

DAY 2					
08:00-08:45	Coffee and Refreshments				
Keynote 08:45-09:30	Chair: Oliver Schmidt, UC San Diego, USA	Bernd R. Noack, Shenzhen University, China			
		Aerodynamic technologies and machine learning for the aerial society --Making drones and air taxis energy efficient and gust-safe			
Jiaqing Kou, Northwestern Polytechnical University, China					
Keynote 09:30-10:15	Explainable Generative Machine Learning for Aircraft Aerodynamic Configuration Design				
10:15-11:00	Coffee Break, Refreshments				
Parallel Sessions	4. Physics-informed models	5. Reinforcement learning, Dimensionality Reduction and Reduced Order Models	11. Industrial & Applied ML in Fluid Systems	13. Multi-phase	6. Combustion, Flames, Sprays
Chair	Dr Jenna Poonoosamy, Forschungszentrum Jülich, Germany	Prof George Papadakis, Imperial College London, UK	Prof Min Xu, Shanghai Jiao Tong University, China	Prof David Hung, Shanghai Jiao Tong University, China	Prof Arne Scholtissek, Technical University of Darmstadt, Germany
ROOM	ROOM A	ROOM B	ROOM C	ROOM D	ROOM E
11:00 - 11:15	S.4-A.7 Simon Wassing Simon Wassing, Tobias Leicht, Philipp Bekemeyer CFD-informed Neural Networks (CINNs) – Integrating an industrial-grade CFD solver into Physics-Informed Neural Networks German Aerospace Center (DLR), Germany	S.5-A.8 Oliver Schmidt Oliver Schmidt, Aaron Towne The AIAA Data-Driven Modeling of Fluid Flows Community Challenge UC San Diego, USA	S.11-P.1 Ron Barron Love Fadai, Vatsal Shah, Ronald Barron, Mohammad Hassanzadeh Improving PINN Stability for Convection-Dominated Boundary Value Problems via Artificial Damping Regularization University of Windsor, Canada	S.13-A.4 Hendrik Hessekenkemper Hendrik Hessekenkemper, Guangyuan Huang, Lanfian Wang, Tian Ma Deep Learning Models for 3D Lagrangian tracking in disperse 3-phase flows Helmholtz-Center Dresden-Rossendorf, Germany	S.6-P.1 Baptiste Romain Baptiste Romain, Adrien Langlais, Joël Dupays, Laurent Catoire Chemistry reduction and acceleration based on neural network surrogate ONERA, France
11:15 - 11:30	S.4-P.8 Ian Hubbard Ian Hubbard, Evert-Jan Foeth Fidelity-Scaling via Physics-Informed Graph Learning on Marine Propeller Blades Wartsila Propulsion Netherlands	S.5-A.9 Haoyan Li Haoyan Li, Alberto Procacci, Alessandro Parente, Elcott Lumet, Melanie C Rochoux Parametric Prediction of Turbulent Flows Using a Novel Condition-guided β -variational Auto-encoder Université Libre de Bruxelles, Belgium	S.11-A.2 Jialei Yan Jialei Yan, Ruotong Wu, Chengy Lu Deep learning for the dynamic characteristics and stability of floating structures under complex marine environments Harbin Institute of Technology, China	S.13-A.5 Jiyang Xu Jiyang Xu, Josef Winter, Steffen Schmidt, Nikolaus A. Adams Multi-Fidelity Heteroscedastic Gaussian Processes for Cavitation Wall Load Prediction Chair of Aerodynamics and Fluid Mechanics, Technical University of Munich, Germany	S.6-A.2 Cédric Mehl C. Mehl Acceleration of chemical kinetics integration in combustion CFD using artificial neural networks IFPEN, France
11:30 - 11:45	S.4-A.9 Gulliver Van Essche Gulliver Van Essche, Gonçalo Granjal Cruz, Tim De Troyer, Mark Runaens, Jan Deceper Physics-informed learning of unsteady fluid systems via dynamical invariants VUB, Belgium	S.5-A.10 Miguel Pérez Cuadrado Miguel Pérez Cuadrado, Giorgio Maria Cavalazzi, Alfredo Pirelli Latent-Space SINDy-Discovered ODEs for Reconstructed Turbulent Dynamics with Causal Analysis of Attractor Transitions City St Georges, University of London, UK	S.11-A.3 Xiao Xue Xiao Xue, Tianyue Yang, Mingyong Gao, Mada Wang, Kewei Zhu, Peter V. Coveney Uni-Flow: A Unified Autoregressive-Diffusion Framework for Stable Long-Horizon and High-Resolution Multiscale Flow Modeling University College London, UK	S.13-P.6 Connor Nolan Connor Nolan, Lee Mortimer, Peter Jimack, Michael Fairweather Machine Learning-Based Prediction of Non-Spherical Particle Agglomeration University of Leeds, UK	S.6-A.3 Hongchao Chu Hongchao Chu, Haogeng Bai, Mingren Gao, Alberto Procacci, Shibam Bose, Hesheng Bao, Alessandro Parente, Heinz Pitsch Uncertainty-guided active Co-Kriging for cost-efficient determination of hot-spot surface ignition of hydrogen-air mixtures Institute for Combustion Technology, RWTH Aachen University, Germany
11:45 - 12:00	S.4-P.10 Amelie Lam Amelie Lam, Håshée Mehus, André Ferrari, Sara El Bouch Solver-In-The-Loop Training with Multistep Inputs for Capturing Fine-Scale Turbulence Laboratoire Lagrange, France	S.5-P.11 Gianluigi Rozza Gianluigi Rozza Accelerating Numerical Simulation in CFD by Reduced Order Surrogate Modelling and Scientific Machine Learning SISSA Trieste, Italy	S.11-P.4 Jing Li Jing Li, Changtong Luo Sparse Rational Learning for Aerodynamic Prediction Institute of Mechanics, Chinese Academy of Sciences, China	S.13-P.7 Zikai Zhang Zikai Zhang, David L. S. Hung Full-Field Reconstruction of Droplet Impact via Multi-Fidelity Physics-Informed Neural Networks Shanghai Jiao Tong University, China	S.6-A.4 Min Xu Prof. Min Xu, Prof. Xuesong Li High-Spatiotemporal-Resolution Combustion Diagnostics using AI-based Reconstruction Techniques Shanghai Jiao Tong University, China
12:00 - 12:15	S.4-A.11 Matthias Möller Matthias Möller iGANets: Blending isogeometric analysis with operator learning Delft University of Technology, The Netherlands	S.5-A.12 João Victor Neves Neiva João V. N. Neiva, Luc Pastur, Igor B. de Paula, Omar E. H. Pardo Experimentally-based least-order model of the transient growth of a laminar separation bubble ENSTA-Paris, France	S.11-A.5 Xiao Xiao Xiao Xiao, Bruno Delhom, Chauski Habchi, Julien Bobbot Development of an ANN-ISAT Framework for Real-Fluid Modeling with Application to $\text{NH}_3\text{-H}_2$ injection system. IFPEN, France	S.13-A.8 Bruno Delhom Bruno Delhom, Chauski Habchi, Olivier Collin, Julien Bobbot Development of a multi-species real fluid modeling approach using an innovative machine learning method, application to MASCOAT IFPEN, France	S.6-A.5 Nicolas Eckel N. Eckel, T.J.P. Karpowski, D. Mira, F. Ferrari, C. Hasse, A. Scholtissek ANN-based Chemistry Surrogate Modeling for Premixed Hydrogen Flames Technical University Darmstadt, Simulation of reactive Thermo-Fluid Systems, Germany
12:15 - 12:30	S.4-P.12 Roberto Dal Monte Roberto Dal Monte, Michele Cogo, Francesco Picano Probabilistic Near-Wall Turbulence Modeling via Physics-Guided Diffusion Model Università degli Studi di Padova, Italy	S.5-A.13 Haitao Lin Haitao Lin, Xu Wang, Weiwei Zhang Transferable Scaling Function Learning Method for Cross Shape Aerodynamic Database Construction Northwestern Polytechnical University, China	S.14-A.5 Donghyuk Kang Donghyuk Kang Data-Driven Sparse Reconstruction of Three-Dimensional Steady and Unsteady Flow Fields in a Centrifugal Impeller under Nominal and Disturbed Operating Conditions Department of Mechanical Engineering, Saitama University, Japan	S.13-P.0.9 Roque Martins Duarte Junior Bisadon Yohan, Yves le Guennec, José Aguado, Domenico Borzacchello ML System based on transfer learning to assist design of cryogenic tank CERN, Brazil	S.6-A.6 Cyril Freyling Freyling Cyril, Coussement Axel Symbolic Regression-Based Prediction of Mass Fraction Burned in Hydrogen-Fueled Internal Combustion Engines Université Libre de Bruxelles, Belgium
12:30 - 12:45	S.1-P.13 Michael Vipin Bharath Ravikumar, Ioannis Karathanassis, Mehdi Seddiq, Manolis Gavaises Learning viscoelastic constitutive models from mesoscopic simulations using scientific machine learning City St George's University London, UK	S.5-A.14 Guillermo Suarez Guillermo Suarez, Emre Oskaya, Nico R. Gauger Active Flow Control via Model-Based Reinforcement Learning RPTU University Kaiserslautern-Landau, Germany	S.14-A.6 Mohammadmahdi Nouri Manolis, Gavaises, Gabor Janiga End-to-End Trainable Hybrid Model for PT-Phase-Split: Neural -Value Correction with an Implicit Rachford-Rice Layer Otto-von-Guericke-University Magdeburg, Germany		
12:30-14:00	Lunch (Maich restaurant)				
Keynote 14:00-14:45	Chair: Steffen Schmidt, TUM, Germany	Nils Thuerrey, TU Munich, Germany			
		AI techniques for differentiable and non-differentiable solvers			
Keynote 14:45-15:30		Adrian Lozano Duran, MIT, California Institute of Technology, USA			
15:30-16:15	General-Purpose ML-Based Closure Models for Computational Fluid Dynamics				
15:30-16:15	Coffee Break and Refreshments				
Parallel Sessions	4. Physics-informed models	5. Dimensionality Reduction and Reduced Order Models	1. Machine Learning	3. Optimisation and Design	14. Turbomachinery and Airfoils
Chair	Dr Nikolaos Prasilanakis, Paul Scherrer Institute, Switzerland	Prof Nils Thuerrey, Technical University of Munich, Germany	Prof Miguel-Alfonso Mendez, von Karman Institute for Fluid Dynamics, Belgium	Prof Kyriakos Giannakoglou, National Technical University of Athens, Greece	Prof Weiwei Zhang, Northwestern Polytechnical University, China
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16:15 - 16:30	S.4-P.13 Yuling Han Yuling Han, Zhihui Li, Zhibin Yu Physics-informed latent neural operator for three-dimensional compressor cascade flow prediction University of Liverpool, UK	S.5-A.15 Antonio Colanera Antonio Colanera, Luca Magri Fuzzy quantized local reduced models for chaotic flows. SISSA mathLab, Italy	S.1-A.14 Wilfried Genest / Savin Eric Wilfried Genest, Eric Savin, Filippo Gatti, Didier Cloutau Predictive modeling of incompressible fluid flows using conditional score-based diffusion models ONERA and CentraleSupélec, France	S.3-A.3 Francesco Di Fiore Francesco Di Fiore, Hayriye Pehlivan Solak, Andrea Serani, Matteo Diez, Laura Manni Active Learning for Fluid Dynamics Driven Design Imperial College London, UK	S.14-P.7 Alessandro Pela (Michele Marconcini) Alessandro Pela, Michele Marconcini, Andrea Annone IRMA: Impeller Representation Model for Aerodynamics University of Florence, Italy
16:30 - 16:45	S.4-A.14 Qiang Liu (Giacomo Baldin) Giacomo Baldin, Qiang Liu, Nils Thuerrey Pareto-Optimal Generative Modeling with Physical Constraints via Physics-Based Flow Matching Technical University of Munich, Germany	S.5-A.16 Alec Linot Alec J. Linot, El Rimmer Data-driven Manifold Charting using Persistent Homology for Chaotic Dynamics University of Massachusetts Amherst, USA	S.1-P.15 Chris R. Jung Chris R. Jung, Markus Dör, Adam T. Müller, Natalie Jüngling, Jennifer Niesner, Nicola C. Stache Generative Indoor Flow Prediction: Drifting Models for Surrogate Flow Modeling Helmholtz University of Applied Sciences, Germany	S.3-A.4 Izuru Kambayashi Izuru Kambayashi, Masaki Ihara, Szu Yung Chen, Byungjin An LBM-based Deep Learning Surrogate Modeling for Shape Optimization of Fans Ebara Corporation, Japan	S.14-A.8 Szu Yung Chen Szu Yung Chen, Izuru Kambayashi, Ning Yang, Motohiko Nohmi, Ryota Yoshihara Data-Driven Analysis of Cavitation Erosion Geometry Ebara Corporation, Japan
16:45 - 17:00	S.4-A.15 Tamara Gammadoni Tamara Gammadoni, Jacopo Zentì, Michele Battistoni Physics-Informed ML for CFD Applications: Forward Modeling of Microchannel Heat Transfer and Inverse Identification in Hydrogen Injection University of Perugia, Italy	S.5-A.17 Zhibo Wang Zhibo Wang, Federico Toschi Data-Driven Reduced Kinetic Modeling for Rarefied Kolmogorov Flow Eindhoven University of Technology, The Netherlands	S.1-A.16 Dev Hathi Dev S. Hathi, Josef M. Winter, Steffen J. Schmidt, Nikolaus A. Adams Learning Lattice Boltzmann collision operator using Graph Neural Networks Technical University of Munich, Germany	S.11-A.6 Louis Flessbach Louis Flessbach, Marian Fuchs, Hendrik Hetmann, Charles Mockel, Nikolajette Sahou An automated CFD workflow for the generation of high-fidelity AI training data Upstream CFD GmbH, Germany	S.14-P.9 Florian Sobieczky AI Driven Prediction of Pressure Loss assisting Draft Tube Design in Hydraulic Turbines Andritz Hydro GmbH, Austria
17:00 - 17:15	S.4-P.16 Jiarao Dai Jiarao Dai, Xiaowei Zhao Curriculum Learning-Based Physics-Informed Neural Networks for Turbulent Flow Reconstruction in Wind Tunnel Experiments. University of Warwick, UK	S.5-A.18 Lucas Schneeberger Lucas Schneeberger, Guy Y. Cornejo Macedo, Zhiyuan Wang, Jacopo Triki, Stefano Diotti, Andrea Ianni Manifold learning of pitching airfoil dynamics from pressure measurements Universidad Carlos III de Madrid, Spain	S.1-A.17 Bharath Ravikumar Bharath Ravikumar, Ioannis K. Karathanassis, Manolis Gavaises, Timothy Smith, Gareth Brown Scope of machine learning in the development of many-body dissipative particle dynamics simulations of complex fluids City St Georges, University of London, UK	S.3-A.5 Long Ma Long Ma, Xiaojing Wu, Weiwei Zhang A Consistency-Identifiable Conditional Variational Autoencoder for Reliable Generative Shape Design School of Aeronautics, Northwestern Polytechnical University, China	S.14-A.10 Xiaojing Wu Xiaojing Wu, Zhen Luo, Weiwei Zhang Multi-fidelity Aerodynamic Transfer Modeling Considering Heterogeneous Shapes Based on Point Cloud Variational Autoencoder for Efficient Propeller Shape Design Institute of AI for Industries, Chinese Academy of Sciences, China
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