



Conference Program

Monday – Plenary I

9:00–10:00

Dick den Hertog

Title: Optimization for a Better World

Chair: Cristina Requejo

Room: CGD (Floor 2)

MA

10:30–12:10

MA1: Routing I

Chair: Leonor S. Pinto

Room: Amplit. 1 (Floor 4)

Valentina Bonomi **Evaluating Hybrid Home Delivery and Self-Collection Strategies in Two-Echelon Urban Logistics**

Andrea Mor **Safety-Aware Order Picking and Routing in Shared Human-Robot Warehouses**

Raquel Bernardino **The Precedence Constrained Family Traveling Salesman Problem**

MA2: Optimization and Wildfire Management

Chair: Isabel Martins

Room: Amplit. 2 (Floor 4)

Organizer: Filipe Alvelos & Isabel Martins

Ryne Reger **Predictive and Prescriptive Analytics toward Optimizing Wildfire Suppression**

Valentina Chiussi **Optimization Models and Methods for Wildfire Asset Protection**

Marta Barreiro **Optimal dispatch of firefighting aircraft in wildfire management**

Filipe Alvelos **Distributionally robust optimization for wildfire response preparedness**

MA3: Statistics & Optimization

Chair: José Santos

Room: CTT (Floor 3)

Aditya Sharma	Efficient Recursive Mode Estimation with Stochastic Approximation
Alessandro Barbiero	Latent t Models for Ordinal Data: Likelihood Inference beyond the Multivariate Normal
Asmerilda Hitaj	Robust bi-objective mean-CVaR portfolio selection: applications to energy sector
José Santos	The effect of asymmetric risk measures in portfolio optimization

MA4: Team Scheduling

Chair: Ricardo Saldanha

Room: Delta (Floor 3)

Chahid Ahabchane	Physician Scheduling Problem with Emphasis on Workload Balancing
Sergo Tsiramua	Optimal Selection and Management of Reliable and Resilient Teams Based on Multifunctional Personnel
Maria Tovar	Scheduling crew reserve duties with flexible times
Ricardo Saldanha	Producing Cost-effective and Robust Schedules for Train Drivers and Guards with Optimization and Stochastic Simulation

MA5: Large Scale Constrained Optimization Problems

Chair: Nataša Krejic

Room: Santander (Floor 3)

Organizer: Nataša Krejic

Luís Bueno	A general merit function-based global convergent framework for nonlinear optimization
Ricardo Ferreira	CLASP: Online Learning algorithms for convex losses and squared penalties
Nataša Krejic	Ipas: An Adaptive Sample Size Method for Weighted Finite Sum Problems with Linear Equality Constraints

MA6: Applications and Algorithms for Bilevel Optimization

Chair: Margarida Carvalho

Room: Staples (Floor 3)

Organizer: Margarida Carvalho

Inês Soares	A hybrid PSO–MILP approach for bilevel multi-follower optimization of demand-side flexibility aggregation
Maria João Santos	A Bilevel Optimization Framework for Incentive Design in One-Way Car-Sharing Systems
Margarida Carvalho	Embedded dynamic programming for bilevel pricing problems

Monday – Plenary II

14:00–15:00

Boglárka G-Tóth

Title: Advanced Hybrid Quantum Optimization Frameworks

Chair: Paula Amaral

Room: CGD (Floor 2)

MB

15:10–16:25

MB1: Routing in Healthcare

Chair: Pedro Martins

Room: Amphit. 1 (Floor 4)

- | | |
|-----------------|--|
| Mafalda Ponte | A Matheuristic for the Traveling Salesman Problem with positional consistency |
| Paola Cappanera | Decomposition algorithms for an Integrated Home Health Care Planning Problem |
| Pedro Martins | Intertwined vehicle routing problem for home healthcare services |

MB2: Optimization for Machine Learning

Chair: Paula Amaral

Room: Amphit. 2 (Floor 4)

Organizer: Paula Amaral

- | | |
|--------------|---|
| David Santos | Anomaly Detection and Root Cause Analysis of Retainability Contextual Anomalies in Radio Access Networks |
| Tiago Dias | A classification method based on a cloud of spheres |
| Paula Amaral | Non Linear Support Vector Machine for Interval-valued Data |

MB3: Supply Chain

Chair: Isabel Correia

Room: Delta (Floor 3)

- | | |
|-----------------|--|
| Andrea Pro-Nuño | Environmental Impact Optimization of the Soy Supply Chain: A Case Study of the Mexican Food Restaurant Industry |
| Miguel Chastre | Joint Optimization of Schedule and Inventory Replenishment Policy |
| Isabel Correia | Multi-period supply chain network design with disruption risk: A bi-objective stochastic approach |

MB4: Derivative-Free Optimization I

Chair: Everton Silva

Room: Santander (Floor 3)

Organizer: Everton Silva & Yiwen Chen

Dânâ Davar	A Finite-Difference Trust-Region Method for Convexly Constrained Smooth Optimization
Fábio Fortunato	A KKT-Free Augmented Lagrangian Method for Hydraulic Problems
Ana Luísa Custódio	Nonlinear Derivative-free Constrained Optimization with a Penalty-Interior Point Method and Direct Search

MB5: Multiobjective Optimization

Chair: Daniel Santos

Room: Staples (Floor 3)

Ricardo João	Forecast Adjustment in Multicriteria Analysis Using Parameterisable Functions
Robert Hlavatý	Designing Conflict-Free Allocations: A Structural Optimization Approach to Fair Division
Margarida Abreu	Comparison of epsilon-constraint algorithms for a bi-objective CVRP

MC1: Optimization Methods for Rich Routing Problems**Chair:** Telmo Pinto**Room:** Amplit. 1 (Floor 4)**Organizer:** Cláudio Alves

Mário Leite	Exploring New Sequential and Parallel Variable Neighborhood Search Algorithms for the Pollution Routing Problem
José Valério Carvalho	Column Generation Algorithm for the Prisoner Transportation Problem
João Martins	A Bilevel Approach for Production Routing Problems
Telmo Pinto	Bi-level Optimization of Integrated Production and Routing under Carbon Pricing

MC2: Diversity in Network Optimization**Chair:** Marta Pascoal**Room:** Amplit. 2 (Floor 4)**Organizer:** Marta Pascoal & Maria Teresa Godinho

Maria Teresa Godinho	Enhancing the resilience of telecommunication networks through geodiversification
Maddalena Nonato	Risk Reduction vs. Fair Cost Allocation: Rethinking Gateway Policies for Hazmat Transport
Marta Pascoal	The bi-objective problem of finding K shortest and dissimilar paths: models and algorithm
João Gouveia	An integer linear programming reformulation for optimizing pairwise overlaps

MC3: Scheduling I**Chair:** Dalila Fontes**Room:** Delta (Floor 3)**Organizer:** Dalila Fontes

Fábio Moreira	Beyond Myopic Plans: Learning Policy Parameters for MDP-based Workforce Scheduling
Nuno Marques	Learning Interpretable Dispatching Rules with AI for a Large-Scale Maintenance Provider
Flávia Barbosa	Deterministic Scheduling of Time-Based Preventive Maintenance under Calendar and Usage Intervals
Dalila Fontes	Integrated Production and Transportation Scheduling with Multi-Load AGVs

MC4: Geometry and Regularization in Nonconvex Optimization

Chair: Orizon Ferreira

Room: Santander (Floor 3)

Organizer: Orizon Ferreira

Sandor Németh	Why Study Spherical Convexity of Non-Homogeneous Quadratics and What Makes It Surprising?
Max Leandro Gonçalves	Subsampled cubic regularization method with distinct sample sizes for function, gradient, and Hessian
Jefferson Melo	A Cubic Regularization Method for Multiobjective Optimization
Orizon Pereira	A subdifferential characterization via Busemann functions and applications to DC optimization on Hadamard manifolds

MC5: Applications I

Chair: Fernando Fontes

Room: Staples (Floor 3)

Michael Bendersky	Artillery Firing Shift with Two Registration Targets
Joyce Caetano	Optimizing Power Hubs and Subsea Connections in Pre-Salt Offshore Fields
Behzad Amirsalari	Automated Design Framework for High-Efficiency Airfoils Using CFD-Synchronized Nelder–Mead Optimization
Fernando Fontes	A Metaheuristic Approach for Joint Layout and Power Smoothing in Airborne Wind Energy Farms

Tuesday – Plenary III

9:00–10:00

Claudia Archetti

Title: Exact approaches for colorful components problems based on representative formulations

Chair: Luís Gouveia

Room: CGD (Floor 2)

TA

10:30–12:10

TA1: Routing II

Chair: Ana Paias

Room: Amphit. 1 (Floor 4)

- | | |
|-------------------|--|
| Tomás Kapancioglu | An iterated local search algorithm for the traveling purchaser problem |
| Nizar Zaarour | Optimal policies for the collection and transportation of product returns |
| Sofia Henriques | A matheuristic and a hybrid algorithm for the asymmetric period travelling salesman problem |
| Daniel Santos | General formulation framework for combined subtour and path elimination constraints in multi-depot routing problems |

TA2: Environment, Agriculture and Forestry

Chair: Miguel Constantino

Room: Amphit. 2 (Floor 4)

Organizer: Marta Mesquita & Miguel Constantino

- | | |
|--------------------|--|
| Mauro Barros | A Machine learning approach for estimating fireline construction rates using geospatial, meteorological and operational data |
| Adelaide Cerveira | Optimization of harvest scheduling under clearcut area and clearcut proximity constraints |
| Miguel Constantino | Designing resilient forest road networks for wildfire response |

TA3: Non-Linear Programming

Chair: Humberto Rocha

Room: CTT (Floor 3)

- | | |
|-------------------|---|
| Alexandra Moura | Dependence and moral hazard constraints in optimal reinsurance design |
| Najeeb Abdulaleem | The ℓ_1 exact E-penalty function method for constrained non-convex optimization problems |
| Antonio Sasaki | Symmetric gauge theory for cutting-plane methods in semidefinite programming |
| Humberto Rocha | On polling directions for randomized direct-search approaches |

TA4: Maritime Transportation and Port Logistics

Chair: Filipe Rodrigues

Room: Delta (Floor 3)

João Ciola	An Integrated Agent-Based and Optimisation Approach for Evaluating Lock Performance Under Convoy Splitting: The Case of the Bariri Lock
José Moreira	Truck Scheduling for Congestion Mitigation in Container Terminals
Sebastião Pinto	Multi-Objective Optimization of Container Transportation in Multi-Depot Logistics Networks
Filipe Rodrigues	Integrated Scheduling of AGVs and Yard Cranes Considering Charging Decisions

TA5: Derivative-Free Optimization II

Chair: Everton Silva

Room: Santander (Floor 3)

Organizer: Everton Silva & Yiwen Chen

Evelin Krulikowski	A Hybrid Direct Multisearch and Projected Simplex Gradient Method for Multiobjective Problems on Convex Sets
Luis Nunes Vicente	Pareto sensitivity, most-changing sub-fronts, and knee solutions
Giampaolo Liuzzi	Worst-case complexity analysis of derivative-free methods for multi-objective optimization
Everton Silva	A Direct Multisearch Approach (DMS) for Many-Objective Derivative-Free Optimization

TA6: Decision Models

Chair: Anett Rácz

Room: Staples (Floor 3)

Margarida Sousa	Workforce Planning in the Portuguese Navy: A Linear Programming Approach
Dong Li	Choice-based Availability Controls for Urban Carsharing Revenue Management
Miguel Pereira	Endogenous identification of worst-practice frontiers in hospital efficiency: An inverted value efficiency approach
Anett Rácz	Selected methods for reducing inconsistency in pairwise comparison matrices

Tuesday – Plenary IV

14:00–15:00

Tom Van Woensel

Title: Two-Echelon Vehicle Routing Problems: A short review, some models and directions for future research

Chair: Filipe Alvelos

Room: CGD (Floor 2)

TB

15:10–16:25

TB1: Arc Routing

Chair: Raquel Bernardino

Room: Amplit. 1 (Floor 4)

André Mendes **Patrolling the Amazon River Navigation Network**

Isaac Plana **Branch-and-Cut and Kernel Search Methods for the Periodic Drone Arc Routing Problem with Irregular Services and Maximum Benefit**

Leonor Pinto **Planning the Inspection of Electric Lines with Drones**

TB2: Optimization in Graphs

Chair: Daniela Santos

Room: Amplit. 2 (Floor 4)

Organizer: Daniela Santos

Andreia Guerreiro **Solver-Independent Computational Modelling of the Clique-Partitioning Problem**

Md Shahrukh Anjum **Cardinality-Based Extended Formulations and Cutset Inequalities for the Steiner Tree Problem**

Daniela Santos **Ensuring Connectedness in the Multiobjective Quasi-Clique Problem**

TB3: Integer Programming

Chair: Lígia Amado

Room: Delta (Floor 3)

Danilo Amitrano **A Classification-based Heuristic Approach for The Covering Tour Problem with path Upgrades**

Gonçalo Cunha **Cyclic Exchange Heuristics for the Hamiltonian p-Median Problem**

Francisco Canas **New valid inequalities and projection results for the Hamiltonian p-Median problem**

TB4: Derivative-Free Optimization III

Chair: Yiwen Chen

Room: Santander (Floor 3)

Organizer: Everton Silva & Yiwen Chen

Timothé Taminiau	Riemannian optimization with finite-difference gradient approximations
Wei Hu	BUP-TR: A Bayesian Underdetermined Projection Framework for Interpolation-Based Trust-Region Optimization
Yiwen Chen	Subspace Modeling and Random Subspace Trust-region Methods in Derivative-free Optimization

TB5: Optimization in Radiotherapy

Chair: Guillermo Cabrera-Guerrero

Room: Staples (Floor 3)

Mauricio Moyano	Pareto Surface Navigation for Direct Aperture Optimisation in Radiotherapy
Nicolle Ojeda-Ortega	NSGA-II for Multi-Objective Beam Angle Optimisation in IMRT
Guillermo Cabrera-Guerrero	Robust Multi-objective Optimisation of Positively Homogeneous Functions with Application to Radiotherapy

TC

17:00–18:15

Hexaly Semi-Plenary

Speaker: Thierry Benoist

Title: Beyond traditional MIP

Chair: Cândida Mourão

Organizer: Hexaly

Room: Amplit. 1 (Floor 4)

TC1: Applications II

Chair: Eliana Costa e Silva

Organizer: Isabel Gomes

Room: Amplit. 2 (Floor 4)

Nuno Lopes	Minimizing costs in signal provision by communication antennas along a railway line
Isabel Lopes	Route Optimisation for Sales Teams in the Agricultural Equipment Sector in Brazil
Eliana Costa e Silva	Who (What) is Replenishing the Supermarket Shelves? Optimization of Hybrid Human–Robot Operations

TC2: Derivative-Free Optimization IV

Chair: Yiwen Chen

Organizer: Everton Silva & Yiwen Chen

Room: Delta (Floor 3)

Edward Hallé-Hannan	Surrogate-based categorical neighborhoods for mixed-variable blackbox optimization
Gabriel Jarry-Bolduc	The quest for descent directions
Rohollah Garmanjani	NoMoDS: A non-monotone directional direct-search algorithm with worst-case complexity analysis

Wednesday – Plenary V

9:00–10:00

Gabriele Eichfelder

Title: Beyond a Single Optimum: Trade-offs and Insights in Multiobjective Optimization

Chair: Ana Luísa Custódio

Room: CGD (Floor 2)

WA

10:30–12:10

WA1: Production Inventory Routing

Chair: Rafael Martinelli

Room: Amplit. 1 (Floor 4)

- | | |
|-------------------|--|
| Francisco Maia | Balancing inventory and routing in stochastic dynamic inventory-routing: An application to pharmaceutical distribution |
| Claudio Gentile | Robust Optimization algorithms for Multi-Supplier Purchase Planning under Lead Time Uncertainty |
| Xinyue Hao | A multi-stage risk-averse stochastic programming algorithm for the perishable production-inventory-routing problem under demand uncertainty |
| Rafael Martinelli | A Hybrid Genetic Search for the Inventory Routing Problem |

WA2: Optimization & AI

Chair: Miguel Anjos

Room: Amplit. 2 (Floor 4)

- | | |
|--------------------------|--|
| Klauss Pavani | Hybrid Surrogate for Maximum Throughput determination in Natural Gas Treatment Units |
| Atefeh Hemmati Golsefidi | Learning Decision-Relevant Scenarios for Two-Stage Stochastic Optimization Using Deep Generative Models |
| Miguel Anjos | Unboundedness in Bilevel Optimization |

WA3: Network Optimization

Chair: Agostinho Agra

Room: CTT (Floor 3)

- | | |
|-----------------|---|
| Tonguç Ünlüyurt | Efficient testing of connectivity of a network |
| Juan Mesa | Multilayer Covering Network Design Problems |
| Agostinho Agra | Interdiction models for graph propagation |

WA4: Scheduling II

Chair: Cristina Requejo

Room: Delta (Floor 3)

- | | |
|------------------|--|
| Atanu Maji | Repair sequence problem of electrical transmission networks under uncertainty |
| Ulrike Ritzinger | Optimizing drone-sharing service through flexible hub relocation and mission pooling |
| Yang-Kuei Lin | Parallel machine scheduling with multiple orders per job and batching |
| Wimmer Michael | A comparative study on models for optimizing tardiness on parallel machines with sequence-dependent setup times and an extension by special jobs with external delivery dates |

WA5: Global Optimization

Chair: Ana Rocha

Room: Santander (Floor 3)

Organizer: Ana Rocha

- | | |
|------------------|--|
| Attilio Marcianò | A Variational Model for Equilibrium Problems in Cloud Data Centers |
| Laura Scrimali | Equilibrium Models for Global Optimization in Pharmacy Networks |
| Eligius Hendrix | On polytopal spatial branch and bound |
| Ana Rocha | On Augmented and Penalty Weighted Tchebycheff Scalarizing Functions for Multiobjective Optimization |

WA6: Applications III

Chair: Ana Rodrigues

Room: Staples (Floor 3)

- | | |
|--------------------------|---|
| Ali Ghavamifar | Designing Telemedicine Clinic Networks for Rural Follow-Up Care |
| Afonso Cruz
Fernandes | A Simulation Framework for the Multi-Period Vehicle Routing Problem with Profits in Smart Waste Collection |
| Elif Göksu Öztürk | Reducing the Carbon Footprint of Multi-Compartment Vehicles |

Wednesday – Plenary VI

14:00–15:00

Adam Letchford

Title: Some Thoughts on Duality in Continuous and Discrete Optimisation

Chair: Luís Gouveia

Room: CGD (Floor 2)