DAY 2	Thursday 29th May 2025					
08:00-08:25	Coffee and Refreshments					
Keynote 08:30 - 09:15	Chair: Prof Paola Cinnella Sorbonne University	Prof George Karniadakis (Brown University, USA) Hidden fluid mechanics				
09:15 - 10:00		Prof Koji Fukagata (Keio University, Japan) Applications of convolutional neural networks to fluid mechanics problems				
10:00 - 10:15		Paola Cinnella (University of Sorbone), Wagdi Habashi (McGill University) Christos Makrides (Imperial College)				
10:15 - 11:00	Coffee Break, Refreshments					
Parallel Sessions	Turbulence	Turbomachinery and airfoils	Physics-informed models	Inference, Sensing, Inverse Modeling	Heat transfer	Multi-phase
Chair	Prof Paola Cinnella Sorbonne University	Prof Kyriakos Giannakoglou National Technical University of Athens	Prof Koji Fukagata Keio University	Prof George Karniadakis Brown University	Dr Steffen Schmidt TU Munich	Prof Michele Battistoni University of Perugia
11:00 - 11:15	***S.5-A.4 Marco Castelletti*** Maurizio Quadrio *A proposal for automated turbulence modeling* Politecnico di Milano	***S.10-A.1 Dylan Rubin*** *Budimir Rosic* *iChemZIP: Accelerated Modeling of Complex Aerothermochemical Interactions in NovelTurbomachines for Sustainable High-Temperature Chemical Processes* *University of Oxford*	***S.11-P.1 Jose Florido*** P K Jimack, A Khan, H Wang *Adaptive Collocation Point Sampling Strategies for Physics Informed Neural Networks (PINNs)* University of Leeds	***S.2-A.5 Malte Ole Loft*** H. Schwarz,T. Rung *Data-based surrogate modeling to reconstruct pressure fields of ships in arbitrary sea-states* Hamburg University of Technology	***S.9-P.1 Justine Marie*** C. Allery, C. Béghein, V. Melot; M. Balin *Simulation of Heat Exchanger Transient Phases Using Non-Intrusive Parametric ROMs* LaSIE / Naval Group	***S.12-A.1 Mónica Crisitna Ferreira da Silva Filgueiras*** F.S. Vilhena Costa, J. Filgueiras, M.C.F. Silva, Z. Kokkinogenis, J.B.L.M. Campos *Integrating Super-Resolution and Segmentation for Enhanced Bubble Identification in Multi-Phase Flow* CEFT
11:15 - 11:30	***S.5-P.4 Filipi Teixeira Kunz*** B Y Zhou , R Ewert *Applications of a Machine-Learning Enhanced FRPM Model on Generating Trailing Edge Turbulence* Georgia Institute of Technology	***S.10-P.1 Anirudh N. Rao*** M. Carta, T. Ghisu, S. Shahpar, F. Montomoli *Computer Vision-Based Performance Forecasting for Turbomachinery* Imperial College London	***S.11-P.2 Miranda Jo Suvarna Horne*** P K Jimack, A Khan, H Wang *Hard Constraint Projection in a Physics Informed Neural Network* University of Leeds	***S.2-A.6 Changbeom Kim*** Sehyeong Oh, Haecheon Choi *Prediction of a scalar source location from remote sensors in turbulent flow using machine learning* Seoul National University	***S.9-P.2 Meng Zhang*** Zhihui Li, Zhibin Yu *Machine Learning-Powered Prediction Framework for Household Heating Demand* University of Liverpool	***S.12-PO.1 Sahba Zehisaadat*** Steffen J. Schmidt; Nikolaus A. Adams *Fine-tuning a foundation model on multiphase problems* Technical University of Munich
11:30 - 11:45	***S.5-A.5 Chonghyuk Cho*** Haecheon Choi *A dynamic recursive neural-network-based subgrid-scale model for large eddy simulation* Seoul National University	***S.10-P.2 Georgios Goinis*** S. Satcunanathan, M. Aulich, C. Voß *Assessing the Use of Transformer AI Models as CFD Substitutes in Airfoil Optimization* German Aerospace Center	***S.11-P.3 Mohammad Sheikholeslami*** S. Salehi, W. Mao, A. Eslamdoost, H. Nilsson *Comparative Evaluation of Periodic Boundary Condition Approaches in PINNs* Chalmers University of Technology	***S.2-A.7 Sarah Kramer*** L. Souverein, L. Agostini, G. Waxenegger-Wilfing, S. Schlechtriem *Flow field reconstruction of rocket engine turbine on sparse sensors* University of Stuttgart	***S.9-P.3 Matthew Hughes*** Z. Chen, A. S. Lobasov, M. Bucci,C. N. Markides *On the Use of Artificial Intelligence to Accelerate the Processing and Analysis of High-Throughput High-Resolution Experimental Boiling Heat Transfer Data*	***S.12-P.1Shahab Mirjalili*** M Cutforth *Autoencoders for reconstructing interfacial multiphase flows* KTH Royal Institute of Technology
11:45 - 12:00	***S.5-P.5 Gulliver Van Essche*** T. Haas, J. Decuyper, T. De Troyer, M. C. Runacres *Data-driven Modelling of the Wake of a Pitching Actuator Disk* Vrije Universiteit Brussels	***S.10-P.3 Simon Paquette-Greenbaum*** E Laurendeau and D Vidal *Rotorcraft Airfoil Full State-Space AI-Accelerated Predictions of Aerodynamic Coefficients* Polytechnique Montréal	***S.11-P.4 Javier Orera*** Javier Murillo *Inference of lumen area and PWV in a healthy adult thoracic aortic network using PINNs* University of Zaragoza	***S.2-P.10 Jiaqing Kou*** *Y. Wang, Weiwei Zhang* *Knowledge-based and Data-Driven Causal Analysis for Galerkin Models Exemplified by Turbulent Shear Flows* Northwestern Polytechnical University	***S.9-P.4 Antonios Kladas*** I. Alonistiotis *Neural Network-Based Estimation implemented in a particular Dielectric Oil Spray Electric Motor Cooling Technique* National Technical University of Athens	***S.12-A.2 Kie Okabayashi*** Toshikazu Noda, Yuina Motozono *A priori and a posteriori tests of data-driven cavitation model* Osaka University
12:00 - 12:15	***S.5-P.6 Maximilian Reissmann*** Y Fang, A S H Ooi, R D Sandberg *Accelerating Evolutionary RANS Turbulence Modelling through Transformer-based Augmentation* University of Melbourne	***S.10-P.5 Wenbo Cao*** Weiwei Zhang *Solving high-dimensional parametric flow problems around airfoils using neural network* Northwestern Polytechnical University	***S.11-A.1 Amin Zargaran*** Uwe Janoske *Modeling Flow Dynamics in Rotor-Stator Mixers using Data-Free Physics-Informed Neural Networks* University of Wuppertal	***S.2-A.8 Damien Rigutto*** Miguel Alfonso Mendez. M. Ratz *Anisotropic and Multi-resolution RBFs for mesh-less Data Assimilation of scattered data* Von Karmar Institute for Fluid Dynamics	***S.9-P.5 Savio Poovathingal*** Vijay B M *A supervised learning model to capture ablation of heat shields* University of Kentucky	***S.12-A.3 Joonsik Hwang*** Choongsik Bae, Ioannis K. Karathanassis, Phoevos Koukouvinis, Manolis Gavaises *Machine-learning based GDI spray prediction* KAIST
12:15 - 12:30	***S.5-P.7 Ali Mahdi*** Thomas Berthelon and Guillaume Balarac *Multi-fidelity approach for turbulent flows prediction* Université Grenoble Alpes, CNRS	***S.10-A.2 Konstantinos Kellaris*** Yu Ding, Marinos Manolesos *On the use of Hidden Markov Models to investigate airfoil stall dynamics* National Technical University of Athens	***S.11-P.5 Jingyu Wang*** Lin Lu , Yiye Zou, Xiaogang Deng *MbPINN: Mesh-based Physics-Informed Neural Networks for Global and Local Hyperbolic Conservation* Sichuan University	***S.2-A.9 Miguel Alfonso Mendez*** Manuel Ratz; Samuel Ahizi; Alessandro Parente *A Framework for Meshless Data-Driven Decompositions with RBF-Based Inner Products* Von Karmar Institute for Fluid Dynamics	***S.9-P.6 Gautham Krishnamoorthy*** Luke Holtshouser, Krishnamoorthy Viswanathan *Predicting Heat Transfer Rates in Laminar Supercritical Flows using Machine Learning Approaches* University of North Dakota	***S.12-P.2 Afshin Goharzadeh*** A Goharzadeh, H Ait Abderrahmane *Data-Driven Model for Swirling Jet Atomization* Khalifa University
12:30 - 12:45	***S.5-A.6 Guillaume Vignat*** Jen Zen Ho, Beverley Yeo, Bassem Akoush, M. Ihme *BLASTNet: Accessible community-involved big data as key-enabler for Fluids-AI* Stanford University		***S.11-P.6 Levent Ugur*** Beckett Y. Zhou *Data-Driven Stochastic Turbulence Generation via Physics-Informed Field Inversion Machine Learning* Georgia Institute of Technology			***S.12-P.3 Joel Sena Sales Junior*** E F De Paula Filho *Use of LLM models on the Computational Hydrodynamic evaluation of floating bodies in Waves* Federal University of Rio de Janeiro
12:30-14:00	Lunch (Maich restaurant)					
Keynote 14:00 - 14:45	Chair: Prof Christoph Bruecker City St George University London	Prof Heinz Pitsch (RWTH Aachen University, Germany) Super-resolution by generative adversarial networks for modeling intrinsic flame instabilities in turbulent hydrogen flames				
Keynote 14:45 - 15:30		Prof Miguel Alonso Mendez (von Karman Institute for Fluid Dynamics, Belgium) Scientific machine learning for digital twinning and control				
15:30 - 16:30	*Chair:Prof Manolis Gavaises City St George University of London*	Round Table I: Q & A with Industry Panel *Shahrokh Shahpar (Rolls-Royce Aerospace), George Smyrlis (Toyota Europe), Simon Weissenberger (Andritz Hydro GmbH), Yohan Blacodon (Maiaspace), Tina Vartziotis (TWT GmbH)*				
16:30 - 17:00	Coffee Break and Refreshments					
Parallel Sessions	Optimization and Design	Physics-informed models	Industrial & Applied ML in Fluid Systems	Experimental data	Industrial & Applied ML in Fluid Systems	Digital Twins
Chair	Prof Shahrokh Shahpar Rolls-Royce Aerospace	Dr Foivos Koukouvinis Cyprus University of Technology	Dr Marinos Manolesos National Technical University of Athens	Prof Tobias Schneider EPFL - Swiss Federal Institute of Technology Lausanne	Prof Jiaqing Kou Northwestern Polytechnical University	Dr Wilfried Edelbauer AVL List Austria
17:00 - 17:15	***S.14-A.1 Simon Weissenberger*** Kontoleontos E.Sobieczky F. Dudkin E. Roßbory M.; P. Bhargav, Mock T. *AI assisted design of hydraulic turbine components and plausibility check of experimental data based on anomaly detection techniques* Andritz Hydro GmbH	***S.11-P.7 Vladimir Vanovskiy*** G M Shutov, D I Akhmetov, E V Burnaev *Physics-informed local-global underground fluid flow modeling with multiple sinks* Skolkovo Institute of Science and Technology	***S.6-P.8 Alessandro Pela*** M. Marconcini, A. Arnone, A. Agnolucci, E. Belardini, R. Valente, A. Grimaldi, L. Toni *Convolutional Neural Network Approach for Impeller Blade Loading Inference* University of Florence	***S.13-P.1 Ryo Naramura*** C. Abe, Y. Sasaki *Real-time feedback control of flow field behind a cylinder using Sparse Processing PIV and plasma actuatorsExperimental data* Nagoya University	***S.6-A.9 Ren Sato*** *Eisuke Nakahama; Yusuke Nabae; Hiroshi Gotoda* *Early detection of thermoacoustic instability in a swirl-stabilized turbulent combustor using a noise-induced dynamical system and a deep neural network* Tokyo University of Science	***S.15-A.1 Sebastiano Randino*** L. Schena, N. Coudou, E. Garone, M. A. Mendez *Real time data assimilation for the digital twinning of wind farms* Von Karman Institute for Fluid Dynamics
17:15 - 17:30	***S.14-P.1 Kyriakos Giannakoglou*** *M G Kontou, V G Asouti, X S Trompoukis* *CAD-based Machine Learning Model for the Aerostructural Shape Optimization of the DLR-F25 Transport Aircraft* National Technical University of Athens	***S.11-P.8 Faras Brumand-Poor*** D. Lam Ming Hui; N. Plückhahn; M. Rom; K. Schmitz *Physics-Informed Neural Networks for Non-Newtonian Lubricated Contacts: Advancing AI-Driven Fluid Mechanics* RWTH Aachen University, Institute	***S.6-A.6 Tianning (Tim) Tang*** Y. Chen,Rui Cao, W. Mostert, Paul H. Taylor, M. L. McAllister, A. H. Callaghan,T. A. A. Adcock *Discovering Boundary Equations for Wave Breaking using Machine Learning* University of Manchester	***S.13-P.2 Simo Makiharju*** A.M. ALI *PINNs Augmented Tomographic X-ray Particle Velocimetry* University of California Berkeley	***S.6-P.11 Yohan Blacodon*** Y Le Guennec, Y Blacodon, S Tollis, T Defoort, J.V. Aguado, D.Borziachello *AI-CFD Based Analysis for Propellant Management in Cryogenic Tanks* Miura Simulation	***S.15-A.2 Lorenzo Schena*** P. Marques, R. Poletti, S. Ahizi, Jan van den Berghe, M. A. Mendez *Reinforcement Twinning: from digital twins to model-based reinforcement learning* Von Karmar Institute for Fluid Dynamics
17:30 - 17:45	***S.14-A.2 Hendrik von Schöning*** Mindy Liu Perkins, Thomas Wolf *An aerodynamics copilot for automotive exterior designers* TWT Gmbh Science & Innovation	***S.11-P.9 Igarashi Daichi*** S Kumagai, Y Yokoyama, Y Jingzu, M Horie, Y Tagawa *3D Fluid Stress Field Reconstruction from Flow Birefringence: Physics-Informed Convolutional Encoder-Decoder Approach* Tokyo University of Agriculture and Technology	***S.6-P.9 Zhou Ziheng*** He Bijiao;Z. Baiyi; W. Huiyan, Wang Weizong *Vacuum plume field reconstruction method for variable thrust engines based on deep learning* Beihang University	***S.13-P.3 Zhi Wu*** Jiayi Lin, Yangkun Zhang, Yu Zhou *Comparative Experimental Study on Jet Mixing Enhancement using Deep Reinforcement Learning and Genetic Programming* Harbin Institute of Technology	***S.6-PO.1 Byungjin An*** *Mode Analysis of Unsteady Flow in Centrifugal Pumps* EBARA Corporation	***S.15-A.3 Angelina Pytharouliou*** G. Georgopoulos. P. Delizisis, A.Kopanidis *DIGITAL TWIN: Spectral Analysis Verification of Payload Handling Operation on Vessels* Asso.subsea
17:45 - 18:00	***S.14-A.3 Chiara Calascibetta*** Laetitia Giraldi, Zakarya El Khiyati, Jérémie Bec *Harnessing Swarms to Optimize Transport of Interacting Active Particles* Centre Inria d'Université Côte d'Azur	***S.11-A.2 Tamara Gammaidoni*** Alessio Bertrami; Jacopo Zembi; Michele Battistoni *Towards Efficient Heat Transfer Simulations: A Comparative Study of PINN vs. CFD* University of Perugia	***S.6-P.10 Amir Momeni Dolatabadi*** Giuseppe Petruccelli, Aki Grönman, Teemu Turunen-Saaresti *Modelling Supervised Machine Learning to Predict Supercritical CO2 Characteristics Around Widom-line* LUT University, School of Energy Systems	***S.13-P.4 Christoph Bruecker*** R. Glick, V. Suntharesweran, S. Ponnusami *Underwater object tracking using whisker-type flow sensors and Machine Learning* City St George's	***S.6-A.10 Dehui Huang*** Luc Pastur; Nan Deng and Bernd Noack *Least-order parametric modeling of an incompressible open cavity flow* ENSTA Paris	***S.15-A.4 Hamed Abedini*** Simona Bennici, Armand Gering *Development of a Digital Twin for Alkaline Water Electrolyzers* *John Cockerill Hydrogen*
18:00 - 18:15	***S.14-A.4 Usamah Abdulsamad Adia*** Amirul Khan; Andrew Sleigh; He Wang *Machine Learning Based Intelligent CFD Surrogates for Interactive Design Exploration of Built Environments* University of Leeds	***S.11-A.3 Brian Thurow*** Dustin Kelly; Peter Mouaikel *FluidNeRF: a Machine Learning Based Approach for Physics Informed 3D Flow Tomography* Auburn University	***S.6-A.7 Xiaotong Luo*** Jun Yin; Simon Kuhn *Implementation of a data-driven model for mesh-induced error corrections in CFD simulations of stirred tank reactors* KU Leuven	***S.13-A.1 Guillaume Vignat*** B. Akoush, R. Finley, Wai Tong Chung, M. Ihme *Experimental demonstration of deep reinforcement learning adaptive control of thermoacoustic instabilities in a lean-premixed methane/hydrogen/air combustor* Stanford University	***S.6-P.12 Ian Hubbard*** Themistoklis Melissaris *Data & Physics-Driven Graph Convolutional Networks for Rapid Cavitation Energy Predictions on Marine Propeller Blades* Wartsila Propulsion Netherlands	***S.15-A.5 Yannick Lecomte*** M. Ratz, A. Vardanyan, J. Christophe and M. A.Mendez *Reinforcement twinning for attitude control of multirotor drones: an experimental proof of concept* Von Karmar Institute for Fluid Dynamics
18:15 - 18:30	***S.14-A.5 George Klavaris*** *A. Gantner, T. Danninger, W. Bower* *A Data-Driven Turbulence Modelling Framework based on Machine Learning for Industrial Aero-Engine Design* Ansys UK	***S.11-A.7Hossein Sojoudi*** Ehsan Khoshbakhtnejad *Predicting Coefficient of Restitution of Ice Particles Impacting Surfaces: A Machine Learning-Based Approach* University of Toledo	***S.6-A.8 Nikolaos Prasianakis*** H.Peng, M.Baur, R.Boiger, A.Mokos; S.V. Churakov *Enhancing Reactive Transport Simulations with Machine Learning, Adaptive Algorithms, and High-Performance Computing* Paul Scherer Institut (PSI)	***S.13-A.5 Theo Käufer*** J. D Toscano, Z. Wang, M. Maxey, G. E Karniadakis, C. Cierpka *Inferring temperature from velocity data in turbulent thermal convection by PIML: Concept and experimental validation on simultaneously measured 3D temperature and velocity data* Technische Universität Ilmenau	***S.6-P13 Hajaliakbari Nasrollah*** D Head and O Harlen *Interaction of Sedimenting Semi-Flexible Fibres in Stokes Flow* University of Leeds	***S.15-A.6 Romain Poletti*** Lorenzo Schena, Lilla Koloszar, Joris Degroote *A hybrid model-based/model-free approach for flight control of flapping wing drones using reinforcement twinning* Von Karmar Institute for Fluid Dynamics