

SCIENTIFIC PROGRAM

Wednesday, September 5

Wednesday, 15:00 - 16:00

Plenary talk (room 23.1.6):

Alexandre Dolgui. *Combinatorial Design of Paced Production Lines in Machining Environment*

Chair: José Fernando Oliveira

Wednesday, 16:30 - 18:20 (W)

W1 (room 23.3.4): EstudIO – SISCOG * (Organization: Joana Dias)

Chair: Joana Dias

- José Pedro Silva, Beatriz Brito Oliveira, José Fernando Oliveira. *Sistema de apoio à decisão para decisões online de atribuição de preços e gestão de frota em empresas de aluguer de automóveis*
- Luísa Lubomirska, Inês Marques. *Reallocating Operating Room Time among Surgical Services*
- Mariana J. Patrão, Inês Marques, Ana Barbosa-Póvoa. *Analysis of surgical processes in the central operating theatre - centro hospitalar Lisboa Norte*
- Lourenço Cruz, Ana Barbosa-Póvoa. *Design and Planning of Agri-Food Supply Chains*
- Ana Margarida Araújo, Inês Marques, Ana Barbosa-Póvoa. *Blood supply chain planning: the Portuguese Case*

W2 (room 23.3.5): Continuous Optimization: joint Session APDIO-SEIO (Organization: Tatiana

Tchemisova and Margarita Rodríguez Álvarez)

Chair: Tatiana Tchemisova

- Margarita Rodríguez Álvarez and José Vicente Pérez. *On Finite Linear Systems Containing Strict Inequalities*
- Paula Amaral. *From applications to methods for constrained fractional quadratic problems*
- Maria Dolores Fajardo and Jose Vidal. *Converse and total duality for evenly convex optimization problems*
- Ana Luísa Custódio, Jéssica Morais and Gonçalo Marques. *Calibration of parameters in Dynamic Energy Budget models using Direct-Search methods*
- Tatiana Tchemisova. *On a new approach to optimality in Copositive Programming*

W3 (room 23.3.9): Supply Chain and Production Management I *

Chair: Margarida Vaz Pato

- João Pires Ribeiro and Ana Barbosa-Póvoa. *Supply Chain Resilience: An optimisation model to identify the relative importance of SC disturbances*
- Ana Teixeira, Eliana Costa e Silva and Isabel Cristina Lopes. *Supply chain purchasing domain optimization in a Portuguese retail company*
- Luís Girão, Gonçalo Figueira and Mário Amorim-Lopes. *On the selection of the best distribution for inventory management of intermittent demand items in healthcare*
- Xavier Andrade, Luís Guimarães and Gonçalo Figueira. *Managing the product line: bridging marketing and operations*
- Margarida Pato, Carlos Martins and Teresa Melo. *Um modelo tri-objetivo para redesenho da rede de uma cadeia de abastecimento de bancos alimentares*

W4 (room 23.3.10): Logistics and Allocation problems

Chair: José Soeiro Ferreira

- Maria Alice Trindade, Maria Rosário Alves Moreira and Paulo Sérgio Amaral de Sousa. *Layout Optimization for a real world stock warehouse - The non-food sector*
- Galrão Ramos, Elsa Silva, Pedro Lopes and Pedro Ribeiro. *The manufacturer's pallet loading problem with stability and complexity constraints – A case study*
- Manuel V.C. Vieira. *The container loading problem in a shoes manufacturer*
- Luís Souto, Teresa Bianchi-Aguiar and José Fernando Oliveira. *Optimizing shelf space allocation under merchandising rules*

W5 (room 23.3.14): Multicriteria Decision Making – Applications *

Chair: José Rui Figueira

- Ana Vieira Vieira, Mónica Oliveira, João Bana e Costa and Carlos Bana e Costa. *Enhancing participatory decision-making in Energy through the ENERPHI platform*
- Mafalda Prazeres, José Rui Figueira and Rui Marques. *MCDA approach for the supplier selection in the healthcare units in Portugal: the case of heavy medical equipment*
- Carolina Correia Ferreira and Maria Isabel Gomes. *Framework for the purchasing of radiology medical equipment using QFD and MCDA*
- Gabriela Oliveira and Luís C. Dias. *Difusão de veículos de combustível alternativo considerando preferências dinâmicas*
- Ana Sara Costa, Isabella Maria Lami, Salvatore Greco, José Rui Figueira and José Borbinha. *Housing assignment of migrants in Turin: A multiple criteria approach*

W6 (room 23.3.15): Risk management and uncertainty modeling *

Chair: Mário Amorim Lopes

- Miguel Vieira, Helena Paulo, Tânia Pinto-Varela and Ana Barbosa-Póvoa. *Conditional Value at Risk (CVaR) as a risk measure to support industrial plant design and scheduling decisions under demand uncertainty*
- Nuno Falcão e Cunha, Thiam-Soon Gan, Pedro Amorim, Bernardo Almada-Lobo and Martin Grünow. *Robust Supply Chain Design under Supplier Integration Uncertainty*
- Filipe Rodrigues, Agostinho Agra, Lars Magnus Hvattum and Marielle Christiansen. *Comparing approaches in Maritime Inventory Routing Problem with uncertainty*
- Abílio Pereira Pacheco and João Claro. *Cohesive forest fire management in its socioecological context: intra-annual optimization of the prevention and suppression investment mix under uncertainty*
- Mónica Oliveira, Marta Barbas, Ana Barbosa-Póvoa, Mariana Raposo, António Alvarenga, Marco Alves and Mário Amorim-Lopes. *Enhancing optimization planning models for health human resources management through scenario planning*

Thursday, September 6

Thursday, 09:30 - 11:00 (TA)

TA1 (room 23.3.4): DEA and Performance Analysis I *

Chair: Clara Bento Vaz

- Diogo Ferreira and Rui Marques. *Hospitals funding: Optimizing tariffs for health care systems sustainability*
- Elvira Silva, Pedro Macedo and Isabel Soares. *An alternative benchmarking approach for electricity utility regulation using maximum entropy*

- Mário Couto and Ana Camanho. *Performance Evaluation of European Power Systems using Data Envelopment Analysis*
- Clara Bento Vaz and Ângela Paula Ferreira. *Environmental performance assessment of European Countries*

TA2 (room 23.3. 5): Economics, Finance and Game Theory

Chair: João Paulo Almeida

- Alexandra Borges, Dalila B.M.M. Fontes and José Fernando Gonçalves. *Modeling supply chain network: a need to incorporate financial considerations*
- Sandra Caçador, Joana Dias and Pedro Godinho. *Robust portfolio optimization with minimax regret: a new model and a new methodology for calculating relative-robust solutions*
- João Almeida and Alberto Pinto. *Location-Price competition in a network under uncertainty on costs*

TA3 (room 23.3.9): Fleet Management and Transportation *

Chair: Maria João Alves

- Ricardo Bertoluci, Galrão Ramos, Manuel Lopes and João Bastos. *Capacitated vehicle routing problem with heterogeneous fixed proprietary fleet and outsourcing delivery - A clustering-based approach*
- Ana Moura. *An approach to solve the Capacitated Simultaneous Delivery and Pick-up Problem*
- Beatriz Brito Oliveira, Maria Antónia Carravilla, José Fernando Oliveira and Alysson M. Costa. *Stochastic capacity-pricing problem in car rental: co-generating solutions and scenarios*
- Filipe Monnerat, Maria João Alves and Joana Dias. *Afetação de veículos e motoristas na gestão de viagens de serviço numa Universidade Brasileira*

TA4 (room 23.3.10): Logistics in Healthcare *

Chair: Maria Eugénia Captivo

- Hendrik Vermuyten, Joana Namorado Rosa, Inês Marques, Jeroen Beliën and Ana Barbosa-Póvoa. *A Column Generation-based Diving Heuristic for Staff Scheduling at an Emergency Medical Service*
- José Nelas and Joana Dias. *Localização ótima de ambulâncias: uma abordagem tendo em conta hierarquia e substituíbilidade de recursos.*
- Ana Maria Rodrigues, Luís Miguel Bandeira and José Soeiro Ferreira. *Setorização aplicada ao transporte de utentes não urgentes entre residências e centros hospitalares*
- Maria Eugénia Captivo, Carolina Martins and Raquel Sousa. *Heuristics for scheduling elective surgeries in a Public hospital*

TA5 (room 23.3.14): Metaheuristics for Scheduling Problems *

Chair: Ana Barbosa Póvoa

- Cristiane Ferreira, Francisco Machado, Gonçalo Figueira and Pedro Amorim. *Parallel Machine Scheduling in 'Human-Robot Collaboration' Assembly Environments*
- Isabela Maganha, Marcel da Silva Van Der Kroef, Cristóvão Silva and Nathalie Klement. *A hybrid methodology for jobs scheduling on a reconfigurable assembly line*
- Nelson Chibeles-Martins and Mónica Lencastre. *Modelação e Otimização de um problema operacional de re-escalonamento de impressões*
- Joana Guapo, Miguel Vieira, Tânia Pinto-Varela and Ana Barbosa-Póvoa. *Escalonamento de linhas de produção flexíveis com utilização de robots*

TA6 (room 23.3.15): Data Mining and Data Analysis *

Chair: Gonçalo Figueira

- Maria Teresinha Steiner, Amanda Trojan Fenerich, Pedro José Steiner Neto, Edevar André Tochetto, Diego Paolo Tsutsumi and Fernanda Medeiros Assef. *Use of Machine Learning Techniques in the Banking Credit Risk Analysis*
- Anabela Costa, Filipe Ramos, Diana Mendes and Vivaldo Mendes. *Forecasting financial time series: a comparative study*
- Maria Teresinha Steiner, Fernanda Medeiros Assef, Pedro José Steiner Neto, David Gabriel de Barros Franco, Edevar André Tochetto and Amanda Trojan Fenerich. *Classification Algorithms in Financial Application: Credit Risk Analysis on Companies*
- Carlos Alves, Sofia Cruz Gomes, Luís Girão, Gonçalo Figueira and Mário Amorim-Lopes. *Demand forecasting in a multi-specialty hospital setting: a comparative study of machine learning and classical statistical methods*

Thursday, 11:30 - 13:20 (TB)

TB1 (room 23.3.4): Inventory Management

Chair: Agostinho Agra

- Gerrit K. Janssens and Katrien Ramaekers. *Semi-variance as a safety stock calculation principle*
- Thomy Eko Saputro, Gonçalo Figueira and Bernardo Almada-Lobo. *An Integrated Model of Supplier Selection and Inventory Problem under Supply Disruption*
- Gonçalo Figueira, Willem van Jaarsveld, Pedro Amorim and Jan Fransoo. *Evaluating the impact of committing to customer orders in online retail*
- Agostinho Agra, Cristina Requejo and Filipe Rodrigues. *Robust approaches to inventory models*
- Manuel Marques, Paulo Sousa, Raquel Vieira, Pedro Schuller and José Oliveira. *A Decision Support System for the Definition of a Mixed Make-to-Stock/Make-to-Order Production Strategy*

TB2 (room 23.3.5): Discrete Optimization and graphs - Applications *

Chair: Filipe Alvelos

- Flávia Barbosa, José Fernando Oliveira, Maria Antónia Carravilla and Eduardo Curcio. *A Benders Decomposition Algorithm for the Berth Allocation Problem*
- Fábio Oliveira, Filipe Alvelos and Ana Viana. *Políticas de teste de compatibilidade a priori em programas de doação renal cruzada*
- Telmo Matos, Fábio Maia and Dorabela Gamboa. *A Dual-RAMP Algorithm for the Uncapacitated Multiple Allocation Hub Location Problem*
- Fábio Barbosa, Agostinho Agra and Amaro de Sousa. *Critical Node Detection with Connectivity based on Bounded Path Lengths*
- Filipe Alvelos. *Modelos de Programação Inteira Mista para Combate a Fogos Florestais*

TB3 (room 23.3.9): Scheduling in Industry *

Chair: Ana Moura

- Maria de Fátima Pilar, Eliana Costa e Silva and Ana Borges. *Automobile Repair Scheduling: a Real Case*
- Nicolau Santos, Gonçalo Figueira and João Pedro Pedroso. *Monte Carlo tree search for the flexible job shop with multiple process plans*
- Denise Ferreira and Carina Pimentel. *Modelo de programação inteira mista para um problema de escalonamento da produção da indústria cerâmica*
- Helena Sofia Rodrigues and Arminda Pata. *Otimização de seleção de pessoas: estudo de caso numa linha de montagem de bicicletas*
- Ana Martins and Ana Moura. *Balanceamento e otimização de linhas de montagem*

TB4 (room 23.3.10): OR in Health and Life Sciences

Chair: João Luís Miranda

- Diana F. Lopes, Jorge Simões and Eduardo A. Castro. *Health workforce needs in Portugal*
- Edgar Sanches Mascarenhas, Bernardo Almada-Lobo and Mário Amorim Lopes. *Home Hospitalization Planning: a systematic review*
- Tiago Monteiro, João Pedro Pedroso, Xenia Klimentova and Ana Viana. *Reinforcement Learning for Robust Programming: an Application in Kidney Exchange*
- Sofia Cruz-Gomes, Mário Lopes and Bernardo Almada-Lobo. *The demand for healthcare services and resources: patterns, trends and challenges in healthcare delivery*
- João Luís Miranda. *A Glance on New European S&T Challenges: The COST Action "Medicines Shortages" (CA15105) in Portugal*

TB5 (room 23.3.14): Multiobjective Optimization I *

Chair: Carlos Henggeler Antunes

- Humberto Rocha, Joana Dias, Tiago Ventura, Brígida Ferreira and Maria do Carmo Lopes. *Optimização Angular no Planeamento de Tratamentos de Radioterapia: a importância da escolha da função objectivo na exploração do espaço de soluções*
- Nuno Sousa, Luís Alçada-Almeida and João Coutinho-Rodrigues. *Modelação biobjectivo para renovação de infraestruturas multicomponente*
- João N.C. Gonçalves, M. Sameiro Carvalho and Lino Costa. *Improving inventory management in an automotive supply chain: a multi-objective optimization approach using a genetic algorithm*
- Teresa Neto, Miguel Constantino, Isabel Martins and João Pedro Pedroso. *Um método multi-objetivo de pesquisa em árvore Monte-Carlo para problemas de gestão florestal com restrições ambientais*

Thursday, 15:00 - 16:00

Plenary talk (room 23.1.6):

Bernardo Almada-Lobo. *Boosting the Practice of Prescriptive Analytics*

Chair: Luís C. Dias

Thursday, 16:00 - 17:30 (TC)

TC1 (room 23.3.4): Decision Support Systems *

Chair: Ana Raquel Xambre

- Leandra Pinho and Ana Moura. *Otimização do processo de tomada de decisão para o planeamento de compras*
- Eduardo Curcio, Ana Sofia Figueiredo, Pedro Amorim and Antônio Carlos Moretti. *Scheduling optimization for an animal-feed company*
- Francisco Amorim, Bruno Batista, Paulo Pereira, Pedro Campelo, Pedro Amorim and Vera Miguéis. *Optimizing customer response to direct marketing initiatives*
- Ana Raquel Xambre. *Specification of a decision support system for layout design in a complex manufacturing environment*

TC2 (room 23.3.5): Simulation and Optimization *

Chair: Maria Isabel Gomes

- David Antunes, Vikrant Vaze and António Antunes. *Simulating Airline Daily Operations: Schedule Recovery and Airline Behavior*
- Diogo Miranda, Ricardo Cunha, José Queiroga, Teresa Bianchi-Aguiar, Bernardo Almada-Lobo and José Luís Borges. *Combining Optimization-Simulation to Increase Checkout Efficiency*
- Andreia Santos, Ana Barbosa-Póvoa and Ana Carvalho. *Uncertainty Analysis in Environmental Life Cycle Assessment - A Case Study Comparing Two Pulp Bleaching Options*
- Mafalda Neiva and Maria Isabel Gomes. *Simulação do fluxo de pacientes num serviço hospitalar de Radiologia*

TC3 (room 23.3.9): Supply Chain and Production Management II

Chair: Cláudio Alves

- Cátia Barbosa, Nuno Falcão E Cunha, Carlos Malarranha, Telmo Pinto, Ana Carvalho, Pedro Amorim, M. Sameiro Carvalho, Américo Azevedo, Susana Relvas, Tânia Pinto-Varela, Ana Barros, Filipe Alvelos, Cláudio Alves, Jorge Pinho de Sousa, Bernardo Almada-Lobo, José Manuel Valério De Carvalho and Ana Barbosa-Póvoa. *Towards an Integrated Framework for Aerospace Supply Chain Sustainability*
- Luís Guimarães, Manuel Díaz-Madroñero and Bernardo Almada-Lobo. *On the integration of renewal projects with capacity planning*
- Miguel Vieira, Samuel Moniz, Tânia Pinto-Varela and Ana Barbosa-Póvoa. *A hybrid optimization-simulation solution for the planning and scheduling of automated assembly lines*
- Mário Leite, Cláudio Alves and Telmo Pinto. *A computational study on metaheuristic approaches for the integrated planning and scheduling problem*

TC4 (room 23.3.10): Logistics and Transportation

Chair: Inês Marques

- André Gomes and António Pais Antunes. *A new optimization model for airline network design*
- Nuno Antunes Ribeiro, Alexandre Jacquillat, António Antunes and Amedeo Odoni. *A large neighborhood search heuristic for solving the airport slot allocation problem*
- Nuno Sousa, Luís Alçada-Almeida and João Coutinho-Rodrigues. *Modelação multiobjetivo em projetos de renovação de sistemas ferroviários*
- Ana Sofia Carvalho, Maria Eugénia Captivo and Inês Marques. *The ambulance dispatching and relocation problems: optimization approaches using a time-preparedness metric*

TC5 (room 23.3.14): Multicriteria Decision Making - Methodology *

Chair: Mónica Oliveira

- José Rui Figueira, Marta Bottero, Valentina Ferretti, Salvatore Greco and Bernard Roy. *On the Choquet multiple criteria preference aggregation model: Theoretical and practical insights from a real-world application*
- Nissia Bergiante and João Carlos Soares de Mello. *A new ranking for the PyeongChang 2018 Winter Olympic Games Based on Copeland Method*
- Luís Dias and Rudolf Vetschera. *Geração de funções de utilidade em Análise de Aceitabilidade Multicritério Estocástica (SMAA)*
- Mónica Oliveira and Inês Mataloto. *Multi-Criteria Decision Analysis for Health Technology Assessment: Which agenda to address methodological challenges?*

TC6 (room 23.3.15): Technology Management and Policy

Chair: João Claro

- José Oliveira, Rui Oliveira, Marta Gomes, Vasco Reis and Rosário Macário. *A Novel Optimization Model for Short Term Storage of Containers in Empty Container Terminals*
- Francisco Silva Pinto, Bruno de Carvalho and Rui Marques. *Adapting water tariffs to climate change - An impact assessment*
- Tiago M. Oliveira, João Claro, Patrícia L. Costa, João Pinho, Abílio Pereira Pacheco and José M.C. Pereira. *Wildfire risk governance - From a simple issue to a complex risk problem*
- José Coelho Rodrigues, Ana Cristina Barros and João Claro. *Sequences of alignment between technologies and adopters: Case research of a health screening implementation*

Friday, September 7

Friday, 09:30 - 11:00 (F)

F1 (room 23.3.4): DEA and Performance Analysis II

Chair: Ana Camanho

- Jesus Tapia and Bonifacio Salvador. *DEA efficiency in the public sector using provider and customer opinion: An application to the Spanish health system.*
- Miguel Pereira, José Rui Figueira and Rui Marques. *PRICDEA: preference information incorporation for decision-making using the Choquet integral in a DEA model*
- Maria Silva and Ana Camanho. *Using students' university scores to benchmark secondary schools*
- Alda Henriques, Ana Camanho, Pedro Amorim and Gabriel Silva. *Regulation and benchmarking: a formative evaluation of Portuguese wastewater services using composite indicators*

F2 (room 23.3.5): Discrete Optimization and graphs - Methodology *

Chair: Jorge Orestes Cerdeira

- Sofia J. Pinheiro and Domingos Cardoso. *New results on the order, average degree and degree sequence of (sub)graphs*
- Filipa Duarte de Carvalho. *Diameter-constrained clique relaxations with fixed-length paths*
- Marta Pascoal. *Solving the linear fractional assignment problem*
- Paulo Barcia and Jorge Orestes Cerdeira. *The combinatorial product sum problem*

F3 (room 23.3.9): Vehicle Routing *

Chair: Cristina Requejo

- Carolina Morais, Tânia Ramos and Ana Barbosa-Póvoa. *Dynamic approaches to solve the Smart Waste Collection Routing Problem*
- Maria Santos, Pedro Amorim and Eduardo Curcio. *A robust Vehicle Routing Problem with Selective Backhauls under revenue uncertainty*
- Ricardo Soares, Alexandra Marques and Pedro Amorim. *Multiple vehicle synchronisation in a full truck-load pickup and delivery problem: a case-study in the biomass supply chain*
- Paola Cappanera, Cristina Requejo and Maria Grazia Scutella. *The generalized Skill Vehicle Routing Problem: time windows, precedence constraints and device uncertainty*

F4 (room 23.3.10): Location and Distribution *

Chair: Pedro Amorim

- Maria do Céu Marques and Joana Dias. *Dynamic Facility Location Problem under Uncertainty: an extension to stochastic setup times*
- Rui Borges Lopes, Carlos Ferreira and Beatriz Sousa-Santos. *Problema de localização-distribuição com maximização de proveitos: uma aplicação na área do turismo*
- Daniel Espadinha and Teresa Cardoso-Grilo. *Planning the delivery of Home-Based Long-Term Care: A mathematical programming-based tool to support routes' planning*
- Sara Martins, Pedro Amorim and Bernardo Almada-Lobo. *Consistent consolidation strategies in grocery retail distribution*

F5 (room 23.3.14): Energy *

Chair: Manuel Matos

- Manuel Loureiro, João Claro and Paul Fischbeck. *Transmission expansion planning and cost allocation under uncertainty*
- Inês Soares, Maria João Alves and Carlos Henggeler. *Abordagens meta-heurísticas híbridas para o problema de otimização em dois níveis com múltiplos seguidores: uma aplicação no mercado retalhista de eletricidade*
- Luís Dias, Luís Guimarães, Armando Leitão, Luís Ribeiro, Ricardo Bessa, Manuel Matos and Leonel Carvalho. *Diagnosing and predicting power transformers condition*
- Rui Pinto, Ricardo Bessa and Manuel Matos. *Distributed OPF algorithm for radial electric distribution networks*

F6 (room 23.3.15): Multiobjective Optimization II

Chair: Dalila Fontes

- Diego F.M. Camara, Tânia Pinto-Varela and Ana Barbosa Póvoa. *Multi-objective optimization approach to design and planning a hydrogen supply chain in Portugal*
- Bruna Mota, Ana Carvalho, Maria Isabel Gomes and Ana Barbosa-Póvoa. *Supply chain design and planning towards social sustainability*
- Pedro Coelho, Leonardo Porto, Cristóvão Silva and Nathalie Klément. *A multi-criteria genetic algorithm approach to develop workers rotation programs*
- Dalila B.M.M. Fontes, Teresa Pereira and Márcia Oliveira. *Selection of a strategic plan using multi-objective optimization*

* Sessions that will use exclusively the Portuguese language

Friday, 11:30 - 12:30

Plenary talk (room 23.1.6):

António Murta. *From OR to AI – with ML on the way*

Chair: Helena Alvelos