



SAPIENZA
UNIVERSITÀ DI ROMA



ODS 2021

Rome, September 14-17, 2021

International Conference on
Optimization and Decision Sciences

50° Conference of
Italian Operations Research Society

Optimization in Artificial Intelligence
and Data Science

Conference Program

Supported by




Program overview

Tuesday 14 September

8-10 Registration
1000-1030 Opening
1030-1200 Sessions
1200-1230 Coffee Break
1230-1400 Sessions
1400-1530 Lunch
1530-1700 Sessions
1700-1730 Coffee Break
1730-1830 Plenary (Pitu B. Mirchandani)
1830-2100 Welcome Cocktail

Wednesday 15 September

0900-1030 Sessions
1030-1100 Coffee Break
1100-1200 Plenary (Matthias Ehrgott)
1200-1330 Sessions
1330-1530 Lunch, 1430-1530 meet the editor  Springer
1530-1700 Sessions
1700-1730 Coffee Break
1730-1900 Sessions

20:30 Social Event: Tour - Rome Monumental Fountains

Thursday 16 September

0900-1030 Sessions
1030-1100 Coffee Break
1100-1200 Plenary (Dolores Romero Morales)
1200-1330 Sessions
1330-1530 Lunch – AIRO Board meeting
1530-1700 Sessions
1700-1730 Coffee Break
1730-1930 AIRO Meeting

2100-2400 Social Dinner Hotel Forum

Friday 17 September

0900-1030 Sessions
1030-1100 Coffee Break
1100-1200 Plenary (Teodor G. Crainic)
1200-1330 Sessions
1330-1400 Closing Session

Conference Program


Updated: 8 September 2021

Tuesday 14 September		
08:00-10:00	Registration	
10:00-10:30	Opening	
Stream A		
10:30-12:00	Invited Session: OPTSM 1 A1 Chair: A. D'Ariano	
	B. He	An integrated optimization approach for timetabling and infrastructure maintenance scheduling procedure during night periods at microscopic level
	J. Yin	Timetable Coordination in a Rail Transit Network with time-dependent Passenger Demand
	S. Li	Collaborative train regulation and stop-skipping adjustment strategy of an urban rail transit line by model predictive control
	P. Mo	An Exact Method for the Integrated Optimization of Subway Lines Operation Strategies with Asymmetric Passenger Demand and Operating Costs
12:00-12:30	Coffee Break	
12:30-14:00	Invited Session: OPTSM 2 A2 Chair: A. D'Ariano	
	D. Wang	Integrated rolling stock deadhead routing and timetabling in urban rail transit lines
	L. Tang	Scheduling local and express trains in suburban rail transit lines: Mixed-integer nonlinear programming and adaptive genetic algorithm
	Y. Gao	A Branch-and-Price Algorithm for the Weekly Rolling Stock Planning in High-speed Rail Networks
	T. Bosi	On-line train calendar generation: linear programming model and algorithmic method
14:00-15:30	Lunch	
15:30-17:00	Invited Session: OPTSM 3 A3 Chair: M. Samà	
	M.L. Tessitore	A Simulation-Optimization Framework for Traffic Disturbance Recovery in Metro Systems
	G. Maroti	Timetable optimisation - on the way from theory to practice
	B. Pascariu	Algorithmic improvements for the train routing selection in large instances
	M. Samà	Optimal microscopic train timetabling: a Swiss case study
17:00-17:30	Coffee Break	
17:30-18:30	Plenary Chair: A. Agnetis	
	P. B. Mirchandani	Issues, Problems, Challenges, and Solutions in Transforming Integrated Road/Power Infrastructures for Electric/Alternate-fueled Vehicles
18:30-20:30	Welcome Cocktail	
Tuesday 14 September		
08:00-10:00	Registration	
10:00-10:30	Opening	
Stream B		
10:30-12:00	Session: Machine Scheduling B1 Chair: A. Fuduli	
	M. Avolio	Heuristic approaches for balancing the average completion times of two sets of jobs in a single-machine scheduling problem
	G. Caselli	Mixed Integer Linear Programming for a Real-World Parallel Machine Scheduling Problem with Workforce and Precedence Constraints
	E. Rener	Single machine rescheduling for new orders with maximum lateness minimization
	V.T'kindt	Adversarial bilevel scheduling on a single machine


12:00-12:30	Coffee Break	
12:30-14:00	Session: Combinatorial Optimization and Integer Programming I B2 Chair: S. Mattia	
	C. D'Ambrosio	The Knapsack Problem with Forfeit Sets
	P. Detti	Sequential upper bounds for the multiple knapsack
	S. Mattia	The clique interdiction problem by graph mapping
	L. Moreschini	The Set Covering Problem with Conflicts
14:00-15:30	Lunch	
15:30-17:00	Session: Combinatorial Optimization and Integer Programming II B3 Chair: Matteo Fischetti	
	F. Laureana	The Generalized Minimum Branch Vertices Problem: Polyhedral Analysis and Branch and Cut
	E. Fadda	Assessment of New Multi-Covering Facility Location Models
	G. Sartor	A Benders-like decomposition for train timetabling: a real-life application in Norway
	Matteo Fischetti	Benders cuts for the integrated layout and cable routing problem
17:00-17:30	Coffee Break	
17:30-18:30	Plenary Chair: A. Agnetis	
	P. B. Mirchandani	Issues, Problems, Challenges, and Solutions in Transforming Integrated Road/Power Infrastructures for Electric/Alternate-fueled Vehicles
18:30-20:30	Welcome Cocktail	
Tuesday 14 September		
08:00-10:00	Registration	
10:00-10:30	Opening	
Stream C		
10:30-12:00	Session: Networks Analysis and Design C1 Chair: L. Calzada Infante	
	A. Hill	Expanding Students' Social Networks via Optimized Team Assignments
	N. V. C. Gudapati	Network Design with Service Requirements: Scaling-up the Size of Solvable Problems
	L. Calzada-Infante	Review of Dominance Network Analysis, a methodology to evaluate efficiency from a network perspective
		EMPTY
12:00-12:30	Coffee Break	
12:30-14:00	Session: Logistic I C2 Chair: G. Speranza	
	C. Archetti	Aggregated Formulations for the Inventory Routing Problem
	A. Mor	The Bi-objective Long-haul Transportation Problem on a Road Network
	G. Speranza	Efficient loading and unloading operations via a booking system
	C. Sterle	A Location-Routing Based Solution Approach for Reorganizing Collection and Delivery Operations
14:00-15:30	Lunch	
15:30-17:00	Session: Logistic II C3 Chair: C. Filippi	
	N. M. Dinh	Split and Unsplit Inventory Routing Problems
	D. M. Pinto	Waste profit patterns optimization trough logistic and sorting models integration
	C. Filippi	A Kernel Search Heuristic for a Fair Facility Location Problem
		EMPTY
17:00-17:30	Coffee Break	
17:30-18:30	Plenary Chair: A. Agnetis	
	P. B. Mirchandani	Issues, Problems, Challenges, and Solutions and in Transforming Integrated Road/Power Infrastructures for Electric/Alternate-fueled Vehicles
18:30-20:30	Welcome Cocktail	


Tuesday 14 September		
08:00-10:00	Registration	
10:00-10:30	Opening	
Stream D		
10:30-12:00	Invited Session: Equilibria, variational models and applications D1 Chair: M. Passacantando	
	A. Thünen	Multiscale Control of Stackelberg Games with Infinitely many Followers
	R. Pini	Continuity and maximal quasi monotonicity of normal cone operators
	M. Bianchi	Brezis pseudomonotone bifunctions and quasi equilibrium problems via penalization
	G. Priori	On nested affine variational inequalities: the case of multi-portfolio selection
	A.Barbagallo	An Emission Pollution Permit System for Time-Dependent Transportation Networks Based on Origin-Destination Pairs
12:00-12:30	Coffee Break	
12:30-14:00	Session: Nonlinear Optimization I D2 Chair: M. Gaudio	
	M. Lapucci	A Unifying Framework for Sparsity Constrained Optimization
	C. Salvatore	Optimization for Brain-Computer Interfaces
	B. Pirouz	New Mixed Integer Fractional Programming Problem for Sparse Optimization
	M. Gaudio	On the use of the polyhedral k-norm in feature selection for SVM models
14:00-15:30	Lunch	
15:30-17:00	Session: Large Scale Nonlinear Programming D3 Chair: G. Fasano	
	A.Cristofari	An almost cyclic 2-coordinate descent method with active-set identification
	D. Zeffiro	Fast cluster detection in networks by first-order optimization
	G. Fasano	An improvement of the pivoting strategy in the Bunch and Kaufman decomposition, within Truncated Newton methods
		EMPTY
17:00-17:30	Coffee Break	
17:30-18:30	Plenary Chair: A. Agnetis	
	P. B. Mirchandani	Issues, Problems, Challenges, and Solutions in Transforming Integrated Road/Power Infrastructures for Electric/Alternate-fueled Vehicles
18:30-20:30	Welcome Cocktail	

Wednesday 15 September		
Stream A		
09:00-10:30	Invited Session: OPTSM 4 A4 Chair: M.Petris	
	Y. Wang	Real-time integrated train rescheduling and rolling stock circulation planning for a metro line under disruptions
	F. Naldini	Optimization of Multi-Train Energy Consumption in Real-Time Railway Traffic Management

	N. Luangboriboon	Optimal Passenger Flow Management within Railway Stations via Alternative Graphs
	M. Petris	A Decomposition Algorithm for the Real-Time Railway Traffic Management
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: L. Amorosi	
	M. Ehrgott	Data Envelopment Analysis: From Linear Optimisation to Multiobjective Linear Optimisation
12:00-13:30	Invited Session: OPTSM 5 A5 Chair: V. Dal Sasso	
	A.L. Croella	Safe Places assignment for trains
	A.Trivella	Decision making under uncertainty in public transport networks – The case of stochastic railway traffic control
	P. Vansteenwegen	Demand-responsive feeder lines for suburban areas
	V. Dal Sasso	Fast deadlocks detection between pairs of trains
13:30-15:30	Lunch	14:30-15:30 meet the editor 
15:30-17:00	Invited Session: OPTSM 6 A6 Chair: L. De Giovanni	
	L. Castelli	Mitigating demand-capacity unbalances through inter-airline slot tradings
	D. Gui	Optimal aircraft arrival scheduling model based on continuous descent operation in busy terminal maneuvering areas
	D. Aktas	A demand responsive public bus system with short-cuts
	L. De Giovanni	A matheuristic approach to preference aware air traffic flow management
17:00-17:30	Coffee Break	
17:30-19:00	Invited Session: OPTSM 7 A7 Chair: V. Cacchiani	
	B.van Rossum	A Column Generation Approach for the Integrated Crew Re-Planning Problem
	F. Bigi	A dynamic choice methodology for shunting policies in freight train operations
	R. de Celis	Towards final en-route, arrival and runway traffic management and trajectory optimization in air transportation
	V. Cacchiani	A Fixed Job Schedule Application in Train-unit Assignment
20:30-21:30	Tour - Rome Monumental Fountains	

Wednesday 15 September		
Stream B		
09:00-10:30	Session: Combinatorial Optimization and Integer Programming III B4 Chair: T.Bacci	
	D. Serra	A Genetic Approach for the 2-Edge-Connected Minimum Branch Vertices Problem
	C. Sorgente	The Shortest Path with Mutual Exclusive Arc Conflicts problem
	R. Mansini	A new variant of Kernel Search for solving Mixed Integer Linear Programming Problems
	T. Bacci	DP-based formulations of the Unit Commitment Problem and the Convex Hull of Star-Shaped MINLPs
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: L. Amorosi	
	M. Ehrgott	Data Envelopment Analysis: From Linear Optimisation to Multiobjective Linear Optimisation
12:00-13:30	Session: Combinatorial Optimization and Integer Programming IV B5 Chair: C. Gentile	
	F.Carrabs	A Biased Random-key Genetic Algorithm for the Set Orienteering Problem
	A.Masone	Exact and heuristic approaches for the Intersection Inspection Rural Postman Problem
	A.Laganà	A two-phase hybrid algorithm for the periodic rural postman problem with irregular services

	C. Gentile	New heuristics for the Max-Cut problem
13:30-15:30	Lunch	14:30-15:30 meet the editor 
15:30-17:00	Session: Networks B6 Chair: D. Manerba	
	A.Calamita	Planning on wireless networks: optimization and technological aspects
	S. Carosi	A decision support system for real time disruption management in local public transport
	D. Manerba	Optimal design of redundant backbones in Bluetooth Mesh Networks
		EMPTY
17:00-17:30	Coffee Break	
17:30-19:00	Invited Session: Timetabling and Scheduling B7 Chair: F. Di Francesco	
	C. Crobu	Quality timetabling for Italian High-School
	A. Schaefer	Comparing Exact and Metaheuristic Methods for a Real-World Examination Timetabling Problem
	M. Sammarra	An overview of Lagrangian Relaxation techniques to truck scheduling problems in cross-docking distribution centres
	M. Boccia	Exact and heuristic approaches for an Automated Guided Vehicle Scheduling Problem with Battery Constraints
20:30-21:30	Tour - Rome Monumental Fountains	

Wednesday 15 September		
Stream C		
09:00-10:30	Session: Mobility and Transportation C4 Chair: R. Scatamacchia	
	V. Morandi	A centralized pedestrian advice framework compliant with Covid-19 outbreak restrictions
	A.Russo	An Iterative Rounding approach to the Railroad Blocking Problem
	R. Scatamacchia	The Baggage Belt Assignment Problem
		EMPTY
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: L. Amorosi	
	M. Ehrgott	Data Envelopment Analysis: From Linear Optimisation to Multiobjective Linear Optimisation
12:00-13:30	Invited Session: Machine learning-based optimization and control for extreme metamaterials design C5 Chair: G. Gnecco	
	D. Costarelli	Neural Network Operators: Approximation Results
	F. Nutarelli	On dispersion curve identification
	P.K. Gourishetty	Global optimization of a turbine design via neural networks and an evolutionary algorithm
	G. Gnecco	Multi-objective metafilter optimization
13:30-15:30	Lunch	14:30-15:30 meet the editor 
15:30-17:00	Invited Session Multi-Objective Mixed Integer Optimization C6 Chair: M. De Santis	
	A-J. Ulusoy	Multi-objective design for control of water networks by mixed integer programming
	G. Liuzzi	A new method for mixed integer derivative-free multiobjective optimization problems
	M. De Santis	Detecting the efficient set of multiobjective integer quadratic programming problems
	P. Mansueto	Improving the NSGA-II Algorithm with Descent Steps
17:00-17:30	Coffee Break	
17:30-19:00	Invited Session AiroYoung Pitch Talk C7	

	Chair. A. Raffaele	
	Speakers: D. Crapis , V. Dal Sasso, Martina Fischetti, S. Fugaro , A. Raffaele	
20:30-21:30	Social Event: Tour - Rome Monumental Fountains	
Wednesday 15 September		
Stream D		
09:00-10:30	Invited Session: Recent Advances on Semidefinite Programming D4 Chair: M. Cerulli	
	F. Battista	Dealing with inequalities in large scale semidefinite programs: a computational study
	N. Gusmeroli	BiqBin: an exact penalty solver for linearly constrained BQPs
	E. Gaar	Utilizing SDP to Tackle a Conjecture from Graph Theory
	M. Cerulli	Solving a class of bilevel programs with quadratic lower level
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: L. Amorosi	
	M. Ehrgott	Data Envelopment Analysis: From Linear Optimisation to Multiobjective Linear Optimisation
12:00-13:30	Invited Session: Advances in Optimization under Uncertainty D5 Chair: P. Beraldi	
	H. Lefebvre	A finite eps-convergence algorithm for 0-1 mixed-integer convex two-stage robust optimization with objective uncertainty
	L.F. Tiotsop	Stochastic Programs embedding Discrete Choice Problems with unknown distributions and their Deterministic Approximation
	D. Faccini	Robust and Distributionally Robust Optimization Models for Support Vector
	F. Maggioni	Bounds for Multistage Mixed-Integer Distributionally Robust Optimization
13:30-15:30	Lunch	14:30-15:30 meet the editor 
15:30-17:00	Invited Session: Stochastic Programming in Energy and Logistics D6 Chair: P. Beraldi	
	P. Paronuzzi	Chance Constrained Problems with Integer Scenario Variables
	P. Brandimarte	Approximate dynamic programming for stochastic lot sizing problems
	L. Di Puglia Pugliese	Crowd-shipping with uncertain travel time
	P. Beraldi	A Bi-level Stochastic Model for the Electricity Pricing Problem
17:00-17:30	Coffee Break	
17:30-19:00	Invited Session: In memory of Bruno Simeone D7 Chair: I.Lari	
	P. Serafini	Majority Judgment with partial information
	F. Pukelsheim	The tandem system: A new electoral frame for the European Parliament
	E. Spedicato	ABS Methods, The first twenty years, Historical development and comments
	J. Puerto	Dynamically Second-Preferred p-Center Problem
	Contributions of Friends and Colleagues	
20:30-21:30	Tour - Rome Monumental Fountains	

Thursday 16 September		
Stream A		
09:00-10:30	Invited Session: Health Care A8 Chair: P. Cappanera	
	Massimo Roma	A simulation-based optimization approach for the calibration of a discrete event simulation model of an Emergency Department
	A.Mancuso	ILP formulation for surgery department management: a case study in a hospital in Naples
	R. Aringhieri	Novel applications of the team orienteering problem in health care logistics

	Marco Roma	A decomposition approach to the Clinical Pathway Deployment for chronic outpatients with comorbidity
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: P.Dell'Olmo	
	D. Romero Morales	Latest Advances in Transparent Machine Learning: A Mathematical Optimization Perspective
12:00-13:30	Session: Data Science I A9 Chair: A.Fuduli	
	B. Manca	Binary Classification via Ellipsoidal Separation
	D. Donchev	Risk Assessment in Transactions under Threat as
	E. Gorgone	Sparse Optimization in Adversarial Support Vector Machine (SVM)
	A. Fuduli	Spherical approaches for Multiple Instance Learning
13:30-15:30	Lunch	
15:30-17:00	Session: Data Science II A10 Chair: S. Gubbiotti	
	A.Sortino	An Effective Procedure for Feature Subset Selection in Logistic Regression Based on Information Criteria
	A.Consolo	Decomposition method for building randomized regression trees
	S. Gubbiotti	Optimal sample size for evidence and consensus in phase III clinical trials
		EMPTY
17:00-17:30	Coffee Break	
17:30-19:00	AIRO Meeting	
21:00-24:00	Social Dinner: Hotel Forum	

Stream B		
09:00-10:30	Session: Vehicle Routing I B8 Chair: D. Ambrosino	
	M. Paolucci	Comparing matheuristic approaches for the Electric Vehicle Routing Problem with Time Windows
	G.Macrina	Electric Vehicle Routing Problem with time-dependent electricity charging costs
	M. Bruglieri	A GRASP with penalty objective function for the Green Vehicle Routing Problem with Capacitated Fuel Stations
	D. Ambrosino	A rich vehicle routing problem in a city logistics concept
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: P. Dell'Olmo	
	D. Romero Morales	Latest Advances in Transparent Machine Learning: A Mathematical Optimization Perspective
12:00-13:30	Session: Vehicle Routing II B9 Chair: F. Errico	
	R. Montemanni	Heuristics for the Flying Sidekick Traveling Salesman Problem
	M. Di Francesco	A heuristic algorithm for a multicommodity location-routing problem
	O. Pisacane	The VRP with Mixed Fleet of Electric and Traditional Vehicles and Congestion Charge
	F. Errico	Off-line approximate dynamic programming for the vehicle routing problem with stochastic customers and demands
13:30-15:30	Lunch	
15:30-17:00	Session: Logistic III B10 Chair: G. Lanza	
	S. Stoia	A Stochastic and Dynamic Pickup and Delivery Problem with Time-Dependent Travel Times
	O. Gallay	Truck-and-Drone Parcel Delivery in the Alps
	G. Lanza	A fast heuristic approach for the assignment and sequencing storage location problem under a two levels storage policy

	V. Asta	Port Rail Shunting Optimization Problems
17:00-17:30	Coffee Break	
17:30-19:00	AIRO Meeting	
21:00-2400	Social Dinner: Hotel Forum	

Stream C		
09:00-10:30	Invited Session: Machine Learning-based optimization C8 Chair: F. D'Onofrio	
	V. Agasucci	An Actor-Critic algorithm with GNN to solve the train dispatching problem
	M. Salani	Dual-Stage Iterative Optimization Integrating Machine-Learning-Assisted QoT Estimation in Elastic Optical Networks Planning
	M. Monaci	An Actor-Critic algorithm with Deep Double Recurrent agents to solve Job Shop Scheduling
	F. D'Onofrio	Feature Selection in the diagnosis of complex diseases: an SVM Mixed Integer approach versus a SHAP driven model
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: P. Dell'Olmo	
	D. Romero Morales	Latest Advances in Transparent Machine Learning: A Mathematical Optimization Perspective
12:00-13:30	Session Energy: C9 Chair: Martina Fischetti	
	G. Micheli	Expansion Co-Planning of Electricity and Gas Systems with High Shares of Renewables and Bi-Directional Energy Conversion under Fuel and Carbon Price Uncertainty
	M. Escobar	Power network design with line activity
	M. T. Vespucci	Optimization models for the operation of active power distribution networks and their participation to the ancillary service market
	Martina Fischetti	Mathematical models for wind farm installation
13:30-15:30	Lunch	
15:30-17:00	Session: OR Applications and Experiences C10 Chair: G. Righini	
	A. Raffaele	Teaching Operations Research before University: the ROAR Experience (Part I)
	M. Benini	Planning models for crop rotation in agriculture
	A. Santini	Energy efficient automated vertical farms
	P. G. Villani	Knowledge before solutions: some reflections on a successful O.R. case
17:00-17:30	Coffee Break	
17:30-19:00	AIRO Meeting	
21:00-24:00	Social Dinner: Hotel Forum	

Stream D		
09:00-10:30	Session: Game Theory I D8 Chair: M. Sanguineti	
	M. Sinnl	Interdiction Games and Submodularity
	D. Patria	Using the Frontier Partitioner Algorithm to detect pareto-optimal solutions of portfolio optimization problems
	L. Levaggi	Properties of Stackelberg equilibria in potential games
	M. Sanguineti	Comparing Features for Detecting the Origin of Movement based on a Graph-Theoretical Cooperative Game Model
10:30-11:00	Coffee Break	
11:00-12:00	Plenary	

	Chair: P. Dell'Olmo	
	D. Romero Morales	Latest Advances in Transparent Machine Learning: A Mathematical Optimization Perspective
12:00-13:30	Invited Session: OPTSM 8 D9 Chair: L. Cadarso	
	A. Bombelli	The ground handler dock capacitated pickup and delivery problem with time windows (GHDC-PDPTW): mathematical formulations and solution method
	L. Xu	Integrated optimization of bus line planning and lane reservation
	F. Tadic	Urban traffic management - a case study of the city of Rijeka
	L. Cadarso	Airline Tail Assignment Optimization at Vueling Airlines
13:30-15:30	Lunch	
15:30-17:00	Invited Session: Robust Combinatorial Optimization D10 Chair: P. Ventura	
	J. Kurtz	New Algorithms and Complexity Results for Min-max-min Robust Combinatorial Optimization
	E. Bettiol	An oracle-based framework for robust combinatorial optimization
	Usare il video con la registrazione E. Concas	A Granular Tabu Search algorithm for the Bike Rebalancing Problem
	P. Ventura	An exact approach for the Robust Block Relocation Problem
17:00-17:30	Coffee Break	
17:30-19:00	AIRO Meeting	
21:00-24:00	Social Dinner: Hotel Forum	

Friday 17 September

Stream A

09:00-10:30	Session: Data Science III A11 Chair: A. Astorino	
	R. Guido	Hyper-Parameter Optimization in Support Vector Machine on unbalanced datasets using Genetic Algorithms
	E. Amaldi	On sparse randomized classification trees
	M. Sudoso	SOS-SDP: an Exact Solver for Minimum Sum-of-Squares Clustering
	A. Astorino	Polyhedral separation in Multiple Instance Learning problems
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: N. Ricciardi	
	T. G. Crainic	Planning Many-to-One-to-Many Freight Transportation Systems with Shared Resources
12:00-13:30	Session: Optimization and complexity A12 Chair: P. Hosteins	
	N. Zufferey	Local Search for Aircraft-Landing Planning
	A. Cambier	Optimal scheduling of an upon-request passenger transport service through electric autonomous vehicles
	P. Hosteins	Complexity of the Multilevel Critical Node Problem
		EMPTY
13:30-14:00	Closing Session	

Stream B

09:00-10:30	Session: Scheduling B11 Chair: F. Della Croce	
	A. Agnetis	Time-critical testing and search problems
	R. Ronco	Scheduling on Identical Parallel Machines with Time-of-Use Costs

	L. Yang	Integrated Backup Rolling Stock Allocation and Timetable Rescheduling with Uncertain Time-Variant Passenger Demand Under Disruptive Events
	L. Di Rocco	Scheduling K-mers Counting in a Distributed Environment
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: N. Ricciardi	
	T.G.Crainic	Planning Many-to-One-to-Many Freight Transportation Systems with Shared Resources
12:00-13:30	Invited Session: Advances in Variational Inequalities and Equilibrium Problems B12 Chair: P. Daniele	
	G. Colajanni	Multi-layer 5G network slicing with UAVs: an optimization model
	A.Marcianò	Infinite dimensional duality and applications to equilibrium
	F. Raciti	A variational inequality approach to a class of network games with local complementarities and global congestion
	D. Sciacca	A two-stage variational inequality formulation for a game theory network model for hospitalization in critic scenarios
	G. Fargetta	Closed-Loop Supply Chain Network Equilibrium with online second-hand trading
13:30-14:00	Closing Session	

Stream C		
09:00-10:30	Session: Supply Chain and Service Systems C11 Chair: L. Rarità	
	G. Righini	Design and optimization of a regional buffalo milk supply chain: a case study
	B. Bolsi	Optimizing a dynamic outpatient facility system with multiple servers
	R. Zanotti	A Dynamic Home Healthcare problem with Consistency Constraints
	L. Rarità	A genetic algorithm to optimize dynamics of supply chains
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: N. Ricciardi	
	T. G. Crainic	Planning Many-to-One-to-Many Freight Transportation Systems with Shared Resources
12:00-13:30	Session: AiroYoung APRE C12 Chair: V. Morandi	
	Speakers: M. Ferraro (APRE), F. Grandoni (IDSIA USI-SUPSI)	
13:30-14:00	Closing Session	

Stream D		
09:00-10:30	Invited Session: Networks Performance and Reliability D11 Chair: M. Sanguineti	
	Y. Hadas	Braess paradox via Shapley value
	M. Gaggero	Strategic and tactical optimization of distribution networks for perishable products
	R. Metulini	A functional approach for traffic flows large data reduction
	M. Passacantando	A network centrality measure based on the equilibrium social welfare in network games
10:30-11:00	Coffee Break	
11:00-12:00	Plenary Chair: N. Ricciardi	
	T. G. Crainic	Planning Many-to-One-to-Many Freight Transportation Systems with Shared Resources
12:00-13:30	Session: EMPTY Chair:	
		EMPTY
		EMPTY

		EMPTY
		EMPTY
13:30-14:00		Closing Session