3rd ERCOFTAC Workshop on Machine Learning for Fluid Dynamics

Conference Programme

(Last updated: 18/02/2026)

Conference Chairs:

- **Prof. Benjamin Sanderse –** *Centrum Wiskunde & Informatica, Eindhoven University of Technology*, chair
- **Dr. Richard P. Dwight –** *Delft University of Technology*, co-chair

Scientific Committee:

- **Prof. Ricardo Vinuesa –** *University of Michigan*
- **Prof. Nils Thuerey –** *Technical University of Munich*
- **Prof. Heng Xiao –** *University of Stuttgart*
- **Prof. Andrea Beck –** *University of Stuttgart*
- **Prof. Luca Biferale** *– University of Rome Tor Vergata*
- **Prof. Taraneh Sayadi –** *Conservatoire National Arts et Métiers*
- **Prof. Paola Cinnella –** *Sorbonne University*
- **Prof. Maria Vittoria Salvetti –** *University of Pisa*
- **Prof. Gianluca Iaccarino –** *Stanford University*
- **Dr. Romit Maulik -** *Pennsylvania State University*
- **Prof. Chris Pain –** *Imperial College London*
- **Dr. Jane Bae –** *California Institute of Technology*
- **Prof. Gianluigi Rozza –** *International School for Advanced Studies*
- **Prof. Elias Cueto –** *University of Zaragoza*
- **Prof. Angelo Iollo –** *University of Bordeaux*
- **Dr. Neil Ashton –** *NVIDIA*
- **Dr. Adrian Lozano Duran –** *California Institute of Technology*
- **Prof. Nathan Kutz –** *University of Washington*
- **Prof. Luca Magri –** *Imperial College London*
- **Dr. Daan Crommelin –** *Centrum Wiskunde & Informatica*
- **Prof. Gabriel Weymouth –** *Delft University of Technology*

Local Organizing Committee:

- **Dr. Nguyen Anh Khoa Doan –** *Imperial College London, Delft University of Technology*
- **Dr. Bernat Font –** *Delft University of Technology*
- **Dr. Wouter Edeling –** *Centrum Wiskunde & Informatica*
- **Tyler Buchanan –** *Delft University of Technology*
- **Nada Mitrovic –** *Centrum Wiskunde & Informatica*
- **Magdalena Yates –** *ERCOFTAC*

ERCOFTAC
European Research Community On
Flow, Turbulence And Combustion

Program at a glance

Scientific Program	Wednesday 04 March
08:30 – 09:45	Arrival and registration
09:45 – 10:00	**Opening – Prof. Benjamin Sanderse** (Turing and streamed in Euler)
10:00 – 10:50	**Keynote 1 -** *Causality is 4-D for Scientific Discovery in Fluids,* **Dr. Adrian Lozano Duran (CalTech)** (Turing and streamed in Euler)
10:50 – 11:30	Coffee break (Forum@CWI & Newton@CC)
11:30 – 12:30	Parallel sessions DR1 (Turing), EXP (Euler), O&D1 (L016-Hypatia), PIML 1 (L017-Ada)
12:30 – 13:40	Group picture + Lunch (Forum@CWI & Newton@CC)
13:40 – 15:20	Parallel sessions DR2 (Turing), TM-LES1 (Euler), O&D2 (L016-Hypatia), PIML 2 (L017-Ada)
15:20 – 16:00	Coffee break (Forum@CWI & Newton@CC)
16:00 – 17:40	Parallel sessions DR3 (Turing), TM-LES2 (Euler), ISI1 (L016-Hypatia), RFHT (L017-Ada)
Social Program	
17:45 – 20:00	Drinks reception (Forum@CWI & Newton@CC)

Scientific Program	Thursday 05 March
08:30 – 09:00	Arrival and registration
09:00 – 09:50	**Keynote 2 -** *Solution discovery in fluids with high precision using neural networks,* **Dr. Ching-Yao Lai (Stanford University)** (Turing and streamed in Euler)
09:50 – 10:30	Coffee break
10:30 – 12:10	Parallel sessions TM-RANS1 (Turing), DR4 (Euler), FI (L016-Hypatia), Dataset (L017-Ada)
12:10 – 13:20	Lunch (Forum@CWI & Newton@CC)
13:20 – 15:00	Parallel sessions TM-RANS2 (Turing), DR5 (Euler), Urban (L016-Hypatia), Surrogate1 (L017-Ada)
15:00 – 15:40	Coffee break (Forum@CWI & Newton@CC)
15:40 – 17:25	Parallel sessions Challenge (Turing), RL1 (Euler), Maritime (L016-Hypatia), Surrogate2 (L017-Ada)
Social Program	
19:00 –	Conference dinner (Tolhuistuin)

	Friday 06 March
08:30 – 09:00	Arrival and registration
09:00 – 09:50	**Keynote 3 -** *Data over Dogma: Ruthless Empiricism, Strange Ideas, and the Future of Weather Forecasting*, **Dr. Daniel Worrall (Google DeepMind)** (Turing and streamed in Euler)
09:50 – 10:30	Coffee break (Forum@CWI & Newton@CC)
10:30 – 12:10	Parallel sessions UQ+Q (Turing), RL2 (Euler), TM-RANS3 (L016-Hypatia), Surrogate3 (L017-Ada)
12:10 – 13:20	Lunch (Forum@CWI & Newton@CC)
13:20 – 15:00	Parallel sessions Solver (Turing), RL3 (Euler), Algo (L016-Hypatia)
15:00 – 15:30	Coffee break (Forum@CWI & Newton@CC)
15:30 – 16:20	**Keynote 4 –** *TBD,* ~~**Prof. Andrea Beck**~~ (Turing and streamed in Euler)
16:20 – 16:35	**Closure**

Detailed Program

Day 1 (Wednesday, 4th March 2026)

08:30 – 09:45   Arrival and registration
Room: Forum@CWI & Newton@CC

09:45 – 10:00   **Conference Opening**
Prof. Benjamin Sanderse (chair, Centrum Wiskunde & Informatica, Eindhoven University of Technology)
Room: Turing (also streamed in Euler)

10:00 – 10:50   **Keynote Talk:**
Causality is 4-D for Scientific Discovery in Fluids
Dr. Adrian Lozano Duran (California Institute of Technology)
Room: Turing (also streamed in Euler)

10:50 – 11:30   Coffee break
Room: Forum@CWI & Newton@CC

11:30 – 12:30   Parallel sessions (DR1, EXP, O&D1, PIML1)
Room: Turing, Euler, L016-Hypatia, L017-Ada

	Turing Dimensionality Reduction1 (DR1) Chair: Luca Magri	Euler Experiments (EXP) Chair: David Rival	L016-Hypatia Optimization & Design1 (O&D1) Chair: Gianluca Iaccarino	L017-Ada Physics-informed ML1 (PIML1) Chair:
11:30-11:50	*Data-driven Modeling of Chaotic Plane Couette flow on a Low-dimensional Spectral Submanifold* Kaszas Balint, Haller George	*Data driven rotor-wake dynamics: from measurements to sparse governing equations* Amico Enrico, Cafiero Gioacchino, Montagner Sara	*Deep Reinforcement Learning for Airfoil Shape Optimization: A Comparative Study of PPO and SAC* Bedri Yagiz, Lehmkuhl Oriol	*Enforcing Physics the Hard Way: On Constrained ML Architectures and Their Subtle Challenges in Fluid Dynamics* Cabral Manuel, Font Bernat, Weymouth Gabriel D.
11:50-12:10	*Stochastic Closure for Stable Long-Time Forecasting of Chaotic Systems* Cayuela Marco, Sayadi Taraneh, Le Chenadec Vincent, Schmid Peter	*Data-Driven Modelling of Transient Flyer Aerodynamics through Wind Tunnel Measurements* Wastell Owen, Marxen Olaf, Iacobello Giovanni	*AI-Machine Learning Methodologies to Accelerate CFD-based Design and Optimization for Turbomachinery Applications* Shahpar Shahrokh	*Conformal Physics-Informed Convolutional Neural Network for Reynolds-Averaged Navier Stokes Equations in Ducts* Bokil Gaurav, Merbold Sebastian, De Graaf Stefanie

| 12:10-12:30 | *Non-intrusive oblique-projection-based model reduction with guaranteed-stable latent-space dynamics* Errico Cole, Padovan Alberto, Bodony Daniel | *Searching for a "textbook" of gust-wing encounters* Olivucci Paolo, Rival David E., Srivatsan Kowshik | *Machine Learning-based aerodynamic optimization of a low-Reynolds-number Outlet-Guide-Vane cascade* Li Shuai, Andersson Niklas | *Video-conditioned physics-informed neural networks for predicting hidden fluid mechanics in two-phase flows* Dreisbach Maximilian, Kiyani Elham, Kriegseis Jochen, Karniadakis George, Stroh Alexander |

12:30 – 13:45   Group picture + Lunch
Room: Forum@CWI & Newton@CC

13:40 – 15:20   Parallel sessions (DR2, TM-LES1, O&D2, PIML2)
Room: Turing, Euler, L016-Hypatia, L017-Ada

Turing Dimensionality Reduction2 (DR2) Chair: Andrea Novoa	**Euler Turbulence Modelling-LES1 (TM-LES1) Chair: Benjamin Sanderse**	**L016-Hypatia Optimization & Design2 (O&D2) Chair: Andrew Mole**	**L017-Ada Physics-informed ML2 (PIML2) Chair: Giovanni Stabile**
13:40-14:00 *A Latent Diffusion Transformer for Turbulence Generation and Data Assimilation* Teng Hao, Steinbrenner Fabian, Turan Baris, Xiao Heng	*Machine-learning wall model of large-eddy simulation across low- and high-speed flows over rough surfaces* Ma Rong, Lozano-Duran Adrian	*Fast LES-Based Geometry Optimization with Deep Reinforcement Learning and Solution Mapping* Sal Anglada Gaston, Lehmkuhl Oriol, Gomez Gonzales Samuel, Yagiz Bedri	*A Generalisable Normalisation Procedure for Physics-Informed Neural Network Training Data* Rawden Joshua, Vanderwel Christina, Symon Sean
14:00-14:20 *From Filtering to Forcing: Mimicking turbulence modeling via Data Assimilation and Machine Learning* Moussie Tom, Errante Paolo, Joesph Pierric, Meldi Marcello	*Accelerated subgrid-scale modeling for passive scalar transport in LES of turbulent flows using data-driven methods* Sudhakar Surya Datta, Aditya Konduri, Lakkaraju Rajaram	*Efficient Thermo-Fluid System Optimization using Invariant CNNs and Parallel Active Learning* Koide Yuri, Kaithakkal Arjun J., Stroh Alexander, Friederich Pascal	*From Soft to Hard Turbulence: Architectural and Optimization Requirements of PINNs for Temperature Field Reconstruction in Rayleigh-Bénard Convection* Volk Marie-Christine, Mommert Michael, Bauer Christian, Sergent Anne, Lucor Didier, Wagner Claus
14:20-14:40 *Efficient Real-Time Adaptation of ROMs for Unsteady Flows Using Data Assimilation* Zighed Ismael, Novoa Andrea,	*Comparison of symmetry-preserving data-driven LES closures* Agdestein Syver Døving, Sanderse Benjamin	*Multi-Objective Wind Farm Bayesian Optimisation* Mole Andrew, Magri Luca	*Physics Informed Neural networks for downscaling on irregular meshes: reliability of convergence*

	Magri Luca, Sayadi Taraneh			Malhomme Nemo, Stabile Giovanni
14:40-15:00	*Latent-Space SINDy PDEs for Real-Time Digital Twins of Wall-Bounded Flows Perez* Cuadrado Miguel, Cavallazzi Giorgio Maria, Pinelli Alfredo	*Reinforcement-Learning-Based Wall Modeling for Turbulent Flows with Varying Pressure Gradients and Its Dependence on Subgrid-Scale Modeling* Bae Jane, Zhou Di	*Multi-Agent Reinforcement Learning for Wind Farm Optimization in Atmospheric Boundary Layer* Manganelli Felice, Semeraro Onofrio, Leonardi Stefano, Cherubini Stefania, De Palma Pietro	*Sampling and weighting enhanced Physics Informed Neural Networks for highly turbulent Rayleigh-Bénard convection* Mrini Soufiane, Sergent Anne, Lucor Didier, Salort Julien, Chillà Francesca
15:00-15:20	*Real-time data assimilation in latent spaces for chaotic forecasting* Luca Magri, Özalp Elise, Novoa Andrea			*Weighting Physics and Data in PINNs: An Evaluation of Loss-Balancing Strategies for CFD* Correa Santiago, Díaz-Cuadro Christian, Draper Martín

15:20 – 16:00   Coffee break
Room: Forum@CWI & Newton@CC

16:00 – 17:40   Parallel sessions (DR3, TM-LES2, ISI, RFHT)
Room: Turing, Euler, L016-Hypatia, L017-Ada

	Turing Dimensionality Reduction3 (DR3) Chair: Taraneh Sayadi	**Euler Turbulence Modelling-LES2 (TM-LES2) Chair: Jane Bae**	**L016-Hypatia Inference, Sensor, and Inverse (ISI) Chair: Mahdi Abkar**	**L017-Ada Reacting Flow and Heat Transfer (RFHT) Chair: Salvatore Iavarone**
16:00-16:20	*Quantized local reduced-order modelling.* Colanera Antonio, Magri Luca	*Machine-learning-based subgrid-scale modeling and its application to flows over complex geometries* Ahnn Sangwoo, Kim Myunghwa, Choi Haecheon	*Estimating Rotor-Effective Wind Speed Using Synthetic LiDAR–Based Wind-Field Reconstruction* Draper Martín, Schlipf David, Díaz-Cuadro Christian, Correa Santiago	*Machine Learning Tools for Studying Laser-Induced Ignition in a Rocket Combustor* Iaccarino Gianluca
16:20-16:40	*An explainable reduced-order model based on dynamic mode decomposition* Amor Christian, Corrochano Adrián, Le Clainche Soledad, Rosti Marco Edoardo	*Reduced Subgrid Scale Terms in Three-Dimensional Turbulence* Hoekstra Rik, Edeling Wouter	*Aerodynamic coefficients estimation from optimized surface pressure sensor distribution with multi-output Gaussian Processes Regression using wind tunnel data* Bucquet Quentin, Podvin Bérengère, Iavarone Salvatore,	*A data-driven reduced-order model for predicting flame dynamics via system identification* Novelli Chiara, Procacci Alberto, Parente Alessandro

			Hanna Badoui, Braud Caroline, Guilmineau Emmanuel	
16:40-17:00	*Bayesian Operator Inference for Galerkin projection closure and non-intrusive Reduced-Order Modelling* Procacci Alberto, Iavarone Salvatore	*Scalable Graph Network for Robust Sub-Grid Scale Modelling for Compressible Flows* Gonzalez Fernando, Larroque Anthony, Theret Aurelien, Drozda Dantas Martins Luciano, Odier Nicolas, Legaux Joeffrey, Teste Olivier	*Smart Sensor Placement in Turbulent Flows: A Correlation-Aware Attribution Framework* Leung Sze Chai, Zhou Di, Bae Jane	*Modelling chemistry integration via deep neural networks in LES-PDF simulations* of turbulent sooting flames Liu Weitao, Kronenburg Andreas, Zirwes Thorsten
17:00-17:20	*Proper Orthogonal Decomposition for initializing Auto-Encoders* Bousquet Rémi, Faucheu Alex, Nore Caroline, Lucor Didier	*Machine-learning-based largest-eddy simulation of turbulence and its generalisability to unseen conditions* Inubushi Masanobu, Satoshi Matsumoto, Susumu Goto	*Remember to "forget": overcoming the ill conditioned inverse problem in chaos by information theory* Fung Lloyd	*Physics-Informed Reduced-Order Modeling of Combustion Dynamics via Gaussian Process Regression and Data Assimilation* Lopez Constanza, Procacci Alberto, Podvin Bérengère, Iavarone Salvatore
17:20-17:40	*Reduced order model-based deep learning for flow prediction* Fiorini Camilla, Lepage Nicolas, Mortazavi Iraj, Beneddine Samir, Thome Nicolas, Sipp Denis			*Data-driven modeling of hypersonic flows in chemical non-equilibrium with catalytic surfaces* Sarras Konstantinos, Magin Thierry, Schmid Peter, Sayadi Taraneh

17:45 – 20:00   Drinks reception
Room: Forum@CWI & Newton@CC

Day 2 (Thursday, 5th March 2026)

08:30 – 09:00   Arrival and registration
                 Room: Forum@CWI & Newton@CC

09:00 – 09:50   **Keynote Talk:**
                 Solution discovery in fluids with high precision using neural networks
                 Dr. Ching-Yao Lai (Stanford University)
                 Room: Turing (also streamed in Euler)

09:50 – 10:30   Coffee break
                 Room: Forum@CWI & Newton@CC

10:30 – 12:10   Parallel sessions (TM-RANS1, DR4, FI, Dataset)
                 Room: Turing, Euler, L016-Hypatia, L017-Ada

	Turing Turbulence Modelling-RANS1 (TM-RANS1) Chair: Ali Eidi	Euler Dimensionality Reduction4 (DR4) Chair: Angelo Iollo	L016-Hypatia Feature Identification (FI) Chair: Anh Khoa Doan	L017-Ada Dataset Chair:
10:30-10:50	*CFD-driven symbolic regression of RANS transition models* Zemmour Louenas, Cinnella Paola, Gloerfelt Xavier	*Physics Informed Graph Neural Networks for Nonlinear Dynamics* Calandriello Gennaro, Romor Francesco, Stabile Giovanni	*Weak Dominant Balance: A robust method for identifying structure in more complex fluid flows* Ahnert Samuel, Lagemann Esther, Bae Jane, Vinuesa Ricardo, Lagemann Christian, Brunton Steven	*BCN16-HFWind: A High-Fidelity LES Dataset and its Application to Data-Driven Urban Flow Predictions* Duró Josep Maria, Mestres Ernest, Hernández Fabian, Calafell Joan, Lehmkuhl Oriol, Rodriguez Ivette
10:50-11:10	*Adjoint-Assisted CFD-Driven Symbolic RANS Modeling via Kolmogorov-Arnold Networks* Siddiqui Affan, Tian Renzhi, Dwight Richard	*A Reduced Order Model for predicting the dynamics of the Rayleigh-Taylor Instability* Granger Téo, Briard Antoine, Creusy Paul, Gréa Benoît-Joseph	*Feature Extraction from Complex Flow Fields: a Morphing-based Approach under Geometric Variability* Margheritti Riccardo, Semeraro Onofrio, Quadrio Maurizio, Boracchi Giacomo	*A Blended Wing Body Aircraft Dataset and Surrogate Model for Aerodynamic Predictions* Sung Nicholas, Spreizer Steven, Elrefaie Mohamed, Jones Matthew, Ahmed Faez
11:10-11:30	*Data-driven correction of a RANS-predicted turbulent heat flux applied to high-order CFD* Clément Levillain, Lodato Guido	*Low-dimensional representation of intermittent geophysical turbulence with statistics-informed convolutional autoencoders* Foldes Raffaello,	*Sweep events characterization through LSTM network* Saccaggi Enrico, Zaza Domenico, Iovieno Michele, Mendez Miguel Alfonso, Di Cicca Gaetano Maria	*Benchmarking State-of-the-Art Machine Learning Models on the DrivAerNet++ Dataset* Elrefaie Mohamed

		Camporeale Enrico, Marino Raffaele	
11:30-11:50	*Data-driven turbulence modelling in hypersonic flows using sparse symbolic regression* Calvi Paul, Gloerfelt Xavier, Breil Jérôme, Olazabal Marina, Cinnella Paola	*Reduced state space approach to identifying precursors to extreme events in turbulent flows* Kevin Schuurman, Dwight Richard, Doan Anh Khoa	*Predicting the linear instability eigenspectra using Deep Learning* Sánchez-Domínguez Miguel, De Vicente Javier, Lacasa Lucas, Chávez-Módena Miguel, Padilla-Montero Iván, Rodríguez Daniel, Valero Eusebio	*Identification of optimal training data for non-intrusive model reduction via operator inference* Rosenberger Henrik, Sanderse Benjamin, Stabile Giovanni
11:50-12:10	*Correcting Differential Reynolds Stress Models Using Data-Assimilation* Farro Gianmarco, Content Cédric, Volpiani Pedro, Sipp Denis	*A physics-based and theoretically proven precursor of extreme events with covariant Lyapunov vectors* Consonni Riccardo, Magri Luca	*Neural operator-based Global Stability and Resolvent Analysis* Wang Chengyun, Chen Liwei, Thuerey Nils	*Intelligent sampling for scientific model discovery: Learning to optimize and optimizing to learn* Larrañaga Ana, Fasel Urban, Brunton Steven L.

12:10 – 13:20   Lunch
Room: Forum@CWI & Newton@CC

13:20 – 15:00   Parallel sessions (TM-RANS2, DR5, Urban, Surrogate1)
Room: Turing, Euler, L016-Hypatia, L017-Ada

Turing Turbulence Modelling-RANS2 (TM-RANS2) Chair: Heng Xiao	**Euler Dimensionality Reduction5 (DR5) Chair: Gianluigi Rozza**	**L016-Hypatia Urban Flow (Urban) Chair: Maria Vittoria Salvetti**	**L017-Ada Surrogate Modelling1 (Surrogate1) Chair: Antonio Colanera**
13:20-13:40 *Coupling data assimilation and machine learning to improve the Spalart Allmaras turbulence model for transonic flows* Carduner Louis, Fanizza Bartolomeo, Volpiani Pedro Stefanin, Renac Florent, Sipp Denis	*MOReDDPM - DDPMs for Non-intrusive Reduced-order Modeling of Parametric Fluid Flows* Nikken Michiel, Botteghi Nicolò, Califano Federico, Glas Silke	*Urban Digital Twins at City Scale: Coupling High-Fidelity CFD with Uncertainty-Aware Machine Learning* Kokkinakis Ioannis, Christakis Nicholas, Drikakis Dimitris	*Discretization Invariant Neural Field Surrogates for Large-Scale Aerodynamic Simulation* Catalani Giovanni, Bertrand Xavier, Tost Frédéric, Bauerheim Michaël, Morlier Joseph
13:40-14:00 *Using Field Inversion Machine Learning to model the Reynolds Stress Tensor in the SU2 RANS flow solver* Boxho Margaux, Goffart Nicolas, Toulorge Thomas	*Optimal transport-based reduced order modeling for two-phase flows* Khamlich Moaad, Tonicello Niccolò, Pichi Federico, Rozza Gianluigi	*Meta-Learning Enhanced Physics-Informed Neural Networks for Predicting Urban Canyon Wind Flows* Antoniou Nestoras, Laakkonen Janne, Mouzourides Petros,	*Towards foundation surrogate model for flow fields around wings* Yang Yunjia, Thuerey Nils

10

			Neophytou Marina, Hautamäki Ville	
14:00 - 14:20	*Data-Driven Correction of RANS Models for Urban Flow Prediction via Data Assimilation and Machine Learning* Rosellini Matteo, Ursetto Aurora, Tavazzi Pietro, Mariotti Alessandro, Stabile Giovanni, Salvetti Maria Vittoria	*Latent-Space Model Predictive Control for Partially-Observable High-Dimensional Systems* Marra Luigi, Semeraro Onofrio, Mathelin Lionel, Meilán-Vila Andrea, Discetti Stefano	*Towards predicting urban flows with GAVI and SHRED* Eiximeno Benet, Miró Arnau, Duró Josep Maria, Kutz J. Nathan, Lehmkuhl Oriol, Rodriguez Ivette	*Lossless Domain Mapping for Learning CFD Fields across Geometries* Tamburini Emanuele, Cinnella Paola, Belme Anca-Claudia
14:20 - 14:40	*Bayesian inversion of RANS turbulence models in Flow-MRI* Namuroy Claire, Kontogiannis Alexandros, Juniper M.P.	*Predictive reduced order models of unsteady chaotic flows using transformer architecture* Taneja Kashish, Sayadi Taraneh, Mortazavi Iraj	*Neural Physics: Using machine-learning–libraries to build a differentiable physics-based solver applied to urban flows* Heaney Claire, Chen Boyang, Pain Christopher	*Machine-Learning-Based Surrogate Modeling for Stochastic Multiscale Simulation Methodology* Kim Changho, Xu Zihan, Nonaka Andrew, Zhu Yuanran
14:40 - 15:00	*Field-Inversion and Machine-Learning–Assisted Correction of the Compressible RANS Equations: Application to Shock-Wave/Turbulent Boundary-Layer Interactions* Fanizza Bartolomeo, Volpiani Pedro Stefanin, Renac Florent, Sipp Denis	*Generalization capabilities of Transformers in fluid dynamics* Ifaistos Theofanis, Nastorg Matthieu, Menier Emmanuel, Charpiat Guillaume, Schoenauer Marc	*Reflection-Equivariant Graph Neural Networks for Predicting Wind Loads on Buildings* Vargiemezis Themistoklis, Kanatsoulis Charilaos, Gorle Catherine	

15:00 – 15:40   Coffee break
                       Room: Forum@CWI & Newton@CC

15:40 – 17:25   Parallel sessions (Challenge, RL1, Maritime, Surrogate2)
                       Room: Turing, Euler, L016-Hypatia, L017-Ada

	Turing Data Challenge (Challenge) Chair: Tyler Buchanan		Euler Reinforcement Learning1 (RL1) Chair: Anh Khoa Doan	L016-Hypatia Maritime application (Maritime) Chair: Bernat Font	L017-Ada Surrogate Modelling2 (Surrogate2) Chair: Didier Lucor
15:40-16:00	*CYPHER machine learning challenge 2025: a community effort for data-driven turbulent combustion modeling* Lorenzo Piu, Lapenna Pasquale, Bottari Stefano, Osseily Tamara, Baffetti Tommaso, Indelicato Giuseppe, Shigematsu Kosuke, Tocilla Albina, Kazani Jonid, Attili Antonio, Parente Alessandro	15:40-16:00	*Controlling Mode Transitions in Rotating Detonation Engines using Deep Reinforcement Learning* Holme Kristian, Rabault Jean, Vinuesa Ricardo, Mortensen Mikael	*Machine Learning approaches to predict shape sensitivities for ship hulls* Arian Maram Moloud, Bletsos Georgios, Schwarz Henning, Palm Michael, Rung Thomas	*IGM: A physics-informed deep learning model for large-scale ice-sheet flow* Gregov Thomas, Rosier Sebastian, Finley Brandon, Vieli Andreas, Jouvet Guillaume
16:00-16:10	*FluidsBench: A benchmark for the next generation of Computational Fluid Dynamics AI models* Neil Ashton, Paola Cinnella, Astrid Walle, Jean Kossaifi, Hohannes Brandstetter, Richard Dwight	16:00-16:20	*Deep Reinforcement Learning for Active Control of Vortex-Induced Vibrations* Alhussein Hussam, Font Bernat, Daqaq Mohammed	*Predicting pressure distributions on surface ship hulls using boundary graph neural networks* Jena Sankalp, Weymouth Gabriel, Lidtke Artur, Coraddu Andrea	*Downscaling simulation dynamics for regional weather forecasting* Jackaman James, Celledoni Elena
16:10-16:25	*Presentation of the Turbulence Modelling Challenge* Tyler Buchanan	16:20-16:40	*Deep reinforcement learning for heat transfer control in turbulent convection* Zhou Zisong, Zhu Xiaojue	*Prediction of ship hydrodynamic resistance with artificial neural networks* Lefkiou Christoforos, Koukouvinis Phoevos (Foivos), Chatzis Sotirios	*Proof of Concept of a Real-Time Fluid Dynamics Model for Immersive Environments Using Artificial Intelligence* Laot Titouan, Marchal Antoine, Perrot Vincent
16:25-16:40	*Towards a machine learning-augmented one-equation turbulence model for external aerodynamics in open-source framework* Di Fabbio Tony, Segalerba Eric, Guerrero Rivas Joel Enrique	16:40-17:00	*Reinforcement Learning for Complex Flows Modelling* Helal Isa, Giauque Alexis, Corre Christophe, Sauret Emilie		
16:40-16:55	*Data-Driven RANS Closures Using Adaptive Curvature Classifier for Vortex Flows*				

	Buchanan Tyler, West Alastair, Dwight Richard				
16:55-17:10	*Symbolic Turbulence Modelling with Multi-Agent Reinforcement Learning* Tan Zing Shawn, Eidi Ali, Buchanan Tyler, Dwight Richard P.				
17:10-17:25	*Towards a unified turbulence model through multi-objective learning* Wang Haochen, Liu Zhuoran, Zhao Zhuolin, Xiao Heng				

19:00 –   Conference dinner (walk-in from 19:00, dinner starts at 19:30)
Tolhuistuin, IJpromenade 2, 1031 KT Amsterdam
https://maps.app.goo.gl/qaDZKEc9fTU6NnpC8

Day 3 (Friday, 6ᵗʰ March 2026)

08:30 – 09:00	Arrival and registration Room: Forum@CWI & Newton@CC

09:00 – 09:50	**Keynote Talk:** **Data over Dogma: Ruthless Empiricism, Strange Ideas, and the** **Future of Weather Forecasting** **Dr. Daniel Worrall (Google DeepMind)** Room: Turing (also streamed in Euler)

09:50 – 10:30	Coffee break Room: Forum@CWI & Newton@CC

10:30 – 12:10	Parallel sessions (UQ+Q, RL2, TM-RANS3, Surrogate3) Room: Turing, Euler, L016-Hypatia, L017-Ada

	Turing Uncertainty Quantification and Quantum (UQ+Q) Chair: Richard Dwight	**Euler Reinforcement Learning2 (RL2) Chair: Kamila Zdybał**	**L016-Hypatia Turbulence Modelling-RANS3 (TM-RANS3) Chair: Paola Cinnella**	**L017-Ada Surrogate Modelling3 (Surrogate3) Chair: Wouter Edeling**
10:30-10:50	*A Surrogate-Informed Sparse Grid Interpolation for Uncertainty Quantification and Sensitivity Analysis of Complex Flows* Salvetti Maria Vittoria, Rosellini Matteo, Fruzza Filippo, Mariotti Alessandro, Tamellini Lorenzo	*Viscoelastic Turbulent Channel Drag Reduction via Opposition Control Using Multi-Agent Reinforcement Learning* Sharma Udit, Beneitez Miguel, Wittberg Lisa Prahl, Mirjalili Shahab, Vinuesa Ricardo, Tammisola Outi	*Development of a RANS Local Pressure-Gradient Closure for Transition Modeling* Capel Jorquera Javier, Cardesa José Ignacio, Pascal Lucas, Chávez-Módena Miguel, Valero Eusebio, González Leo Miguel	*Toward generative surrogate models of hydrodynamic instabilities and turbulent mixing* Thévenin Sébastien, Sterbentz Dane, Korner Kevin, Haberstich Cécile, Briard Antoine, Gréa Benoît-Joseph, Nadiga Balasubramany a T., Schill William, Belof Jonathan L.
10:50-11:10	*Shape generative models with LDDM's flow conditional matching: an application to uncertainty quantification in hemodynamics* Romor Francesco, Caiazzo Alfonso, Katz Sarah	*Wall-to-Flow: GAN-Assisted Deep Reinforcement Learning for Turbulent Flow Control from Sparse Wall Measurements* Cavallazzi Giorgio Maria, Perez Cuadrado Miguel, Pinelli Alfredo	*Generalizable Graph Neural Operators for Field Inversion Based RANS Corrections* Stumpo Leonardo, Ferrero Andrea, Masseni Filippo, Pastrone Dario	*Flow-based generative modeling of turbulent channel flow fields* Aerts Frederik, Nuyens Dirk, Meyers Johan
11:10-11:30	*Shape-informed surrogate modeling and applications to data assimilation and graph neural networks* Caiazzo Alfonso,	*Reinforcement learning for autonomous observation in optical velocimetry* Zdybał Kamila,	*Multi-Fidelity Data-Driven Modeling, Reynolds Number Extrapolation, and a log(Re) Solution to the Turbulence Problem*	*Temporal coherency in high-resolution 3D neural PDE surrogates* Luca Guastoni, Thuerey Nils

	Romor Francesco, Goubergrits Leonid, Galarce Felipe, Brüning Jan	Mucignat Claudio, Lunati Ivan	Li Jiaqi, Huang George, Kunz Robert, Yang Xiang	
11:30-11:50	*Solving nonlinear differential equations with quantum computers and a Fokker-Planck embedding* Ahmed Osama, Tennie Felix, Magri Luca		*Data-Driven Turbulence Modeling using Coarse-Grid Nonlinear Super-Stencils with Wall Functions* Lyu Shiyu, Wang Zhong-Nan	*Neural Operators For Accelerating Flow Field Predictions in a 2D Compressor Cascade* Xavier Alan, Renson Ludovic
11:50-12:10	*Learning a Surrogate Quantum Circuit for the Collision Operator in the Lattice Boltzmann Method* Lacatus Monica, Möller Matthias		*Learning a Heat-Flux Closure for Jet-in-Crossflow Using Indirect Data* Zhao Zhuolin, Wang Haochen, Xiao Heng	*ML-based correction of coarse CFD simulations for turbomachinery flows* Tschisgale Silvio, Eichenhardt Timo, Kempe Tobias

12:10 – 13:20   Lunch
                         Room: Forum@CWI & Newton@CC

13:20 – 15:00   Parallel sessions (Solver, RL3, Algo)
                         Room: Turing, Euler, L016-Hypatia

	Turing Solver Chair: Alexis Giauque	Euler Reinforcement Learning3 (RL3) Chair: Bernat Font	L016-Hypatia Algorithms (Algo) Chair: Luca Guastoni
13:20-13:40	*Accelerating Numerical Simulations in CFD by Model Reduction and Scientific Machine Learning* Rozza Gianluigi	*SINDy-RL: Interpretable and Efficient Model-Based Reinforcement Learning* Zolman Nicholas, Lagemann Christian, Fasel Urban, Kutz J. Nathan, Brunton Steven L.	*Gaussian Artificial Entropy viscosity via machine Learning sensor* Limonchi Samuel, Rodriguez Ivette, Lehmkuhl Oriol
13:40-14:00	*Acceleration of an AMG pressure solver using graph neural networks* Eric Chillon, Lidtke Artur, Doan Nguyen Anh Khoa, Font Bernat	*Improvement turbulence control through explainable deep learning* Beneitez Miguel, Cremades Andrés, Guastoni Luca, Vinuesa Ricardo	*An octree-based sampling algorithm for processing big simulation data* Geise Janis, Spinner Sebastian, Weiner Andre
14:00-14:20	*diffSPH: Differentiable Smoothed Particle Hydrodynamics for Adjoint Optimization and Machine Learning* Winchenbach Rene, Thuerey Nils	*Transfer learning strategies for accelerating reinforcement-learning-based flow control* Saeed Salehi	*Stabilizing PDE-ML systems with applications to fluid dynamics* Stinis Panos, Howard Amanda, Ahmed Shady, Qadeer Saad

14:20-14:40	*Interpretable and differentiable fluid flow solvers in latent spaces with operator learning* Arzani Amirhossein	*Gradient-enhanced reinforcement learning for fluid flow control using differentiable simulations* Mokbel Sajeda, Lagemann Christian, Lagemann Esther, Brunton Steven	
14:40-15:00	*Bridging Physics and Learning: End-to-End and Residual-Based Optimization in Differentiable Solvers* Saverio Luca, Bucci Michele Alessandro, Content Cédric, Sipp Denis		

15:00 – 15:30   Coffee break
Room: Forum@CWI & Newton@CC

15:30 – 16:20   **Keynote Talk:**
TBD
~~**Prof. Andrea Beck (University of Stuttgart)**~~
Room: Turing (also streamed in Euler)

16:20 – 16:35   **Closing remark**