

Day 1 24th September, 2025

Technologies for smart and sustainable transport systems

TIME	TITLE	SPEAKER
14:15	Welcome by the Host	Carlo Poloni / University of Trieste, Italy
14:30	Welcome by ECCOMAS representative and Introduction to CM3-Transport Conference	Jacques Periaux / CIMNE, Spain
<i>Invited Lecture</i>		<i>Chairman: Carlo Poloni</i>
14:45	Radiative Transfer for Climate: Some Mathematical and Numerical Results	Olivier Pironneau / Sorbonne Université and Academie des Sciences, France
15:30	Coffee Break	
<i>Single Track Contributed Session</i>		<i>Chairman: Dietrich Knörzer</i>
16:00	Ammonia Combustion Hybrid Air Propulsion System	Shigeru Obayashi / Tohoku University, Japan
16:20	AI-Accelerated Fluid-Structure Interaction for Aerodynamic Appendages via Reduced Order Models	Chiara La Guardia / ESTECO, Italy
16:40	Parallelization in Coupling Algorithm for Static Aeroelastic Analysis of Aircraft Wings	Yuki Yatsu / Tohoku University, Japan
17:00	A Practical Adjoint-based Optimization Method for the Design of Aesthetically Pleasing Car Components	Evangelos Papoutsis Kiachagias / NTUA, Greece

Day 2 25th September, 2025

TIME	TITLE	SPEAKER
<i>Invited Lectures</i>		<i>Chairman: Tero Tuovinen</i>
9:00	Balancing Geometric Resolution and Smoothness in Adjoint Based Shape Optimisation	Ning Qin / The University of Sheffield, UK
9:45	Challenges in Modelling Passenger and Freight Mobility in an Era of Sustainable, Digitalized Transportation	Sergi Sauri Marchan / CENIT-CIMNE, Spain
10:30	Coffee Break	
<i>Parallel Sessions</i>		
<i>ML/AI and Optimization in Advanced Aerodynamics Applications</i> [Conference Hall]		Session Organizer: Bai Wen, CAE, China
<i>Multimodal Transport Applications and Marine Research Sustained by Friuli Venezia Giulia Region</i> [Meeting Room]		Session Organizer: Carlo Poloni, University of Trieste, Italy
11:00	Efficient Aerodynamic Evaluation Strategy for Vertical Tail with Hybrid Laminar Flow Control Based on Machine Learning	Han Yi / AVIC, China
11:00	A Genetic-Based Algorithm for Solving a MINLP-Type Problem in the Horizontal Alignment Design of Highways and Railways	Pedro Blanco-Valcarcel / Universidad de Santiago de Compostela, Spain
11:20	Data-Driven Turbulence Modeling from DDES Data and its Applications in Numerical Simulation of Separated Flow	Chengeng Qian / AVIC, China
11:20	Uncovering Process Variants in Logistics Operations: a Data-Driven Approach	Sylvio Barbon Junior / University of Trieste, Italy
11:40	Design Method of Wide Speed Domain Airfoil Based on Generative Artificial Intelligence Model	Chao Feng / Zhejiang University, China
11:40	Optimizing Railway Capacity of a Regional Logistics System in Italy: Methodological Issues and Solutions	Giovanni Longo / University of Trieste, Italy

12:00	Numerical Simulation-based Analysis of Blade Number Influence on Aerodynamic Interference Characteristics of Tiltrotor Quadrotors	Yuan Zhao / CAE, China	12:00	Optimisation of an External Acoustic Black Hole to Minimize Structure Borne Noise on Ship's Structures	Giovanni Rognoni / University of Trieste, Italy
12:20	Bayesian Optimization Method for Airfoil Design with Pressure Distribution-Guided Objective and Constraints	Zijing Liu / CAE, China	12:20	m.a.ri.n.A.I. – Data-Driven Real-Time Hydroacoustic Methods for Propeller Design under Cavitation	Nicola Demo / SISSA, Italy
12:40	Lunch				
<i>Harnessing Digital Twins and AI to Enhance Research Infrastructure Efficiency and Sustainability – part 1</i> [Conference Hall]		Session organizer: Raffaele Salvatore Donelli / Dream Innovation, Italy Co-chairman: Andrea Conte / CIRA, Italy	<i>Advanced Numerical Methods</i> [Meeting Room]		Chairman: Olivier Pironneau / Sorbonne Université and Academie des Sciences, France
14:00	Development of a Digital Twin to Enhance and Innovate CIRA Icing Wind Tunnel Facility	Raffaele Salvatore Donelli / Dream Innovation, Italy	14:00	Coupling Immersed Boundary Method with Wall Function for High Reynolds Number Compressible Flows on Adaptive Cartesian Grids	Ning Zhao / NUAA, China
14:20	A Digital Twin Framework for Turbine Blade Health Monitoring and Performance Prediction	Shahrokh Shahpar / Rolls-Royce, UK	14:20	A High-Performance Lagrangian Particle Tracking Algorithm Utilizing Task Parallelism	WenLong Xie / NUAA, China
14:40	LESSICE Project Overview and Preliminary Results	Francesco Capizzano / CIRA, Italy	14:40	Quantum and Classical Approaches to the Optimization of Highway Platooning: The Two-vehicle Matching Problem	Chinonso Onah / RWTH Aachen University, Germany
15:00	Meshless RBF-FD Approach for Two-Phase Flow Simulation in the NOZZLE-TEC Project	Mauro Munerato / ESTECO, Italy	15:00	Non-convex Polyhedra for Rail Dam Modeling at Full Scale	Charles Radeke / Particle Simulation and Algorithmic Advice, Germany
15:20	Coffee Break				
<i>Harnessing Digital Twins and AI to Enhance Research Infrastructure Efficiency and Sustainability – part 2</i> [Conference Hall]		Session organizer: Francesco Capizzano / CIRA, Italy Co-chairman: Shahrokh Shahpar, Rolls-Royce, UK	<i>Digitalized Methods and Tools Challenges for Sustainable Air Transport</i> [Meeting Room]		Session organizer: Jacques Periaux, Co-chairman: Tero Tuovinen
16:00	CFD Analyses for a Spray-Nozzle: A First Step Towards the CIRA Icing Wind Tunnel Digitalization	Andrea Conte / CIRA, Italy	16:00	Data-Driven Aeroelastic Analysis Towards Digital Aircraft Design	Yoshiaki Abe / Tohoku University, Japan
16:20	In Situ Ice Monitoring on Irregular Surfaces Using a Flexible Ultrasonic Transducer	Yan Wang / NUAA, China	16:30	Gradient-Based vs Gradient-Free Optimization in Turbomachinery Design: Efficiency, Computational Cost, and Multimodality	Arnaud Châtel / VKI, Belgium
16:40	Numerical Study on Ultrasonic Quantitative Measurement of Aircraft Icing Density	Yuan Wang / NUAA, China	17:00	Shock Wave Boundary Layer Interaction – Mitigation of Unsteady Effects	Pawel Flaszynski / Polish Academy of Sciences, Poland
20:00	Social Dinner				

Day 3 26th September, 2025

TIME	TITLE	SPEAKER
<i>Invited Lecture</i>		<i>Chairman: Domenico Quagliarella</i>
9:30	Greener Ships, Smarter Tools: Advancing Computational Frontiers in Maritime Design and Retrofit	Matteo Diez / CNR-INM, Italy
10:15	Coffee Break	
<i>Single Track Contributed Session</i>		<i>Chairman: Domenico Quagliarella</i>
10:40	Turbulence Modelling for 3D Boundary Layer	Yang Qifan / Tsinghua University, China
11:00	Eikonal Approach for Global Free Flight Optimization	Arturas Jocas / ZIB, Germany
11:20	Receptivity to Free-Stream Disturbance for Hypersonic Flow Over a Blunt Wedge	Zhichao Zhu / Tsinghua University, China
11:40	A Multi-Fidelity Optimization of Hypersonic Vehicles	Roberto Carbone / University of Genoa, Italy
12:00	Design Optimization of Composite Aircraft Wings Considering Coupled Aeroelasticity and Geometrical Nonlinearity	Yajun Liu / Tohoku University, Japan
12:20	Closing remarks	Dietrich Knörzer
14:30	Visit to Fermi FEL – Sincrotrone Trieste	

Organizers



UNIVERSITÀ
DEGLI STUDI
DI TRIESTE



Italian Aerospace Research Centre

Sponsor



CONFERENCE VENUE

Conference Hall at Area Science Park,

Padriciano 99, Trieste, Italy

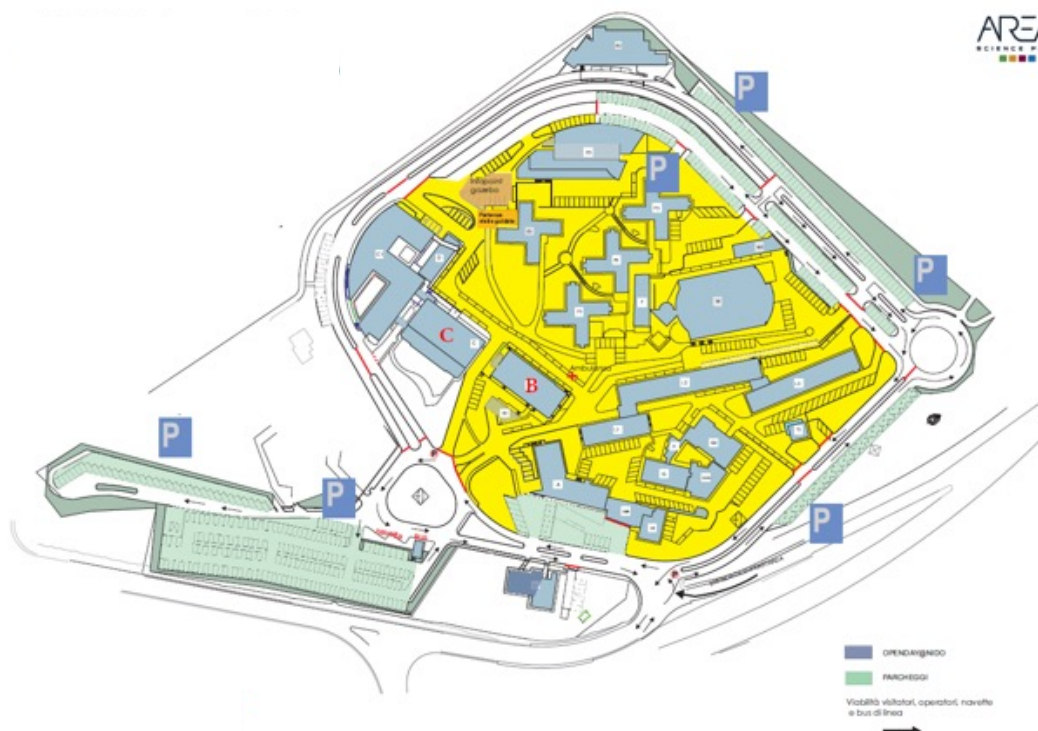
P: Bus stop

B: ESTECO Hq

C: AREA main building

The conference will be held in the main building C.

The Padriciano Campus – administrative headquarters of Area Science Park – can be reached by public transport starting from the Central Railway Station ([Bus line 51](#)) or by car from highway junction13, Padriciano exit.



Logistics Information

Shuttle service

24th September

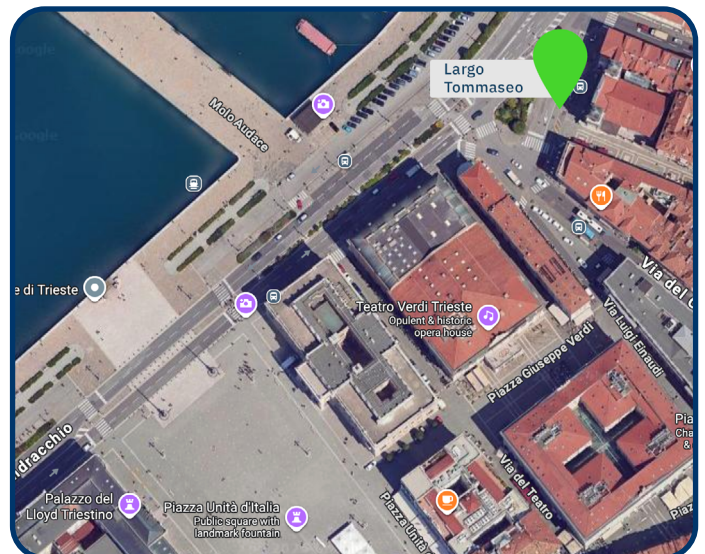
5:45 PM: pick-up AREA bus stop to Trieste city center (stop near Piazza Unità)



25th September

8:10 AM: morning pick-up bus stop **Piazza Tommaseo** (see the map), Trieste

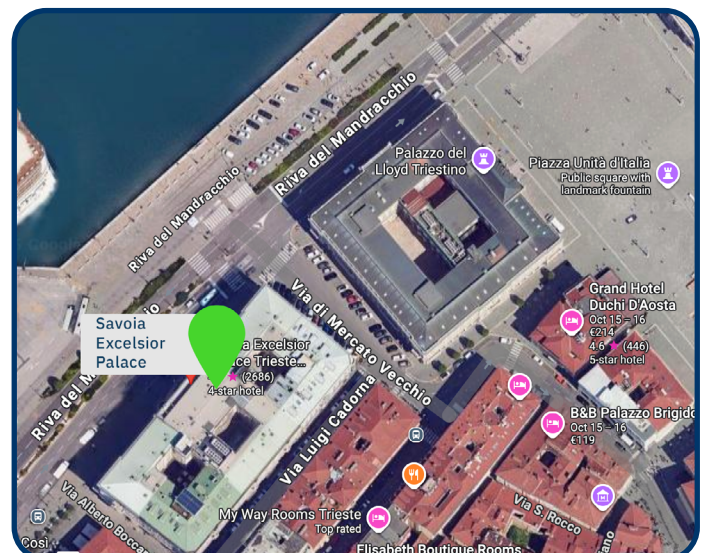
5:45 PM: afternoon pick-up **AREA bus stop** to Trieste city center (stop near Piazza Unità)



26th September

8:40 AM: pick-up bus stop Piazza Tommaseo (see the map), Trieste

No shuttle service at the end of the conference.



Social dinner

25th September

8:00 PM: [Savoia Excelsior Hotel](#) Restaurant (fish menu)