



UNIVERSIDAD  
POLITÉCNICA  
DE MADRID



**ADINGOR**

Asociación para el Desarrollo de  
la Ingeniería de Organización

# CONFERENCE PROGRAM

**CIO**  
**MADRID**  
July 4th-5th 2024

**18th**  
International Conference  
on Industrial Engineering  
and Industrial Management  
(ICIEIM)

**XXVIII**  
Congreso de Ingeniería  
de Organización (CIO2024)



## Thursday, July 4th

Time	Activity	Place
8:30 – 9:00	Check-in	ETSI Industriales – Steam Engine Hall (Registration Desk)
9:00 – 10:30	Parallel Sessions A (A1 to A7)	Rooms C, D, G, MF del Amo, Puig Adam, Artigas, F10
10:30 – 11:00	Poster Session P-1 – Coffee Break	Steam Engine Hall
11:00 – 11:30	Conference Opening Session	Auditorium
11:30 – 12:45	<p style="text-align: center;"><b>Round Table</b>  <i>Sustainability and competitiveness: trade-off traps and self-reinforcing loops</i>                      SACYR / 3M / IBERDROLA</p>	Auditorium
12:45 – 13:15	In Memoriam: Prof. Ramón Companys	Auditorium
13:15 – 14:30	<p style="text-align: center;"><b>Lunch</b>  <i>Followed by a coffee corner, open from 14:30 to 18:00</i></p>	Steam Engine Hall
14:30 – 16:00	Parallel Sessions B (B1 to B7)	Rooms C, D, G, MF del Amo, Puig Adam, Artigas, F10
16:15 – 17:15	<p style="text-align: center;"><i>Ethics as a Compass? Navigating Complexity in Organizational Engineering</i>                      Prof. Dr. Markus Beckmann                      FAU Erlangen-Nürnberg</p>	Auditorium
17:15 / 17:45 -19:00	Adingor General Assembly	Room C
19:00 – 19:30	Free Time	
19:30	Meeting point to go to the Gala Dinner	Steam Engine Hall (Registration Desk)
20:00 – 23:00	Gala Dinner	ETSI Montes, Forestal y del Medio Natural (Camino de las Moreras, s/n- Ed. Montes)
	Concerts at Jardín Botánico (Not included in the registration fee)	Ciudad Universitaria

## Friday, July 5th

Time	Activity	Place
9:00 - 9:30	Check-in	ETSI Industriales – Steam Engine Hall (Registration Desk)
9:30 - 11:00	Parallel Sessions C (C1 to C6)	Rooms C, D, G, MF del Amo, Puig Adam, Artigas
11:00 - 11:30	Poster Session P-2 – Coffee Break	Steam Engine Hall
11:30 - 13:00	Academic careers of teaching staff at universities. Rosa Rio Belver // ADINGOR Joven Workshop	Room C // Room 37
13:00 - 13:30	Conference Closing	Auditorium
13:30 - 14:30	Lunch	Steam Engine Hall



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**Maria del Mar  
Alemany Díaz**

Universidad  
Politécnica de  
Valencia

**President of  
ADINGOR**

Dear Participants:

On behalf of ADINGOR, it is my great honour and privilege to welcome you to the XVIII International Conference on Industrial Engineering and Industrial Management (ICIEIM) and the XXVIII Congreso de Ingeniería de Organización (CIO2024). We are delighted to hold this long-awaited event in the nerve centre of Spain, Madrid, on July 4 and 5, 2024. I would like to thank the congress organizers and the supporting institutions, for all their great efforts to make this year's congress again a success in terms of quality and participation.

I would like to dedicate this edition of the congress to Professor Ramón Companys, for his invaluable contribution to Organizational Engineering and to ADINGOR, for his overwhelming personality, for his professionalism and for his immense generosity. Thanks to this generosity, he was able to transmit his knowledge and experience to many of us who are here today.

A congress with a long tradition but not for that predictable, as each year it seeks to offer attendees a unique experience in the technical area of Organizational Engineering and its social program. During these days we have an exceptional opportunity to meet colleagues, strengthen our network, foster collaborations and share ideas around the challenging motto of this year's conference: "Organizational Engineering, Coping with Complexity".

Complexity is in the environment, complexity is in the organizations, and complexity is in the society. Complexity, indeed, is present when facing the major global challenges related to the Sustainable Development Goals (SDGs).



Addressing these challenges requires a holistic, cross-cutting and multidisciplinary approach, such as that inherent to Organizational Engineering (OE). OE also known as Industrial Engineering, can make a major contribution to the SDGs by designing, implementing, operating and improving efficient, robust, agile, resilient and adaptable processes and systems able to respond to the demands of the present without compromising the ability of future generations to meet their own needs.

Bringing together diverse perspectives, theories and practices along with harnessing the potential of cutting-edge technologies, OE becomes a very valuable approach to advance in achieving sustainability. Thus, ensuring that companies and organizations not only survive, but thrive in complex environments.

We should not consider complexity as an obstacle, but rather the incentive that drives us to innovate, adapt and evolve. Let us see complexity as the catalyst that will allow us to move forward in the future of OE.

It is my pleasure to invite you to challenge the conventional, to explore the unexplored and to build a future where complexity is our ally and not our enemy.

Finally, let me encourage you to do all this in our company, in the heart of this congress, where the contribution of each of you, adds up to our goal of add value contributing to sustainability from the perspective of Organizational Engineering.

**Prof. Maria del Mar Alemany Díaz**  
**President of Adingor**



*Maria del Mar Alemany*

## Welcome to the ICIEIM | CIO2024 Conference!

We are delighted to have you join us for this year's conference, organized by the ADINGOR chapter at Universidad Politécnica de Madrid. It is both a great honor and a deep joy to receive our entire scientific community once again to the "*Palacio de la Industria y de las Artes*", one of the symbolic hearts of Spanish industrial engineering since 1907. We are also thrilled to celebrate our social program in one of the most beautiful green spaces treasured by UPM, the arboretum and gardens of the "*Escuela de Montes*".

The purpose of this year's conference, themed "**Organizational Engineering, Coping with Complexity**", is to celebrate the longstanding work of Organizational Engineering (OE) academics in creating relevant knowledge to address complex real-world problems and dilemmas. Since its inception, our discipline's core features have included working in interdisciplinary teams, incorporating the aspirations of various stakeholders, and facilitating collaboration among diverse actors and sectors. These cross-pollination, co-creation, openness, and systemic perspective are, in our view, baseline principles of OE. This year's motto aims to showcase the value of OE approaches and methods and to highlight this contribution to our institutions and society as a whole.

We are at a turning point where sustainability challenges (and opportunities), the green and digital transitions and the need for enhanced competitiveness and strategic autonomy in Europe are calling for a reindustrialization wave in our continent. Engineering academics, and specifically OE scholars, have a pivotal role to play in this process.



**Ruth Carrasco  
Gallego**



**Carmen Avilés  
Palacios**

Universidad  
Politécnica de  
Madrid

**Conference  
Chairs of ICIEIM  
| CIO 2024  
Madrid**

Grasping the full potential of a **reindustrialization that upholds planetary boundaries and leaves no one behind** requires vigorous advancements in the knowledge triangle: research, education, and innovation (both technological and organizational).

As OE scholars, thanks to our history, methods and mindsets, we have the opportunity to strongly contribute in achieving this ambition: (1) by generating *the type of knowledge* relevant to those twin transitions, (2) by driving *the type of innovation* required, and (3) by crafting *the type of professionals and change agents* our industry needs, equipped with the right set of knowledge and competences to navigate those transformation dynamics. In this sense, we want to lead by example and we have introduced a few seed initiatives in this edition to make our ICIEIM | CIO events more sustainable. We appreciate your participation in this effort and look forward to the collective insights and advancements we will achieve together to minimise the impacts of our gatherings, while maximising the opportunities to create knowledge and social capital among attendees and beyond.

This edition's programme intends to generate the necessary conversations, debates and exchange of thoughts and ideas that will keep our field fresh and thriving. As part of complexity, we have embraced the inclusion of the ethical dimension in a world where the fast and extensive developments in science and technology raise a wide range of ethical issues, related for example to privacy, safety, and democracy.

We would like to warmly thank all the participants who submitted their scientific contributions to CIO 2024, all the reviewers who ensured the quality of the conference and provided constructive feedback to authors, all the conference committee members, our invited speakers and, of course, our home institutions and ADINGOR for supporting the celebration of the ICIEIM – CIO conference in our beloved city, Madrid.

**Profs. Ruth Carrasco Gallego & Carmen Avilés Palacios**  
**Conference Chairs of ICIEIM | CIO 2024 Madrid**



Carmen Avilés



Ruth Carrasco

# Conference

## Opening Session

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### Location, date and time

The event will take place at **Auditorium** on **July 4th** from **11:00** to **11:30**.

### Description

Welcome to the conference attendees by:

- Antonio Hidalgo Nuchera, Vice-Rector of Economic Affairs, UPM
- Sergio Domínguez Cabrerizo, Vice-Dean of Academic Affairs, ETSI Industriales UPM
- Mareva Alemany Díaz, President of ADINGOR
- Ruth Carrasco Gallego & Carmen Avilés Palacios, Conference Chairs

## In Memoriam: Prof. Ramón Companys i Pascual

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### Location, date and time

The event will take place at **Auditorium** on **July 4th** from **12:45** to **13:15**.



# Adingor General Assembly

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## Location, date and time

The event will take place at **Room C** on **July 4th** from **17:15** to **19:00**.

## Workshop

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### Location, date and time

The event will take place at **Room C** on **July 5th** from **11:30** to **13:00**.

### Description

*Academic careers of teaching staff at universities.* Rosa Rio Belver

## Workshop

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### Location, date and time

The event will take place at **Room 37** on **July 5th** from **11:30** to **13:00**.

### Description

*ADINGOR Joven Workshop*

## Conference Closing

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### Location, date and time

The event will take place at **Auditorium** on **July 5th** from **13:00** to **13:30**.

# Round table

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## Location, date and time

The event will take place at **Auditorium** on **July 4th** from **11:30** to **12:45**.

## Description

*Sustainability and competitiveness: trade-off traps and self-reinforcing loops*, moderated by Carlos Mataix, director of itdUPM.

Panelists:

- Marta Gil de la Hoz, General Director for Strategy, Sustainability & Innovation at SACYR Group
- Roberto Anta, Managing Director at 3M Iberia
- Mónica Oviedo, Head of Sustainability Management at Iberdrola Group

Followed by an open conversation with conference attendees.

## Panelists

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**Marta Gil de la Hoz**  
SACYR Group



**Roberto Anta**  
3M Iberia



**Mónica Oviedo**  
Iberdrola Group

## Moderator

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**Carlos Mataix**  
Universidad Politécnica  
de Madrid





# Plenary talk

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## Location, date and time

The event will take place at **Auditorium** on **July 4th** from **16:15** to **17:15**.

## Description

This session by **Prof. Dr. Markus Beckmann** titled *Ethics as a Compass? Navigating Complexity in Organizational Engineering* will explore the intricate challenges of managing increasing complexity in organizational engineering and the potential benefits of integrating ethical considerations. Prof. Beckmann will examine the role of mindsets, tools, and partnerships through an ethical lens, proposing that incorporating ethics may paradoxically mitigate complexity. The talk will conclude with an invitation for audience discussion and critique, encouraging participants to address ethics and organizational complexity together.

## Further details

Prof. Dr. Markus Beckmann is the Chair of Corporate Sustainability Management at Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU). His research encompasses corporate sustainability management, CSR, social entrepreneurship, and ethical perspectives in management, building on his initial training in business ethics.

His work has been published in journals such as *Business Ethics Quarterly*, *Business Strategy and the Environment*, *Business and Society*, *IEEE Transactions on Engineering Management*, *Journal of Business Ethics*, *Non-Profit and Voluntary Sector Quarterly*, and *Technological Forecasting and Social Change*.



**July 4th: 09:00 - 10:30**

Session A1 - Room C

## **Supply Chain Management and Logistics**

**Chair: Mar Fernández**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
10	Drones, Last Mile Delivery, and Europe	David Sánchez-Wells, Pedro L. González-R., José L. Andrade-Pineda
31	An approach to the facility layout problem in reverse and bi-directional logistics context	Paola Fernanda Vintimilla Alvarez, Faustino Alarcón
28	Challenges and perspectives of packaging design for e-commerce in the fashion sector	Jacobo Ecurís Ouviaña, Jesús Garcia-Arca, Jose Carlos Prado
123	Low-cost Information System for Locating Items in SME Warehouses	Sergio Rios
21	Identifying and assessing road transport factors with the greatest economic impact on Spanish transport companies	Mar Vazquez-Noguerol, Jose Carlos Prado

Session A2 - Room D

## **Impact of Organizational Engineering to the Sustainable Development Goals (SDGs)**

**Chair: Javier Mazorra**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
36	Standardizing the management of the circular economy as a mechanism to achieve Sustainable Development Goal 6	Germán Arana Landín, Waleska Sigüenza-Tamayo, Beñat Landeta, Naiara Uriarte-Gallastegi, Iker Laskurain Iturbe
49	Understanding responses to perceived complexity by internal stakeholders. Case study of an R&D project of an industrial SME	José Manuel González-Varona, Natalia Martin-Cruz, Fernando Acebes, Javier Pajares
53	Optimising diets: quantitative methods for guiding transition towards healthy diets	Marc Juanpera, Pol Gil Figuerola, Melissa Koenen, Sabrina Kuri, Claudia Damu, Laia Ferrer Martí
101	Climate change and the construction sector. Unveiling the impact of rising temperatures on construction workers: An introduction to the systematic literature review protocol	Marta Cruces Correa, M Carmen Pardo-Ferreira, Manuel Suarez Cebador, Juan Carlos Rubio Romero
121	Optimising Food Baskets in a Local Food Bank: Enhancing Nutrition, Variety and Equity	Pol Gil Figuerola, Marc Juanpera, Laia Ferrer Martí, Rafael Pastor



Session A3 - Room G  
**Operations Research, Modelling and Simulation**

**Chair: Joaquín Bautista-Valhondo**

ID	Title	Authors
7	Smart tuning of algorithm parameters by deep reinforcement learning	Julio C. Serrano-Ruiz, Josefa Mula, Raul Poler
33	Optimizing retail staffing: Multiskilling levels in personnel scheduling under uncertain demand	Andrés Porto, Amaia Lusa, Roberto Porto-Barceló, César A. Henao
43	Critical Decision Method for the improvement of Health and Safety in construction activities of concrete structures	Francisco Miguel Salguero Caparrós, M Carmen Pardo-Ferreira, J. Marcelo Tierra-Arévalo, Virginia Herrera-Pérez, Juan Carlos Rubio Romero
52	Mixed model Heijunka-sequencing with Zero-buffers and Minimal Dilated Equilibrium Time	Joaquín Bautista-Valhondo, Rocio Alfaro-Pozo
58	Comparative analysis of assembly line balancing models with ergonomics	Rocio Alfaro-Pozo, Joaquín Bautista-Valhondo

Session A4 - Room M. F. del Amo  
**Production Planning and Control**

**Chair: Raúl Poler**

ID	Title	Authors
23	Memetic Algorithm: A new heuristic to help a Genetic Algorithm in the optimization of Assembly Line Balancing Problems	Jon Alzola, Rosa Rio Belver, Izaskun Alvarez-Meaza, Gaizka Garechana
51	Review of State-of-the-Art Approaches to Vessel Loading and Unloading Planning and Scheduling	Maria Boluda-Prieto, Ana Estesó, María del Mar Eva Alemany-Díaz, Angel Ortiz Bas
55	Conceptual Framework for the Optimization of Capacitated Lot-Sizing and Scheduling Problem	Juan Pablo Fiesco Muñoz, Ana Estesó, María del Mar Eva Alemany-Díaz, Raul Poler
69	Can Management System: a cloud-based service suite for wind tower can compliance	Ángel Franco-Álvarez, Alejandro Escudero-Santana, Ana Pegado-Bardayo, María-Luisa Muñoz-Díaz
70	Machine learning techniques to predict process time in operations with high variability	Kenny-Jesús Flores-Huaman, Alejandro Escudero-Santana, María Rodríguez-Palero, María-Luisa Muñoz-Díaz

Session A5 - Room Puig Adam  
**Education in Organizational Engineering**

**Chair: Rudi de Castro**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
35	A Circular Economy Living Lab as an enabler of Action Research and Learning practices	David Hidalgo, Ruth Carrasco Gallego
5	Students' perceptions on using ChatGPT for strategic decision-making	Ramona Leon, Raul Rodriguez-Rodriguez, Juan-Jose Alfaro Saiz
6	Videogames: A pedagogical tool for developing creativity and innovation among the engineering students	Ramona Leon, Raul Rodriguez-Rodriguez, Juan-Jose Alfaro Saiz
13	Practical training in industrial statistics and design of experiments in higher education	Gorka Unzueta, José Alberto Eguren, Nerea Zenigaonaindia
22	Experiences in Gamification in Management subjects: Learning by playing	Manel Rajadell, Rudi De Castro, Gerusa Gimenez

Session A6 - Room Artigas  
**Sustainability, Socio-ecological Transitions, Quality Management**

**Chair: José Manuel Galán**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
116	Bioeconomy ecosystem to boost entrepreneurship: the Urban Forest Innovation Lab Cuenca (UFIL Cuenca) case	Camilo Muñoz Arenas, Carmen Avilés-Palacios, Juan José Morillas Guerrero
16	CIMO-Model Application for Rice Straw Management: A Circular Economy Approach	Pascual Cortés-Pellicer, Fernando Castelló-Sirvent, Dídac Sanchís Soriano
17	Solar Home systems monitoring: sizing rural electrification	Carlos Cuenca-Enrique, Isabel Salmerón-Marazuela, Laura del Río Carazo, Santiago Iglesias-Pradas
47	An economic evaluation for implementation of Zero Defects and Zero Waste inspection solution in the Wind Energy manufacturing industry	Joan Lario Femenia, Javier Mateos Luengo, Raul Poler, Angel Ortiz Bas
82	The Pursuit and Perception of Sustainability: Multicriteria Decision-Making Approach in the Fashion Industry	Lucía Morell-García, Eugenia Babiloni

Session A7 - Room F10  
**Circular and regenerative engineering**

**Chair: Javier Santos**

ID	Title	Authors
132	Circular Economy in the Hotels & Restaurant sector: literature review and further research agenda. The case of Paradores.	Paz Costantini, Andrés de las Heras Calleja, Lola Storch de Gracia, Ruth Carrasco Gallego
79	How is the Digital Product Passport being conceptualized? A comparative hierarchical cluster analysis between academia and industry	Pamela-Angela Salinas-Velarde, Muhamamd Jamal Ahmed, Ruth Carrasco Gallego
107	The automotive industrial sector in Spain facing the circular economy	Salvador Perez-Canto, Alvaro Ramos-Garcia, Carlos de las Heras-Rosas
118	Circular Economy Goals, a way to measure the impact of circular economy on business	Juan Manuel Valverde Izquierdo, Carmen Avilés-Palacios
59	A conceptual framework for the generalised assignment problem through a people lens	Blanca Guerrero, Josefa Mula, Raul Poler

**July 4th: 14:30 - 16:00**

Session B1 - Room C

**Supply Chain Management and Logistics**

**Chair: Gerusa Giménez**

ID	Title	Authors
14	Artificial Intelligence in Reverse Logistics Process: recent theory and applications	Pascual Cortés-Pellicer, Faustino Alarcón, David Pérez-Perales
32	Packaging in e-commerce. An applied analysis in household products	Jesús Garcia-Arca, A. Trinidad González-Portela Garrido, Carlota Hernández-García, J. Carlos Prado-Prado
56	Unveiling the sustainability implications of time windows for the last mile: A case study analysis	Iria González Romero, Jose Carlos Prado
61	Quantitative models for the optimisation of operations strategies in sustainable and circular supply chains	Darwin Aldás, Josefa Mula, Manuel Diaz-Madroño
122	Mathematical programming for an integrated order batching, assignment, sequencing, and routing problem considering time-window due dates and heterogeneous vehicles	Ali Jahed, Alvaro García Sánchez

**Session B2 - Room D**  
**Operations Research, Modelling and Simulation**

**Chair: Elvira Maeso**

ID	Title	Authors
66	Predicting Touristic Rental Property Prices Using Cloud-Based Machine Learning Tools	Salvador Martín-Sánchez, Elvira Maeso-González, Guadalupe González-Sánchez
72	A database for the generation of synthetic population from public information sources in Spain	Salvador Martinez-Artero Martinez, Maria Victoria De La Fuente, Ros Mcdonnell Diego, Lorenzo Ros-Mcdonnell
120	Mid Term Planning of an airframe mixed model assembly line using CP	María De Sales Icardo, Tamara Borreguero Sanchidrián, Gillaume Poveda
18	Interpretable Machine Learning in Project Management Control: An Exploration of EBM within the Triad Method	José Ignacio Santos Martín, María Pereda, Virginia Ahedo Garcia, José Manuel Galán
92	Conditional probabilities-based scenario analysis for risk management and economic viability analysis of R&D projects	Alfonso Duran Heras, Karen Reina Sánchez, Juan-Pedro Arbáizar, Jesús Morcillo Bellido

**Session B3 - Room G**  
**Management Information Systems, Knowledge Management, Industry 5.0**

**Chair: Julián Chaparro**

ID	Title	Authors
9	Hospital communication: State of the field	Sofia Estelles-Miguel, Sofia Aparisi Torrijo, Gregorio Rius-Sorolla, Ernesto Bataller-Alonso
19	A Method to Determine the Best DApp-Blockchain Fit	Emiliano Acquila-Natale, Pablo Jarabo-Valdivieso, Ángel Hernández-García, Julián Chaparro-Peláez
26	Ergonomics and Gender: What about science guidelines?	Gaizka Insunza-Aranceta, Enara Zarrabeitia, Izaskun Alvarez-Meaza, Rosa Rio Belver
42	Facilitating AI-based Solutions Integration in Production Planning: Development of an Interoperable Data Model	Beatriz Andres, Juan Pablo Fiesco Muñoz, Raul Poler, Miguel A. Mateo-Casalí
105	Features and benefits of water distribution network sectorization	Alicia Robles Velasco, Álvaro Mendoza-Bonilla, Pablo Cortés, Luis Onieva

Session B4 - Room M. F. del Amo  
**Production Planning and Control**  
**Robotics and Control in Industrial Engineering**

**Chair: Miguel Ortega**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
27	Conceptual framework for the integration of Soft Robotics in the manufacturing sector	Eduardo Guzman, Beatriz Andres, Raul Poler
37	Maintenance Management based on Aerial Acoustic Monitoring for Offshore Wind Turbines	Isaac Segovia, Fausto García, Pedro Bernalte Sánchez, Mayorkinos Papaelias, Hasmat Malik
46	Energy efficiency assessment through drone-based technology in industrial environments	Joan Lario Femenia, Javier Mateos Luengo, Raul Poler, Angel Ortiz Bas
94	Exploring the Adoption and Application of Transformer Models in Manufacturing Scheduling	Carlos García-Castellano Gerbolés, Miguel Gutiérrez, Miguel Ortega-Mier, Joaquín Ordieres-Meré
128	Lean Production Planning and Control 4.0: A Dynamic Forecasting Model for the OEE	Ruggero Colombari

Session B5 - Room Puig Adam  
**Education in Organizational Engineering**

**Chair: Javier Carrasco**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
2	Interactive Visualization of Genetic Algorithm Solutions for the Traveling Salesman Problem: An Educational Tool	José Ignacio Santos Martín, Virginia Ahedo Garcia, María Pereda, José Manuel Galán
67	Challenge-Based Learning in Higher Education Applied in four Industrial Companies of the Basque Country	Aitor Orue, José Alberto Eguren, Gorka Unzueta
80	Industry 4.0 and Universities from an Institutional Perspective: a literature review	Diego Rorato Fogaça, Mercedes Grijalvo, Mario Sacomano Neto
91	Trends and research to optimise scheduling decision making in educational institutions	Rosa Galleguillos Pozo, Pablo Rial-González, Olaya Santamaría Queiruga
90	The Critical Thinkers Approach to the Current Challenges of the 2030 Agenda. The Role of the University as a Catalyst Agent: Challenges and Opportunities	Jaime Moreno Serna, María De Gregorio, Javier Carrasco, Lola Storch de Gracia

Session B6 - Room Artigas  
**Sustainability, Socio-ecological Transitions, Quality  
 Management**

**Chair: Carmen Avilés**

ID	Title	Authors
85	Analysing indoor thermal comfort in office buildings using Artificial Neural Networks regarding gender differences	Juan Carlos Ragel Bonilla, Pablo Aparicio Ruiz, Elena Barbadilla-Martín, Jose Guadix
75	Discrete Event Simulations for Procurement Logistics in Offshore Wind Projects	Santiago Bueno Infantes, Daniel Molero Medina, Diego Pereira Crespo, Sara Pereira
87	Exploratory study of circular materials and building components' use impact on Occupational Health and Safety in the Construction Industry	Juan Antonio Torrecilla-Garcia, Agnieszka Grazyna Skotnicka, Carmen Anaya-Aguilar, Francisco Miguel Salguero Caparrós
102	Evolving Roles of Development Agencies in Multi-Stakeholders Partnerships	Javier Mazorra, Leda Stott, Cecilia López Pablos, Andrea Amaya Beltrán, Manuel Pastor Gutiérrez
3	Digital Footprints of Cultural Heritage: Analysing Interest in the Camino de Santiago's Cultural Assets through Google Trends	Silvia Díaz de la Fuente, María Pilar Alonso Abad, José Manuel Galán

Session B7 - Room F10  
**Supply Chain Management and Logistics**

**Chair: Pablo Cortés**

ID	Title	Authors
97	Parcel Locker Network Design in Barcelona	María Savall-Mañó, Imma Ribas, Marta Figueras-Vall
63	A Quantitative Analysis of Couriers Efficiency in Last-Mile and First-Mile Reverse Logistics	Ana Pegado-Bardayo, Jesús Muñuzuri, Pablo Cortés-Achedad, Antonio Lorenzo-Espejo
98	Analysing service time in last-mile and first-mile reverse logistics	Antonio Lorenzo-Espejo, Jesús Muñuzuri, Alicia Robles Velasco, Ana Pegado-Bardayo
99	Criteria for solving the problem for last-mile micro-depot locations in urban areas: A Review	María Rodríguez-Palero, Jose Guadix, Jesús Muñuzuri, María-Luisa Muñoz-Díaz
117	A conceptual model for transport requirement planning	Juan Moreno, Raul Poler, Josefa Mula

**July 5th: 09:30 - 11:00**

Session C1 - Room C

## **Supply Chain Management and Logistics**

**Chair: Isabel García**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
64	The Influence of Unique Components on Product Availability: A Case Study in a Jewelry Brand	Javier Cabello, Lars Hvam
74	Enabling optimisation production technologies for Supply Chain 4.0	Jordi Almendros Granero, Marta Guerrero Martínez, Josefa Mula, Raul Poler
78	Industry 5.0: a review of trends compared to Industry 4.0 and Society 5.0	Sandra Ramos, Isabel García Gutiérrez
93	Utilizing Large Language Models for Building and Solving Production and Transportation Optimization Models	Enrique Parra
29	Distribution redesign of the supply chain in the car industry	Nicolas Anich, Manuel Mateo-Doll, Antoni Balaguer-Borrás

Session C2 - Room D

## **Operations Research, Modelling and Simulation**

**Chair: Amaia Lusa**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
88	Electrification planning with uncertain demand: a multistage stochastic approach	Antonin Ponsich, Marc Juanpera, Iker Martin Saladich, Bruno Domenech Lega, Laia Ferrer Martí, Rafael Pastor
106	Modelling and Simulation of a Combinatorial Double Auction using DEVS	Juan De Antón, Cristina Ruiz Martín, Félix Villafañez, David Poza, Adolfo López-Paredes
108	Multi-reservoir hydropower optimization with alternative Deep Reinforcement Learning algorithms	Rodrigo Castro Freibott, Alvaro García Sánchez, Francisco Espiga Fernández, Guillermo González-Santander
112	Characterization of traffic accidents in Barcelona	Ignacio Fuentes Ribas, Jordi Olivella Nadal
126	Discrete event simulation for hospital inpatient flow modelling: A review of validation methods	Alberto Lacort, Julien Maheut, Nadia Lahrichi

Session C3 - Room G

**Management Information Systems, Knowledge Management,  
Industry 5.0**

**Chair: Mercedes Grijalvo**

ID	Title	Authors
44	Bibliometric analysis of Digital Transformation in Industrial and Construction sectors	Jaime Galaz de Miguel, Izaskun Alvarez-Meaza, Ernesto Cilleruelo, Rosa Rio Belver
45	Solving a real-life dynamic assignment problem in the service sector	Jordi Fortuny Santos, Jordi Fortuny Profitós
48	Ergonomics in advanced industry: a bibliometric analysis	Naiara Pikatza, Itziar Martinez De Alegria, Jon Borregan-Alvarado, Aitor Basañez-Llantada
95	Optimizing Mapping Operations in Forest Environments: Technical and Usage Perspective	Marcos Terol, Francisco Fraile, Andrés Boza, Pedro Gomez-Gasquet
96	Enhancing Quality in Healthcare Services. A PSS Approach in Multiple Sclerosis	Mercedes Grijalvo, Diego Rorato Fogaça, Andrea Herrero García, Guillermo Martín-Avila, Yolanda Aladro-Benito, Joaquín Ordieres-Meré

Session C4 - Room M. F. del Amo

**Strategy, Innovation, Networks and Entrepreneurship**

**Chair: Izaskun Álvarez**

ID	Title	Authors
8	Artificial neural networks for text mining in management field - Scientific research direction	Maite Jaca-Madariaga, Enara Zarrabeitia, Rosa Rio Belver, Izaskun Alvarez-Meaza
12	IPPMD Methodology for product development - Proposals to make the response process more efficient in a civil association	Michel Sánchez, Arturo Molina, Daniel Cortés
73	A Reference Framework for Assessing the Sustainability of Emerging Technologies	Javier Santos, Elisabeth Viles, Ana López, Oscar Revilla, Francisco-Javier Rios-Davila
89	Categorization of Professional Race Car Drivers Using Artificial Intelligence Techniques	Luis Isasi-Sánchez, Ignacio Villanueva-Freije
104	How Does a Successful Entrepreneur Look Like?	Pablo Hernandez-Martin, Jose Maria Sallan Leyes, Didier Grimaldi



Session C5 - Room Puig Adam  
**Education in Organizational Engineering**

**Chair: Alfonso Durán**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
110	How to Detect, Enhance and Consolidate STEM Profiles from Secondary School through “FI® in Schools”	Luis Isasi-Sánchez
111	Evaluation of the teachings received and the professional situation of graduates in Industrial Engineering at the ETSII in Madrid	Xosé Francisco Sanmartín Goyanes, Álvaro García, Miguel Ortega-Mier
114	Unravelling the Impact of Videoconferencing Platform Features in Synchronous Online Teaching	Karen Reina Sánchez, Juan-Pedro Arbáizar, Alfonso Duran Heras
127	Guidelines for designing an LLM chatbot to support first-year Bachelor’s Degree students at UPV with specific and general inquiries to reduce dropout rates	Arnau Iguualde-Sáez, Julien Maheut, Jose P. Garcia-Sabater

Session C6 - Room Artigas  
**Human Resources and Organizational Design  
 Project and Process Management**

**Chair: Ana Moreno**

<b>ID</b>	<b>Title</b>	<b>Authors</b>
15	Remote work as a challenge and lever for new organizational models	Luis Pelaez Campomanes, Ana Moreno Romero
57	Exploring the Nexus of Organizational Resilience and Antifragility	José Sevilla, José Juan Nebro-Mellado, Cristina Ruiz Martin, Adolfo López-Paredes
76	Case study: Creation of a quality unit in a public health organization	José Ignacio del Río Maza de Lizana, Virginia Herrera Pérez, M Carmen Pardo-Ferreira, Francisco Miguel Salguero Caparrós, Juan Carlos Rubio Romero
115	Human Oversight of AI: An operations management perspective	Jesús Salgado-Criado

**July 4th  
Poster Session P-1**

ID	Title	Authors
1	4.0 technologies for supplying the textile industry: preliminary results	Iker Laskurain Iturbe, Naiara Uriarte, Beñat Landeta, Germán Arana Landín, Cristina Peña, Amaia Mendoza
4	Optimization of textile SCs design and planning: a bibliometric analysis	Leandro L. Lorente-Leyva, María del Mar Eva Alemany-Díaz, Diego Peluffo-Ordóñez
11	A Tool for Exploring Building Comfort Retention	Pablo Aparicio Ruiz, Elena Barbadilla-Martín, María Rodríguez-Palero, Juan Carlos Ragel Bonilla
20	Trends of 5G in the Industry. Bibliometric analysis	Juan Carlos Ortega Ulloa, María Victoria de la Fuente, Lorenzo Ros-McDonell
24	Reusing Open Government Data. Do they make it possible to measure progress towards the SDGs? case study Open Data Bilbao-Bizkaia Room	Izaskun Alvarez-Meaza, Rosa Rio Belver, Enara Zarrabeitia, Naiara Pikatza
25	The contribution of Industry 4.0 to the prevention of occupational risks: case study smart Personal Protection Equipmen	Izaskun Alvarez-Meaza, Aitor Basañez, Gaizka Insunza-Aranceta, Enara Zarrabeitia
30	Analysis of the interaction between digital servitization and the industrial internet of things: a systematic review with bibliometric analysis	Jesús Rodríguez Martín, Itziar Martínez de Alegría, Ernesto Cilleruelo
38	Mitigating foreign exchange risk in infrastructure financing under Public-Private Partnerships: A case study of Brazil	Juan Martinez Alvarez, Fernandez, Rafael Rosillo, Sebastian Vargas
39	Application of the Analytic Hierarchy Process (AHP) in the effective implementation of Industry 5.0: A multidimensional approach	Omar León, Javier Puente, Gregorio Fidalgo, David De la Fuente
40	Beyond formal FMEA requisites in process risk management	Rafael Pastor Climent, José Costas Gual, Isabel Fernández Quesada, Raúl Pino Diez
41	Analysis of network sectorization techniques	Alicia Robles Velasco, Pablo Cortés, Luis Onieva, Antonio Lorenzo-Espejo
50	Environmental, Social and Governance (ESG) investment criteria presence in the digital sphere	Naiara Pikatza, Enara Zarrabeitia, Maite Jaca-Madariaga, Jon Borregan-Alvarado
62	Modernizing industrial operations strategies and solutions for overcoming limitations in blockchain and robotics implementation	Rommel Velastegui, Raul Poler, Manuel Diaz-Madroñero

**July 5th  
Poster Session P-2**

ID	Title	Authors
65	Impact of Decision Making on Sustainable Development in Production Environments	Israel Naranjo, Andrés Boza, Rocío de la Torre
68	Using IoT technologies to facilitate human – machine communication : a use case for setup time acquisition	Paula Morella, María Pilar Lambán, Jesús Royo, Juan Carlos Sanchez
71	Characterizing E-commerce Users to Improve Last-Mile Parcel Delivery: A Mobile App-Based Approach	Juan-Carlos Cortés-Muñoz, Alicia Robles Velasco, Luis Onieva, Alejandro Escudero-Santana
81	From accuracy to performance: Advanced demand forecasting in supply chains	Pelayo González Fernández, Pablo Rodríguez López, Manuel Luna, Borja Ponte
83	Recent trends of the Artificial Intelligence (AI) and the labour market	Itziar Martínez de Alegría, Willmer Guevara Ramirez, Rosa Rio Belver, Alvaro Luciano Rojas
84	Analysing operative comfort temperature ranges of Mediterranean climate adaptive models using fuzzy logic	Juan Carlos Ragel Bonilla, Pablo Aparicio Ruiz, Elena Barbadilla-Martín, Jose Guadix
86	A Machine Learning approach for predicting building occupant adaptive behaviour	Elena Barbadilla-Martín, Pablo Aparicio Ruiz, Pedro Orozco, Juan Carlos Ragel Bonilla, José Guadix
100	Action Research in Higher Education. MART, a Formula Student project by and for the University of Málaga	José María De la Varga-Salto, Fuensanta Galindo-Reyes, Adolfo López-Paredes, José Manuel González-Varona
103	Building blocks proposal towards a certification in Enterprise Resilience	Marco Arias-Vargas, Raquel Sanchis, Raul Poler
113	Meta-review of data science in industry 4.0/5.0 for enhancing supply chain resilience	Luz Mileny Buritica González, Raquel Sanchis, Manuel Diaz-Madroñero, Francisco Campuzano Bolarín
124	Mathematical models for the optimisation of maritime routes in container transportation	Paola Alzate, Josefa Mula, Raul Poler, Gustavo Isaza, Eliana Toro, Jorge Jaramillo
125	Exploring Industry 5.0: an Overview of AI-Driven Production Scheduling and Sequencing	Juan Paredes-Quevedo, Josefa Mula, Manuel Diaz-Madroñero

# Where are the rooms?

## Room M. F. del Amo

Corridor B, in front of the Auditorium

## Rooms C, G & Puig Adam

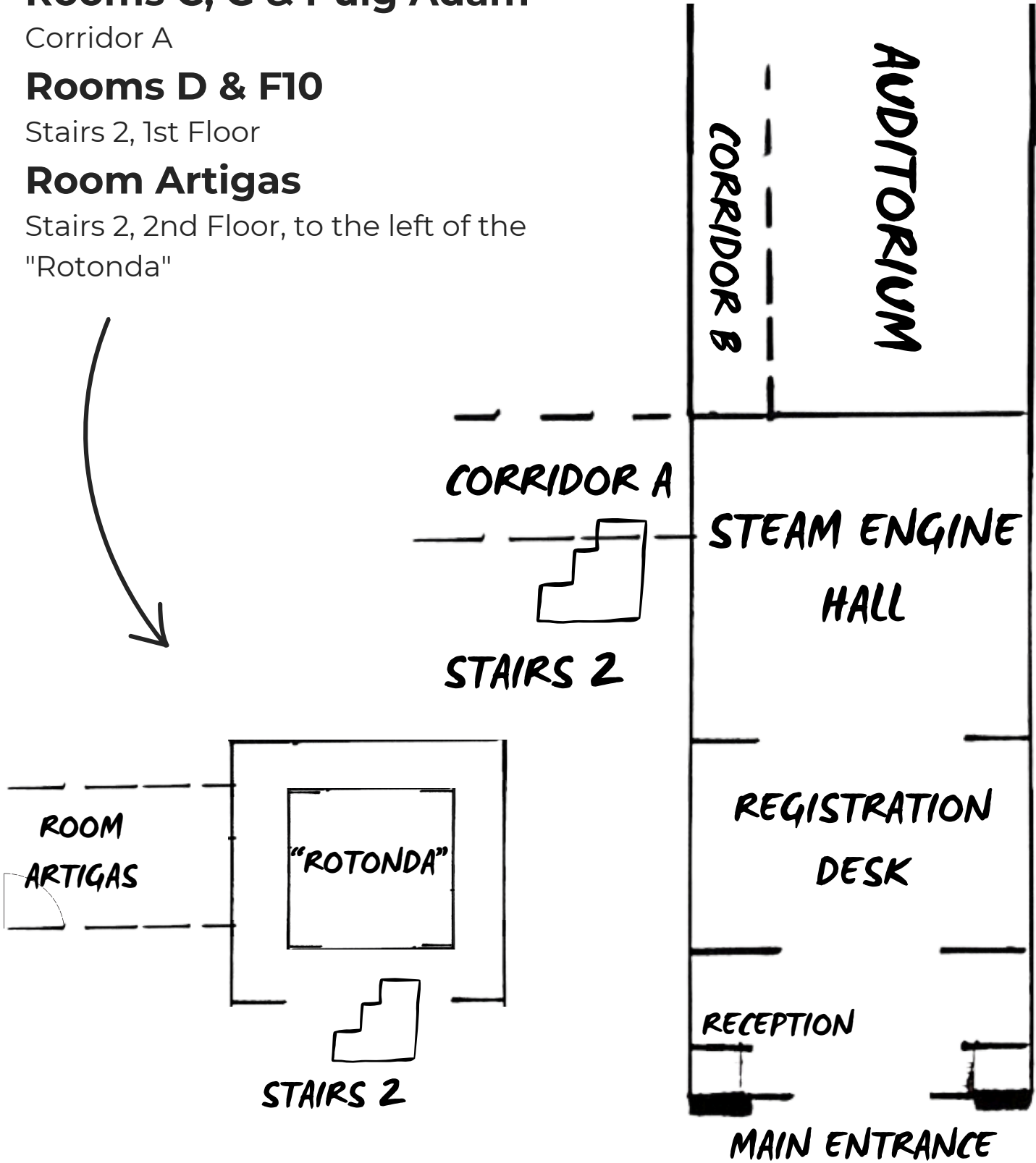
Corridor A

## Rooms D & F10

Stairs 2, 1st Floor

## Room Artigas

Stairs 2, 2nd Floor, to the left of the "Rotonda"





# Meeting point & Gala Dinner

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A **group will be organized** to go to the Gala Dinner from a Meeting Point so that anyone who wishes can be guided to the event.

## Meeting Point

- Place: ETSI Industriales – Steam Engine Hall (Registration Desk)
- Time: 19:30

## Gala Dinner

- Place: ETSI Montes, Forestal y del Medio Natural (Camino de las Moreras, s/n - Ed. Montes)
- Time: 20:00

The public transportation options to get to the Gala Dinner from the Meeting Point are:

### Option 1: Bus

Take **Bus 45** from the stop just down the Parque de la Transición, in front of ETSI Industriales. Ride to the end of the line (**Reina Victoria stop**) and then walk 14 minutes to the **dinner location**.



### Option 2: Metro

Walk 12 minutes from ETSI Industriales to Nuevos Ministerios. Take **Metro Line 6** (direction Cuatro Caminos) and get off at **Vicente Aleixandre** (3 stops). From Vicente Aleixandre, walk 11 minutes to the **dinner location**.





# Free time

In collaboration with the Service-Learning project (UPM) *Madrid a ciencia cierta: Diseño e implementación de rutas guiadas con temáticas STEAM* coordinated by **Gabriel Pinto Cañón**

**Do you want to visit the Altos del Hipódromo, a Silver Age emblematic zone of the Spanish culture, in Madrid close to the Conference?**

**Use the informational brochure provided at check-in!**





## ORGANIZERS

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Asociación para el Desarrollo de  
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