
- 12:00** Pawel Hanczar, Maciek Nowak and Jacek Kaleta. Fuel delivery in large networks
-
- 12:30** Cristián E. Cortés, Daniel Herl, Pablo A Rey, Alejandro Cataldo and Leandro Coelho. A Branch-and-Price approach for an inventory and routing problem to address the replenishment of a network of automated teller machines
-

Session TU2b: Service Network Design 1 (Red Room)

-
- 11:30** C. A. Benjamin Medbøen, Magnus B. Holm, Kjetil Fagerholt and Peter Schütz. Combining Optimization and Simulation for Designing Shortsea Feeder Networks
-
- 12:00** Mohammad Rahim Akhavan Kazemzadeh, Tolga Bektas, Teodor Gabriel Crainic, Antonio Frangioni, Bernard Gendron and Enrico Gorgone. Node-Based Lagrangian Relaxations for Multicommodity Capacitated Fixed-charge Network Design
-
- 12:30** Simon Belieres, Nicolas Jozefowicz and Frédéric Semet. A Graph Reduction Heuristic Supply Chain Transportation Plan Optimization
-

Session TU2c: Terminal Management 2 (White Room)

-
- 11:30** Bruno Bruck, Jean-Francois Cordeau and Emma Frejinger. An integrated approach for inbound train split and container loading in an intermodal railway terminal
-
- 12:00** Konstantinos Androutsopoulos, Michael Madas and Vassileios Sitokonstantinou. A Fairness-driven Scheduling Model for Airport Slot Allocation: is there a cost for fairness?
-
- 12:30** Nikola Obrenović, Virginie Lurkin, Michel Bierlaire and Vincent J. Baeriswyl. Capacity-Oriented Marshaling and Shunting Yards Location Problem
-

Wednesday, June 6, 9:00-10:30, Sessions WE1

Session WE1a: Stochastic Vehicle Routing 2 (Green Room)

- 9:00** Nicholas D. Kullman, Justin C. Goodson and Jorge E. Mendoza.
9:30 Dynamic Electric Vehicle Routing with Mid-route Recharging and Uncertain Availability
-
- 9:30** Szymon Albinski and Stefan Minner. A Data-Driven Approach
10:00 to the Vehicle Routing Problem with Time Windows under Uncertain Travel and Service Times
-
- 10:00** Edison Avraham and Tal Raviv. The stochastic and time-
10:30 dependent single vehicle field service personnel routing and scheduling problem

Session WE1b: Service Network Design 2 (Red Room)

- 9:00** Maciek Nowak, Mike Hewitt, Bogumil Kaminski and Michal
9:30 Pliszka. Strategic network design at the Polish Post
-
- 9:30** Giacomo Lanza, Teodor Gabriel Crainic, Walter Rei and
10:00 Nicoletta Ricciardi. A Study on Travel Time Stochasticity in Service Network Design with Quality Targets
-
- 10:00** Antonio Frangioni, Bernard Gendron and Enrico Gorgone.
10:30 Separable Lagrangian decomposition for the Knapsack Relaxation of Multicommodity Network Design

Session WE1c: Electric Vehicle Routing (White Room)

- 9:00** Jorge E. Mendoza, Christelle Guéret, Alejandro Montoya and
9:30 Juan G. Villegas R.. Routing a hybrid fleet of conventional and electric vehicles: the case of a French utility
-
- 9:30** Merve Keskin, Laporte Gilbert and Bülent Çatay. Electric
10:00 Vehicle Routing Problem with Time Dependent Waiting Times at Recharging Stations
-
- 10:00** Aurélien Froger, Jorge E. Mendoza, Ola Jabali and Gilbert
10:30 Laporte. Modeling and solving the electric vehicle routing problem with nonlinear charging functions and capacitated charging stations
-

Wednesday, June 6, 11:00-12:00, Sessions WE2

Session WE2a: Location Routing 1 (Green Room)

- 11:00** Claudia Archetti, Leandro C. Coelho, Maryam Darvish and
11:30 M. Grazia Speranza. Flexible two-echelon location-routing
-
- 11:30** Elena Fernández, Gilbert Laporte and Jessica Rodríguez
12:00 Pereira. Models and solution algorithms for Location-Arc Routing Problems

Session WE2b: Green Logistics (Red Room)

- 11:00** Shu Zhang, Ann Campbell and Jan Ehmke. Impact of
11:30 Congestion Pricing Schemes on Costs and Emissions of Commercial Fleets in Urban Areas
-
- 11:30** Marcel Turkensteen and Geir Hasle. Carbon emission
12:00 effects of consolidating shipments - - taking topological effects and temporal constraints into consideration

Session WE2c: Multimodal Transportation (White Room)

- 11:00** Denise Holfeld, Axel Simroth, Yuanyuan Li, Daniele
11:30 Manerba and Roberto Tadei. Risk Analysis for synchro-modal freight transportation: the SYNCHRO-NET approach
-
- 11:30** Yunfei Wang, Ioana Bilegan, Teodor Gabriel Crainic and
12:00 David Duvivier. A reactive decision support system for freight intermodal transportation - a Revenue Management perspective
-

Thursday, June 7, 9:00-11:00, Sessions TH1

Session TH1a: Vehicle Routing 2 (Green Room)

- 9:00** Qie He, Stefan Irnich and Yongjia Song. Branch-Cut-and-Price for the VRP with Time Windows and Convex Node Costs
-
- 9:30** Alexander Döge, Guy Desaulniers, Markus Frey and Rainer Kolisch. An Exact Algorithm for the Vehicle Routing Problem with Time Windows and Flexible Delivery Locations
-
- 10:00** Ali Alyasiry, Michael Forbes and Michael Bulmer. An Exact Algorithm for the Pickup and Delivery Problem with Time Windows and its Variants
-
- 10:30** Kevin Dalmeijer and Guy Desaulniers. A branch-price-and-cut algorithm for the TWAVRP -- addressing symmetry in route synchronization
-

Session TH1b: Drones (Red Room)

- 9:00** Monica Gentili, Pitu Mirchandani and Alessandro Agnetis. Locating and Scheduling Drones for Delivering Perishable Items
-
- 9:30** Stefan Poikonen and Bruce Golden. Ship and Drone Routing Problems
-
- 10:00** Barrett Thomas, Xinwei Chen and Marlin Ulmer. AlphaGo and Amazon: Reinforcement Learning for Same-Day Delivery with a Heterogeneous Fleet of Drones and Vehicles
-
- 10:30** Martin Savelsbergh, Iman Dayarian and John-Paul Clarke. Same-Day Delivery with Drone Resupply
-

Session TH1c: Maritime Transportation (White Room)

- 9:00** Kamilla Bolstad, Manu Joshi, Magnus Stålhane and Lars Magnus Hvattum. Optimizing the vessel fleet size and mix to perform maintenance at offshore wind farms
-
- 9:30** Bo Dong, Marielle Christiansen, Kjetil Fagerholt and Tolga Bektaş. Combined Fleet Deployment and Inventory Management with Flexibility in Port Choice
-
- 10:00** Gabriel Homsı, Thibaut Vidal, Rafael Martinelli and Kjetil Fagerholt. Ship routing and speed optimization with heterogeneous fuel consumption profiles
-
- 10:30** David Franz Koza. Liner shipping service scheduling and cargo allocation
-

Thursday, June 7, 11:30-13:00, Sessions TH2

Session TH2a: Rich Vehicle Routing (Green Room)

- 11:30** Raphael Kramer, Jean-François Cordeau and Manuel Iori.
-
- 12:00** A rich vehicle routing problem for pharmaceutical distribution
-
- 12:00** Mauricio Cerda, Cristián E. Cortés, Pablo A Rey and
-
- 12:30** Zdenko Koscina. GRASP heuristic scheme for solving a real case ready mixed concrete dispatching problem
-
- 12:30** Amalia Nikolopoulou, Panagiotis Repoussis and Christos
-
- 13:00** Tarantilis. The Vehicle Routing Problem with Cross-docking and Capacity Smoothing Restrictions
-

Session TH2b: Dynamic Planning Problems (Red Room)

- 11:30** Hugo Simao and Warren Powell. Decomposition Methods
-
- 12:00** for Dynamic Load Planning and Driver Management in LTL Trucking
-
- 12:00** Florian Martin, Vera Hemmelmayr and Tina Wakolbinger.
-
- 12:30** Service level selection and pricing for multimodal package distribution networks
-
- 12:30** Ramon Auad, Damian Reyes, Martin Savelsbergh and Alan
-
- 13:00** Erera. Managing Demand in Dynamic Delivery Operations
-

Session TH2c: Traveling Salesman Problem 2 (White Room)

- 11:30** Alexis Bretin, Guy Desaulniers and Louis-Martin
-
- 12:00** Rousseau. The Traveling Salesman Problem in Postal Services
-
- 12:00** Edoardo Fadda, Roberto Tadei, Guido Perboli and Lohic
-
- 12:30** Fotio Tiotsoy. The multi-path Traveling Salesman Problem with dependent random cost oscillations
-
- 12:30** Valentina Cacchiani, Carlos Contreras Bolton and Paolo
-
- 13:00** Toth. Algorithms for the Traveling Salesman Problem with Time-Dependent Service Times
-

Thursday, June 7, 14:30-16:00, Sessions TH3

Session TH3a: Stochastic Vehicle Routing 3 (Green Room)

- 14:30** Majid Salavati-Khoshgalb, Ola Jabali, Walter Rei and
15:00 Michel Gendreau. An Exact Algorithm to Solve the Vehicle Routing Problem with Stochastic Demands under an Optimal Restocking Policy
-
- 15:00** Justin Goodson, Marlin Ulmer and Barrett Thomas.
15:30 Dynamic Time Window Allocation and Sizing for Service Routing Applications
-
- 15:30** Fausto Errico, Guy Desaulniers, Andrea Lodi and Borzou
16:00 Rostami. Exact and approximate solution methods for the vehicle routing problem with stochastic and correlated travel times
-

Session TH3b: Routing in healthcare problems (Red Room)

- 14:30** Burcin Bozkaya, Cemre Gokalp, F. Sibel Salman and Eda
15:00 Yucel. Routing mobile medical facilities using transactional data
-
- 15:00** Florian Grenouilleau, Antoine Legrain, Nadia Lahrichi and
15:30 Louis-Martin Rousseau. A set partitioning heuristic for the home health care routing and scheduling problem
-
- 15:30** Marta Toschi, Ana María Anaya-Arenas, Ettore Lanzarone,
16:00 Valérie Bélanger and Angel Ruiz. A matheuristic for the Biomedical Sample Transportation Problem with Interdependent Pickups
-

Session TH3c: Container Transportation (White Room)

- 14:30** Maurizio Bruglieri, Simona Mancini and Ornella Pisacane.
15:00 A Combinatorial Benders' Cuts based Exact Method for the Multi Trip Containers Drayage Problem
-
- 15:00** Arturo E. Pérez Rivera and Martijn R.K. Mes. Integrated
15:30 Scheduling of Drayage and Long-haul Transportation in Sychromodality
-
- 15:30** Bernard Zweers, Sandjai Bhulai and Rob van der Mei.
16:00 Optimizing barge utility in hinterland container transportation
-

Thursday, June 7, 16:30-18:00, Sessions TH4

Session TH4a: Routing Problems with workload balancing (Green Room)

- 16:30** Francesco Bertoli and Philp Kilby. An Analysis of
17:00 Territory Design For Routing Problems with Time Windows and Balance Requirements
-
- 17:00** Fabien Lehuédé, Olivier Péton and Fabien Tricoire. Multi-
17:30 directional local search for the leximax-VRP
-
- 17:30** Piotr Matl, Richard F. Hartl and Thibaut Vidal. Workload
18:00 Equity in Vehicle Routing: The Impact of Alternative Workload Resources
-

Session TH4b: Arc Routing 2 (Red Room)

- 16:30** Demetrio Laganà, Enrique Benavent, Ángel Corberán and
17:00 Francesca Vocaturo. A Heuristic Algorithm for the Periodic Rural Postman Problem with Irregular Services
-
- 17:00** Sanne Wøhlk and Gilbert Laporte. A Districting-Based
17:30 Heuristic for the Coordinated Capacitated Arc Routing Problem
-

Session TH4c: Scheduling Problems (White Room)

- 16:30** Asvin Goel and Christian Tilk. Bidirectional labelling for
17:00 the European Union Truck Driver Scheduling Problem
-
- 17:00** Samuela Carosi, Antonio Frangioni, Laura Galli, Leopoldo
17:30 Girardi and Giuliano Vallese. A Lagrangian Heuristic for Integrated Timetabling and Vehicle Scheduling
-

Friday, June 8, 9:00-11:00, Sessions FR1

Session FR1a: Vehicle Routing 3 (Green Room)

- 9:00** Homero Larrain, Leandro Coelho, Claudia Archetti and Maria Grazia Speranza. A VMND algorithm for the multi-period vehicle routing problem with due dates
-
- 9:30** Teobaldo Bulhões, Minh Hoang Hà, Rafael Martinelli and Thibaut Vidal. The vehicle routing problem with service level constraints
-
- 10:00** Wenjuan Gu, Diego Cattaruzza, Maxime Ogier and Frederic Semet. Adaptive large neighborhood search for multicommodity VRP
-
- 10:30** Alessandro Hill, Stefan Voss and Roberto Baldacci. Vehicle Routing Problems with Matches and Conflicts
-

Session FR1b: Inventory Routing 2 (Red Room)

- 9:00** Emilio Jose Alarcon Ortega, Michael Schilde and Karl Franz Doerner. Matheuristic for the Consistent Inventory Routing Problem with Time Windows
-
- 9:30** Annarita De Maio, Leandro C. Coelho and Demetrio Laganà. A Variable MIP Neighborhood Search for the Multi-attribute Inventory Routing Problem
-
- 10:00** Fabián Penaranda, Marcus Poggi and Rafael Martinelli. A Benders Decomposition for the Inventory Routing Problem
-
- 10:30** Claudia Archetti, Maria Grazia Speranza, Maurizio Boccia, Antonio Sforza and Claudio Sterle. A branch and cut algorithm for single and multiple vehicle IRP with pickups and deliveries
-

Session FR1c: Collaborative Logistics (White Room)

- 9:00** Margaretha Gansterer, Richard F. Hartl and Rudolf Vetschera. Auction-based mechanisms in carrier collaborations: challenges and limitations
-
- 9:30** Mario Guajardo, Ondrej Osicka and Thibault van Oost. Collaborative location-routing
-
- 10:00** Joydeep Paul, Niels Agatz and Martin Savelsbergh. Shared Capacity Routing Problem with Transfer Points
-
- 10:30** Mathijs van Zon, Remy Spliet and Wilco van den Heuvel. Cost allocation in cooperative transport: The Joint Network Vehicle Routing Game
-

Friday, June 8, 11:30-13:00, Sessions FR2

Session FR2a: Vehicle Routing 4 (Green Room)

- 11:30** Peng Sun, Lucas Veelenturf, Tom Van Woensel and Mike Hewitt. The time dependent pickup and delivery problem with time windows
-
- 12:00** Dominik Goeke, Roberto Roberti and Michael Schneider. Heuristic Solution of the Consistent Vehicle-Routing Problem
-
- 12:30** Nicola Bianchessi, Michael Drexler and Stefan Irnich. The SDVRP with Time Windows and Customer Inconvenience Constraints
-

Session FR2b: Networks (Red Room)

- 11:30** Jean Bertrand Gauthier, Jacques Desrosiers and Marco Lübbecke. A strongly polynomial Contraction-Expansion algorithm for network flow problems
-
- 12:00** Markus Leitner, Ivana Ljubic, Martin Riedler and Mario Ruthmair. The Directed Network Design Problem with Relays
-
- 12:30** Karen Smilowitz, Liwei Zeng and Sunil Chopra. Leveraging network structure in covering path problems: An application to school bus routing
-

Session FR2c: Car Sharing (White Room)

- 11:30** Henrik Andersson, Carl Axel Folkestad, Nora Hansen, Kjetil Fagerholt and Giovanni Pantuso. A Memetic Algorithm for Optimal Charging and Repositioning of Electric Vehicles in a Free-Floating Carsharing System
-
- 12:00** Georg Brandstätter, Markus Leitner and Mario Ruthmair. Branch-and-price for charging station placement in free-floating electric car sharing systems
-
- 12:30** Burak Boyacı and Konstantinos G. Zografos. Considering Spatial and Temporal Flexibility in Optimizing One-Way Electric Carsharing Systems
-

Friday, June 8, 14:30-16:00, Sessions FR3

Session FR3a: Dynamic Vehicle Routing (Green Room)

14:30 Claudia Archetti, Dominique Feillet, Andrea Mor and M.

15:00 Grazia Speranza. Dynamic travelling salesman problem with uncertain release dates

15:00 Demetrio Laganà, Gilbert Laporte and Francesca Vocaturo.

15:30 A Dynamic Multi-Period General Routing Problem

15:30 Adria Soriano, Margaretha Gansterer and Karl F. Dörner. A

16:00 multi-graph approach for the periodic vehicle routing problem with time spread constraints

Session FR3b: City Logistics 2 (Red Room)

14:30 Dimitris Paraskevopoulos, Panagiotis Repoussis and

15:00 Christos Tarantilis. Districting of Urban Service Networks

15:00 Yuan Yuan, Diego Cattaruzza, Maxime Ogier and Frederic

15:30 Semet. Last mile delivery problem: the one-vehicle case

15:30 Tolga Bektas, Antonio Martinez-Sykora and Tom Cherrett.

16:00 Clustered routing for last-mile goods deliveries in urban areas: Formulation and a branch-and-cut algorithm

Session FR3c: Bike Sharing (White Room)

14:30 Francesca Maggioni, Rossana Cavagnini, Luca Bertazzi

15:00 and Mike Hewitt. Multi-objective stochastic optimization models for managing a bike sharing system

15:00 Mauro Dell'Amico, Manuel Iori, Stefano Novellani and

15:30 Ananad Subramanian. The Bike sharing Rebalancing Problem with Stochastic Demands

15:30 Bruno Albert Neumann Saavedra, Dirk Mattfeld, Teodor

16:00 Gabriel Crainic and Bernard Gendron. On the Performance of Bike-Sharing Redistribution Planning: a Service Network Design Perspective

Friday, June 8, 16:30-18:00, Sessions FR4

Session FR4a: Heuristics for Vehicle Routing (Green Room)

16:30 Konstantinos Androutopoulos and Nikolaos Kamaras.

17:00 Modeling and Solving a Real-Life Fuel Delivery Problem with Safety Considerations

17:00 Luigi De Giovanni, Nicola Gastaldon and Filippo Sottovia.

17:30 Express delivery in freight transportation: an application to the trucking industry

Session FR4b: Terminal Management 3 (Red Room)

16:30 Jamie Fairbrother and Konstantinos Zografos. Introducing

17:00 flexibility and demand-based fairness in slot scheduling decisions

17:00 Masoud Mirzaei, Nima Zaerpour and René de Koster. An

17:30 Integrated Cluster-Based Storage Assignment

Session FR4c: Location Routing 2 (White Room)

16:30 Annunziata Esposito Amideo, Maria Paola Scaparra,

17:00 Antonio Sforza and Claudio Sterle. An integrated user-system approach for shelter location and evacuation routing

17:00 Teodor Gabriel Crainic, Massimo Di Francesco, Enrico

17:30 Gorgone and Paola Zuddas. A multicommodity location routing problem in a maritime urban area
