



SCIENTIFIC PROGRAM

Sunday, March 24

Sunday, 14.30 – 15.00

Opening session (Auditório ESTGV)

Sunday, 15.00 – 16.00

Plenary Talk (Auditório ESTGV)

Mara Almeida. *Das empresas às autarquias, onde a investigação operacional influencia as nossas vidas.*

Chair: Carlos Henggeler Antunes

Monday, March 25

Monday, 09.00 – 10.00

Parallel session 1.1 (room 8): SEIO APDIO session on cutting and packing problems

Chair: Franklina Toledo

Language: English

- Paula Terán-Viadero, Antonio Alonso-Ayuso, F. Javier Martín-Campo. *The 2-dimensional cutting stock problema with variable-sized stock*
- Elsa Silva, José Fernando Oliveira, Tiago Silveira, Leandro R. Mundim, Maria Antónia Carravilla. *The Floating-Cuts model: a general and flexible*

mixed-integer programming model for non-guillotine and guillotine rectangular cutting problems

- F. Javier Martín-Campo, María Sierra-Paradinas, Antonio Alonso-Ayuso, Óscar Soto-Sánchez, Micael Gallego. *An optimisation model for slitting line allocation in the steel industry*

Parallel session 1.2 (room 9): Routing Problems 1

Chair: Telmo Pinto

Language: English, Portuguese

- João Cunha, João Magalhães, Fábio Oliveira, Wellington Alves. *Otimização da Recolha de Biorresíduos: Uma Abordagem Estratégica para a recolha de resíduos no Município de Paços de Ferreira*
- Maria João Santos, Diana Jorge, Tânia Ramos, Ana Barbosa-Póvoa. *Enhancing Logistics through a new Vehicle Routing Problem with Deliveries, Pickups and Backhauls*
- João Martins, Telmo Pinto, Carlos Henggeler. *Robust Models for the Pollution Routing Problem with Uncertain Demand and Travel Time*
- Mário Leite, Telmo Pinto, Cláudio Alves. *Parallelization of local search heuristics for the pollution routing problem using GPU computing*

Parallel session 1.3 (room 10): Optimization

Chair: João Pedro Pedroso

Language: English, Portuguese

- Humberto Rocha. *Direções de procura ortogonais aleatórias em métodos de procura direta*
- Aldina Correia, João Matias, Pedro Mestre, Carlos Serôdio. *Efficient Parameter Tuning in Location Systems via Direct Search Optimization*
- Manuel V. C. Vieira. *Instant runoff voting via integer programming*
- João Pedro Pedroso. *Maximum-expectation matching under recourse*

Parallel session 1.4 (room 11): Multiple Criteria Decision Aiding 1

Chair: Luís Dias

Language: English, Portuguese

- Miguel Fernandes, João Bana e Costa, Ricardo J. G. Mateus, Mónica D. Oliveira, Carlos A. Bana e Costa. *Current research topics on MACBETH*
- José Rui Figueira, Alexandre Vilar Ricardo, Ana Sara Costa. *Advancing Hospital Quality Assessment: A Comprehensive Multidimensional Analysis of Portuguese public hospitals*
- Paula Sarabando, Joana Fialho, Manuel Reis, Tiago Miguel. *Investment portfolio: how to help individual investors?*

- Luís Dias, Pedro Marques, Rita Garcia, Fernanda de Santo, Rita Tentúgal, Tiago Natal da Luz, Álvaro Sousa, José Paulo Sousa, Fausto Freire. *An application to improve Integrated Pest Management Systems using multicriteria sustainability assessment*

Parallel session 1.5 (room 13): Supply chains 1

Chair: Susana Relvas

Language: English, Portuguese

- Maria Ana Monge, Nelson Chibeles-Martins, Tânia Pinto-Varela. *Global Pharmaceutical Supply Chains: How to navigate through the impact of uncertainty?*
- Maria Meneses, Daniel Santos, Ana Barbosa-Póvoa. *Rescheduling recovery model in the Blood Supply Chain*
- Mafalda Ivo de Carvalho, Vânia Veloso, Ana Carvalho, Susana Relvas, Ana Barbosa-Póvoa. *Exploring Symbiotic Supply Chains: A Nexus Perspective and Operations Research Framework*
- Cátia da Silva, Ana Carvalho, Ana Barbosa-Póvoa. *Integrating Environmental and Social when Designing and Planning Supply Chains: A Monetization-Based Approach*

Monday, 10.00 – 11.00

Parallel session 2.1 (room 8): OR with Social Impact

Chair: Isabel Gomes

Language: English, Portuguese

- Ana Raquel de Aguiar, Maria Isabel Gomes, Tânia Ramos. *Optimizing Tactical Planning for Home Visits in Family Interventions: The Real Case of ComDignitatis*
- Maria Isabel Gomes, Helena Ramalhinho. *Social Care Logistics: what is it?*
- Patrícia Maduro, Joana Dias, Isabel Gomes. *Uma abordagem em duas fases para o planeamento de serviços de cuidados domiciliários*
- Mónica Gaboleiro, Isabel Nunes, Maria Isabel Gomes. *Heterogeneous workforce management – could optimisation be part of the solution*

Parallel session 2.2 (room 9): Applied Discrete Optimization

Chair: Sara Martins

Language: English, Portuguese

- Nuno Marques, Gonçalo Figueira, Luís Guimarães. *Selecting Dispatching Rules on the fly for the Dynamic Job Shop Scheduling Problem*
- Francisco Maia, Gonçalo Figueira, Fábio Neves-Moreira. *Solving the Dynamic and Stochastic Inventory-Routing Problem*
- Mariana Sousa, Sara Martins, Maria João Santos, Pedro Amorim. *Dynamic pricing strategy for substitute perishable products*
- Francesca Landolfo, Maria João Santos, Sara Martins, Pedro Amorim. *Definition of the MLOR rule through a bilevel optimization model*

Parallel session 2.3 (room 10): Retail

Chair: Bernardo Almada-Lobo

Language: English, Portuguese

- Catarina Bessa, Tânia Pinto-Varela, Ana Paula Barbosa-Póvoa, Cristóvão Silva, Samuel Moniz. *Understanding the dynamics of the fairness in wholesale-retail price coordination*
- Fábio Neves-Moreira. *Learning efficient in-store picking strategies to reduce customer encounters in omnichannel retail*
- Sérgio Castro, Gonçalo Figueira, Bernardo Almada-Lobo. *Optimizing Order Allocation in an Online Fashion Marketplace*
- Ana Margarida de Figueiredo Pereira. *Promotional forecasting in a retail setting*

Parallel session 2.4 (room 11): Interfacing with Artificial Intelligence

Chair: Samuel Moniz

Language: English, Portuguese

- Felipe Yamada, Flávia Barbosa, Luís Guimarães. *Bacterial Detection: Harnessing Artificial Intelligence for Rapid Results*
- Alexandre Jesus, Arthur Corrêa, Catarina Marques, Miguel Vieira, Cristóvão Silva, Samuel Moniz. *Towards efficient scheduling with AI: exploring Deep Q-Learning for the flexible job-shop scheduling problem*
- Arthur Corrêa, Alexandre Jesus, Cristóvão Silva, Samuel Moniz. *Performance Assessment of Deep Reinforcement Learning Extensions for Flexible Job Shop Scheduling*
- Tomás Martins Araújo. *Analyzing the Impact of Next Best Offer and Churn Methodologies on Customizing Promotions in the Insurance Industry*

Parallel session 2.5 (room 13): Supply chains 2

Chair: Rui Borges Lopes

Language: English, Portuguese

- Ana Amaro. *Modeling Sustainability and Uncertainty Awareness in Supply Chain Planning*
- João N. C. Gonçalves, Miguel Correia, M. Sameiro Carvalho. *Improving freight quoting through business analytics: a case study of a logistics service provider*
- Joaquim Jorge Vicente, Teresa Cardoso-Grilo. *Extending inventory supply chain planning to a multi-warehouse and multi-period context: a mathematical programming approach focused on a continuous review policy*
- Bruna Figueiredo, Rui Borges Lopes, Amaro de Sousa. *Sustainability and resilience in location-routing problems: A systematic review*

Monday, 11.30 – 12.30

Plenary Talk (Auditório ESTGV)

Ine Steenmans, *Future Policy and the Roles for Operational Research*

Chair. José Fernando Oliveira

Monday, 14.30 – 16.00

Plenary Estudio (Auditório ESTGV)

Chair. Carina Pimentel e Elsa Silva

- André Couto, *A storytelling dashboard for multicriteria decision-making*
- Ângelo Soares, *Programação de máquinas paralelas dedicadas com setups dependentes da sequência de famílias e recursos adicionais*
- Antonio César Castro Iglesias, *A Numerical Approach for the Aircraft Deconfliction Problem with Speed Regulation*
- Hélio Miranda, *Sistema de Apoio à Decisão para aquisição de ração para os cães da Guarda Nacional Republicana*
- Inês Douradinho, *Reserve Crew Scheduling in Passenger Rail Transport*
- João Melo e Diogo Gonçalves, *From data to action: transforming warehouse operations with simulation*
- Leonor Gonçalves, *Otimização de um problema integrado de balanceamento de postos e afetação de recursos: Um caso de estudo*
- Marco Silva, *Implementação de um algoritmo de análise multicritério numa empresa do ramo automóvel*
- Mário Jorge Simões, *Operational research models for kitting systems in the warehouse of the future*
- Matheus Campinho, *Sustainability of cutting and packing problems: beyond waste minimization*

Monday, 16.00 – 17.00

Parallel session 3.1 (room 8): OR in Urban Development

Chair: Carina Pimentel

Language: English, Portuguese

- João Cunha, João Magalhães, Fábio Oliveira, Inês Correia, Aldina Correia. *Decisões Estratégicas: O Caminho para uma Frota Sustentável na STCP*
- Ana Paula Falcão, Rita Machete, Marta Castilho Gomes, Alexandre Bacelar Gonçalves. *Spatial multi-criteria decision analysis for rehabilitation priority ranking: a collaborative application to heritage workforce housing sites*
- Bruno Machado, Carina Pimentel, Amaro Sousa. *Otimização de planeamento operacional de logística urbana, com combinação de fluxos de passageiros e de mercadorias*

Parallel session 3.2 (room 9): Routing Problems 2

Chair: Tânia Ramos

Language: English, Portuguese

- Ricardo Soares, Sophie N. Parragh, Alexandra Marques, Pedro Amorim. *A robust optimization approach for the vehicle routing problem with synchronization*
- Manuel Lopes, Diana Jorge, Joana Santos, Tânia Ramos. *Comparing different algorithms to solve the Smart Waste Collection Problem*
- Joana Santos, Ana Barbosa-Póvoa, Daniele Vigo, Tânia Ramos. *Strategic Sensor Placement Problem in Waste Management*

Parallel session 3.3 (room 10): Urban Logistics

Chair: Miguel Constantino

Language: English

- Tiago Monteiro, João Pedro Pedroso, Ana Viana. *Last-mile Delivery with Heterogeneous Crowdshipping and Service Levels*
- Farzam Salimi, António Galvão Ramos. *Applying machine learning for sequence prediction in last mile delivery*

- Eduardo Lérias, João Miranda, Paulo Ferreira. *Sistema de Apoio à Decisão para produção de artigos de uniforme da Guarda Nacional Republicana*

Parallel session 3.4 (room 11): OR Education & Production Planning

Chair: Cristina Lopes

Language: English, Portuguese

- Cristina Lopes, Eliana Costa e Silva. *Teaching Operational Research using Games and Simulation: a case study*
- Ana Beatriz Rodrigues, Samuel Moniz, Cristóvão Silva. *From theory to practice: optimizing production with operational research in a learning factory*
- Catarina Pereira Soares Novais dos Santos. *An Optimization Approach to the Tactical Production Planning in a Filling Company*

Tuesday, March 26

Tuesday, 10.00 – 11.00

Parallel session 4.1 (room 8): Industrial Applications

Chair: Maria Teresa Pereira

Language: English, Portuguese

- Caroline Tortorelli, Amílcar Arantes. *Barreiras à implementação do Lean Six Sigma na indústria de processos químicos: uma abordagem combinada ISM-MICMAC*
- Romão Santos, Catarina Marques, Miguel Sousa, Rui Rebelo, Jorge Pinho de Sousa. *Eco-Efficient Sequencing of a Rotating Machine Operations in Safety Shoe Manufacturing: A Multi-Objective Heuristics Approach*
- M. Teresa Pereira, Marisa Oliveira, Inês Esteves, Fernanda A. Ferreira. *A mathematical model for optimization of the autoclave occupancy*

Parallel session 4.2 (room 9): Multiobjective Optimization

Chair: Maria João Alves

Language: English, Portuguese

- Jorge Noro, Luís Dias. *Project portfolio management bi-objective model considering the leaving problem*

- Ana Maria Rodrigues, Cristina Lopes, Valeria Romanciuc, José Soeiro Ferreira, Elif Öztürk, Cristina Oliveira. *Modelos Multiobjetivo em Problemas de Setorização*
- Miguel Alves Pereira, Duarte Caldeira Dinis, Diogo Cunha Ferreira, José Rui Figueira, Rui Cunha Marques. *Using Geometric Distance Functions to Assess Performance Evolution: A Statewise Look at the Pre-vaccination COVID-19 Reaction in the USA*
- Maria João Alves, Carlos Henggeler Antunes. *O que são soluções pessimistas em problemas “bilevel” multiobjetivo?*

Parallel session 4.3 (room 10): Forest Fire Management

Chair: Filipe Alvelos

Language: English, Portuguese

- Francisco Marques, Agostinho Agra, Helena Alvelos, Ana Raquel Xambre, Filipe Alvelos. *A robust approach for the prepositioning of resources for wildfire suppression*
- Marco Marto, Filipe Alvelos. *Encaminhamento de veículos para combate estendido a incêndios florestais*
- Filipe Alvelos, Marco Marto, André Mendes. *Uma heurística baseada em MIP para ataque inicial a incêndios florestais*
- Marina A. Matos, Rui Gonçalves, Ana Maria A. C. Rocha, Lino A. Costa, Filipe Alvelos. *Solving a sequencing firefighting resource problem with a genetic algorithm*

Parallel session 4.4 (room 11): Healthcare

Chair: Joana Dias

Language: English, Portuguese

- Mariana Oliveira, Daniel Santos, Ana Barbosa-Póvoa. *Multi-objective optimization to inform hospital collaboration and elective surgical patient inter-hospital transfers*
- Rafael Miranda, Filipa Baptista, Isabel Albuquerque, Mónica Oliveira. *Aligning actionable monitoring with health technology assessment in remote care management: combining business intelligence, multicriteria decision analysis and participatory approaches to build a multidimensional management dashboard*
- Maria Lopes, Daniel Santos, Ana Barbosa-Póvoa. *Designing a multi-level hierarchical network for the provision of hospital care: A Portuguese case study*
- Diana Aires, Brígida Ferreira, Humberto Rocha, Joana Dias. *Otimização biológica no planeamento de tratamentos de radioterapia*

Parallel session 4.5 (room 13): Maritime Logistics & Transportation

Chair: José Fernando Oliveira

Language: English

- Filipe Rodrigues. *The berth allocation problem under uncertainty: a distributionally robust optimization perspective*
- Catarina Coelho Carvalho, Romão Santos, Catarina M. Marques, Jorge Pinho de Sousa. *A Simulation Tool for Optimizing Port Operations*
- Masoud Golalikhani, Beatriz Brito Oliveira, Maria Antónia Carravilla, José Fernando Oliveira. *Optimizing multi-attribute pricing plans for different carsharing user profiles*
- Sayeh Fooladi Mahani, Beatriz Brito Oliveira, Lia Patrício, Vera Miguéis, Maria Antónia Carravilla, José Fernando Oliveira. *Factors affecting transport mode choice and their implications for sustainable mobility: an empirical analysis of the Asprela University Campus*

Tuesday, 11.30 – 12.30

Parallel session 5.1 (room 8): Energy

Chair: Agostinho Agra

Language: English, Portuguese

- Adelaide Cerveira, Amaro de Sousa, E. J. Solteiro Pires, José Baptista. *Otimização do desenho de parques eólicos com partilha de vala*
- Luciana Yamada, Flávia Barbosa, Luís Guimarães. *Enhancing optimal design of hybrid renewable energy systems through markovian availability approach*
- Agostinho Agra, Adelaide Cerveira. *Optimizing wind farm cable routing under uncertainty*

Parallel session 5.2 (room 9): Operação Ferroviária

Chair: Jorge Orestes Cerdeira

Language: English, Portuguese

- Gonçalo P. Matos, Luís Albino, Ricardo L. Saldanha. *Suporte algorítmico para o planeamento da capacidade em operadores ferroviários*
- Sara Cruz, Carlos Iglésias, Ricardo L. Saldanha. *Otimização do planeamento de operações ferroviárias em redes locais*
- Adérito Araújo, J. Orestes Cerdeira, Nuno Lopes, Ana Moura. *Minimizing costs in signal provision by communication antennas along a railway line*

Parallel session 5.3 (room 10): Cutting and packing problems

Chair: Elsa Silva

Language: English, Portuguese

- Paulo Jorge Nascimento, Cristóvão Silva, Carlos Henggeler Antunes, Samuel Moniz. *Improving the efficiency of Logic-Based Benders Decomposition for large-scale optimization*
- Sara Ali, António Galvão Ramos, José Fernando Oliveira. *Online three-dimensional packing problems with static stability constraint*
- Pedro Rocha, António Ramos, Elsa Silva. *Online Irregular 3D Packing with Stability constraints*

Parallel session 5.4 (room 11): Routing Problems 3

Chair: Maria Cândida Mourão

Language: English, Portuguese

- Marta Mesquita, Miguel Constantino, Susete Marques, José G. Borges. *Integrating harvesting decisions with road planning and timber transportation*
- Raquel Bernardino. *A metaheuristic for the family capacitated vehicle routing problem*
- Leonor Santiago Pinto, Raquel Bernardino, João Janela, Carlos Martins, Maria Cândida Mourão, Filipe Rodrigues. *A multi-trip vehicle routing with release dates and interrelated periods – an automotive industry application*

Tuesday, 14.00 – 15.00

Plenary Roundtable (Auditório ESTGV)

Francisco Lima (INE), Luísa Loura (PORDATA), Bruno Espírito-Santo (e-redes).
Utilização de Dados Públicos para a Investigação

Chair: Ana Barbosa-Póvoa

Tuesday, 15.00 – 16.00

Closing session (Auditório ESTGV)