

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			
Keynote 09:30-10:15		Jiaqing Kou, Northwestern Polytechnical University, China			
10:15-11:00	Explainable Generative Machine Learning for Aircraft Aerodynamic Configuration Design				
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, Ever-Jan Foeth Fidelity-Scaling via Physics-Informed Graph Learning on Marine Propeller Blades Wartsila Propulsion Netherlands	S.5-A.10 Miguel Pérez Cuadrado Miguel Pérez Cuadrado, Giorgio Maria Cavalazzi, Alfredo Pinelli 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.2 Jialei Yan Jialei Yan, Ruocun Wu, Chenzu 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 Cavitational Wall Flow 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, Goranjo Granjal Cruz, Tim De Troyer, Mark Runaens, Jan Deceper Physics-informed learning of unsteady fluid systems via dynamical invariants VUB, Belgium	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-A.3 Xiao Xue Xiao Xue, Tianyue Yang, Mingyong Gao, Maida Wang, Kewei Zhu, Peter V. Coveney Uni-Flow: A Unified Autoregressive-Diffusion Framework for Stable Long-Horizon and High-Resolution Multiscale Flow Modelling University College London, UK	S.13-P.6 Connor Nolan Connor Nolan, Lee Mariner, Peter Jimek, Michael Fairweather Machine Learning-Based Prediction of Non-Spherical Particle Agglomeration University of Leeds, UK	S.6-A.3 Hongchao Chu Hongchao Chu, Haogang 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, Håskoke Mehus, André Ferrari, Sara El Bouch Solver-In-The-Loop Training with Multistep Inputs for Capturing Fine-Scale Turbulence Laboratoire Lagrange, France	S.5-A.12 João Victor Neves Neiva João V. N. Neiva, Luc Pastur, Igor B. de Paula, Omar E. H. Pinedo Experimentally-based least-order model of the transient growth of a laminar separation bubble ENSTA-Paris, France	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.10 Xiaowei Jin Xiaowei Jin, Shenghui Xu, Hu Li Operator learning method with adaptive activation function for high-speed shock tube problems and airfoil flows Harbin Institute of Technology, 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.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.11-A.5 Xiao Xiao Xiao Xiao, Bruno Delhom, Choukri Habchi, Julien Bobbot Development of an ANN-ISAT Framework for Real-Fluid Modeling with Application to NH ₃ -H ₂ injection system. IFPEN, France	S.13-A.8 Bruno Delhom Bruno Delhom, Choukri Habchi, Olivier Colin, Julien Bobbot Development of a multi-species real fluid modelling 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. Ferraro, C. Heshe, A. Schottelack 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.14 Guillermo Suarez Guillermo Suarez, Emre Özkan, Nico R. Gauger Active Flow Control via Model-Based Reinforcement Learning RPTU University Kaiserslautern-Landau, Germany	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.9 Roque Martins Duarte Junior Bisacodon 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, Coussennet 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.20 George Papadakis G. Papadakis, S. Lu Learning from the past to predict the future: a general, data-driven and physically interpretable algorithm, applied to turbulent flow forecasting Dept. of Aeronautics, Imperial College London, UK	S.14-A.6 Mohammadmehdi 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 Thuerey, 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				
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 Prasianakis, Paul Scherrer Institute, Switzerland	Prof Nils Thuerey, Technical University of Munich, Germany	Prof Miguel-Afonso Mendez, von Karman Institute for Fluid Dynamics, Belgium	Prof Kyriacos 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 Cloutier 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 Pala (Michele Marconcini) Alessandro Pala, Michele Marconcini, Andrea Arnone IRMA: Impeller Representation Model for Aerodynamics University of Florence, Italy
16:30 - 16:45	S.4-A.14 Qiang Liu (Giacomo Baldan) Giacomo Baldan, Qiang Liu, Nils Thuerey 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 Dörr, Adam T. Müller, Natalie Jüngling, Jennifer Niesner, Nicolás C. Stache Generative Indoor Flow Prediction: Drifting Models for Surrogate Flow Modelling Helmholtz University of Applied Sciences, Germany	S.3-A.4 Izuru Kambayashi Izuru Kambayashi, Masaki Itara, Su Yung Chen, Byungjin An LBM-based Deep Learning Surrogate Modeling for Shape Optimization of Fans Ebara Corporation, Japan	S.14-A.8 Suu Yung Chen Suu 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 Gammalidoni Tamara Gammalidoni, Jacopo Zentile, 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.18 Lucas Schneeberger Lucas Schneeberger, Guy Y. Cornejo Maceda, Zhiyuan Wang, Jacopo Tivoli, Stefano Decuzzi, Andrea Iervio Manifold learning of pitching airfoil dynamics from pressure measurements Universidad Carlos III de Madrid, Spain	S.1-A.16 Dev Hathi Dev S. Hathi, Josef M. Winter, Steffen J. Schmidt, Nikolaus A. Adams Learning Latrice Boltzmann collision operator using Graph Neural Networks Technical University of Munich, Germany	S.11-A.6 Louis Fliessbach Louis Fliessbach, Marian Fuchs, Hendrik Hetmann, Charles Mockel, Nikolaus 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.1-A.17 Bharath Ravikumar Bharath Ravikumar, Ioannis K. Karathanassis, Manolis Gavaises, Timothy Smith, Garath 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
			End of Day 2		