

Day 1

8:00-8:45 **Registration**
(Support Desk hours: 8:00 - 13:00 and 14:00-17:30)

8:45-9:00 **Welcome and Orientation – Stefan Hickel & Maria Vittoria Salvetti**

9:00-9:45 **Keynote lecture – Bharath Ganapathisubramani: Horrible histories: Pressure-gradient history effects on turbulent boundary layers – Chair: Suad Jakirlic**
9:45-10:30 **Keynote lecture – Cetin Kiris: Utilization of Large Eddy Simulations in Industrial Research & Development – Chair: Stefan Hickel**

10:30-11:00 **Coffee Break**

11:00-13:00 **Parallel sessions**

	Uncertainty Quantification and Data Assimilation Chair: Marcello Meldi	RANS modeling Chair: Rene Pecnik	Turbulence, Transition and Loss Mechanisms in Turbomachinery Passages Chair: Koen Hillewaert	Near Wall Reactive Flows Chair: Mamoru Tanahashi
11:00-11:20	Ensemble-Based Data Assimilation of PIV Data for Turbulent Flow Past a Surface-Mounted Cube. Nikolaos Petros Pallas, Vasiliki Pappa, Demetris Bouris	A New Formalism for Improving Predictions with RANS Eddy Viscosity Models. Andrea Cimarelli, Bojan Niceno, Yves Tessier Urrèche	Boundary Layer Transition Mechanisms in a High-Speed Low-Pressure Turbine Blade. Gustavo Lopes, Sergio Lavagnoli, Koen Hillewaert, Matteo Delcasagrande, Davide Lengani	Experimental Study of Turbulent Interaction near the Active Wall at High Reynolds Numbers Using 2D-PIV and Tracer PLIF. Wenkun Zhu, Björn Stelzner, Dimosthenis Tsimis
11:20-11:40	Hypereduction in a Method Coupling Stochastic Reduced Models and Data Assimilation to Predict Turbulent Flows. Romain Tiphagne, Philippe Barbet, Matthieu Petit, Merveille Talla, Antoine Monneyron, Alexis Vaia, Giovanni Stabile, Laurence Wallian, Valentin Resseguier, Dominique Heitz	RANS Multi-Scale Turbulence Modelling and its Application to High Freestream Turbulent Boundary Layers. Stefan Corcoram, François Chedeveigne, Jaime Vaquero, Nicolas Renard	Turbulence Characterization in Compressor Tandem Blades Aerodynamics. Andrea Rocca, Michel Rasquin, Yves Marichal, Koen Hillewaert, Thomas Toulouge	Comparative Experimental Study of Flame-Wall Interaction for Methane and Hydrogen. Marcel Marburger, Christoph Möller, Andreas Dreizler
11:40-12:00	Uncertainty Quantification of Assimilated RANS Models Using Sparse and Noisy High Fidelity Data. Maxime Casanova, Vincent Mons, Pedro Volpiani, Olivier Marquet, Denis Sipp	Tuning of Aggregated Turbulence Model for Separated Flows From Different Datasets. Daniele Petronio, Andrea Carlucci, Daniele Simoni, Davide Lengani, Pawel Przytarski, Andrea Crivellini, Gianmaria Noventa	Linear or Annular Cascade: Towards Understanding the Impact of Simplified Research Configurations in Turbo Machinery. Moritz Kreuzer, Jordi Ventosa Molina, Jochen Fröhlich	Large Eddy Simulation of Flame Dynamics and Near-Wall Heat Transfer in Solid Fuel Ramjets. Achyut Panchal, Daniel Rodriguez, Ayse G. Gungor, Suresh Menon
12:00-12:20	Neural Data Assimilation of a 3D Wake Using Limited Experimental Data. Uttam Cadambi Padmanaban, Samaresh Midya, Bharathram Ganapathisubramani, Sean Symon	Using In-House Framework UNICONES on Transient Flow Simulations. Hueh-Liul Lu, Kuan-Lin Chen, Gary C. Cheng, Chau-Lyan Chang	Impact of Wall Temperature on Transonic Gas Turbines Vane Flow Dynamics: A Wall-Modeled LES Approach. Francesco De Vanna, Ernesto Benini	Fuel Effects on Turbulent Statistics in Reacting Turbulent Channel Flow. Ye Wang, Fuzhou Lyu, Mamoru Tanahashi
12:20-12:40	A Multi-Fidelity Data Assimilation Algorithm Enhanced by Convolutional Neural Networks. Tom Mousseis, Paolo Errante, Marcello Meldi	Critical Assessment of RANS Thermal Turbulence Models for Low Prandtl Number Flows. Jonathan Schmitt, Jonathan Neuhauser, Davide Gatti, Bettina Frohnappfel, Luca Marocco	The Capacity of Riblets to Alter the Surface Pressure of an Axial Compressor Blade. Melissa Kozul, Massimiliano Nardini, Pawel J. Przytarski, Richard D. Sandberg	Heat- and Momentum-transfer Spatio-temporal Features in Impinging Jets Using LSE-HPOD. Marco Raitola, Francesco Sechi, Davide Gatti, Jochen Kriegseis, Bettina Frohnappfel
12:40-13:00			A High-Fidelity Numerical Database for Free-Stream Transition. Louanes Zennour, Xavier Gierkefel, Paola Cinnella	Turbulence Anisotropy Characterization in Round Jet Impingement: A DNS and Eddy-Resolving RANS-RSM Study. Maximilian Bopp, Francesco Sechi, Louis Krüger, Bettina Frohnappfel, Suad Jakirlic

13:00-14:00 **Lunch**

14:00-16:00 **Parallel sessions**

	Uncertainty Quantification and Data Assimilation Chair: Sean Symon	Hybrid RANS/LES modeling Chair: Suad Jakirlic	Fluid-Structure Interactions Chair: Ivette Rodriguez	Particle-laden Flows Chair: Filippo Coletti
14:00-14:20	Generalized Approximate Bayesian Inference with an Equivariant Neural Operator Framework. Zhuo-Ran Liu, Xu-Hui Zhou, Heng Xiao	A Consistent Approach to Wall Modeling for the Partially-Averaged Navier-Stokes Method. Branislav Basara, Zoran Pavlovic	Experimental Investigation on Dynamic Stall of Symmetric Airfoils in Harmonic Motion. Emanuele Luzzati, Alessandro Mariotti, Maria Vittoria Salvetti	Agglomeration Dynamics of Non-Spherical Nanoparticles in Homogeneous Isotropic Turbulence. Maximilian Karsch, Andreas Kronenburg
14:20-14:40	Aggregated and Hybrid Model Reduction for Turbulent Flows Enhanced by Scientific Machine Learning. Gianluigi Rozza	An Embedded Zonal LES Method Applied for Predictions in Turbomachinery Applications. Jannik Borgelt, Matthias Meinke, Dominik Krug, Wolfgang Schröder	Experimental Investigation of Turbulence Effect on Cambered NACA Airfoils. Meva Yasemin BAŞTUĞ, Sinem KESKİN, Halli Hakan AÇIKEL, Mustafa Serdar GENÇ	Turbulence Decay in Particle-Laden Flows. Martin Oelgago, Sofia Angriman
14:40-15:00	Uncertainty Analysis of URANS Simulations Coupled with an Anisotropic Pressure Fluctuation Model. Ali Eidi, Richard Dwight	Development of a Novel Strategy for Embedded LES based on Continuous Hybrid RANS/LES Methods. Puneeth Bikkannahally, Remi Manceau	Transient Vortex-Induced Vibrations on a Square Cylinder under Accelerating Flow Conditions. Hao-Yu Bin, Mario Morello, Gianmarco Lunghi, Stefano Brusco, Maria Vittoria Salvetti, Alessandro Mariotti, Giuseppe Piccardo	Impact of Aspect Ratio on the Collision of Non-Spherical Ellipsoid Particles in Turbulent Channel Flow. Connor Nolan, Lee Mortimer, Michael Fairweather, Peter Jimack, Thomas Chapman
15:00-15:20	A Surrogate-Informed Sparse-Grid Approach for Flashback Prediction in H ₂ -Fueled Perforated Burners. Matteo Rosellini, Filippo Frizza, Rachele Lamoni, Tommaso Grenga, Alessandro Marotti, Lorenzo Tanellini, Chiara Gallati, Maria Vittoria Salvetti	Using a Stochastic Backscatter Model for Wall-Modeled Large Eddy Simulation. Johan C. Kok	Turbulence in the Near-Wake Region of a Freely Oscillating Cylinder. Baker Abu Hani, Ron Shnapp	Numerical Study of the Settling Hydrodynamics of Various Shapes of Solid Particles. Abhimanyu, Lee Mortimer, Michael Fairweather, David Hodgson, Jeffrey Peckall, Gareth Keevil
15:20-15:40	Multifidelity Approach Using Data Assimilation for Atmospheric Reentry Computation. Enguerran Vidal, Julien Annakora, Stephane Galera, Eddy Constant, Marcello Meldi	Accuracy and Consistency of Lattice Boltzmann Methods with Wall-Modeling for Turbulent Channel Flows. Yuji Shimoyama	LES of Flow Around Smooth and Dimpled Spheres in the Supercritical Regime: a Comparative Study of the Non-Rotating and Rotating Cases. Shushi Nakaoka, Shota Nishinakagawa, Masahide Onuki, Takahiro Sajma, Makoto Tsukuba	Comparison Between Bi-Disperse and Mono-Disperse Flow with Same Average Diameter in Horizontal Isothermal Pipes. Mit Piyush Bakhal, Xinchen Zhang, Zhiwei Sun, Graham J. Nathan, Rey Chin
15:40-16:00	Physics-Based Localization Methodology for Data Assimilation with Ensemble Kalman Filter. Marcello Meldi, Sarp Er	Near-Wall Numerical Coherent Structures in Wall-Modeled Large-Eddy Simulation. Soshi Kawai, Hirotaaka Maeyama	Experimental Investigation of Separation Bubble Subjected to Acoustic Excitation. Witold Elsner, Vasyi Sokolenko, Artur Drózd, Zbigniew Barata, Sławomir Kubaśki	Prediction of High-Density Particle-Laden Channel Flows Using Artificial Neural Networks. Lee Mortimer, Michael Fairweather

16:00-16:30 **Coffee Break**

16:30-18:10 **Parallel sessions**

	Machine Learning for Turbulence Chair: Lars Davidson	Hybrid RANS/LES modeling Chair: Johan Kok	Boundary Layer Turbulence Chair: Ugo Piomelli	Combustion Chair: Artur Tyliczcak
16:30-16:50	Data-Driven Calibration of Transition Models for Natural Convection Flows. Ioannis Kyriakopoulos, Alistair Revell, Sofiane Benhamadouche, Saleh Rezaeiavesh, Vladimir Duffal	Bubble Plume Dynamics in a Water Containment: A Sensitized RANS-RSM Modeling Study. Suad Jakirlic, Ivan Joksimovic	DNS Study of Coriolis and Centrifugal Forces in Canonical Boundary Layer Flow. Stefano Regazzo, Francesco De Vanna, Ernesto Benini	Relation Between 3D and 2D Wrinkling Factors in Turbulent Premixed Flames. Markus Klein, Khadijah Mohri, Chau Yvan Foo, Andreas Kempf, Nilanjan Chakraborty
16:50-17:10	Flow-Aware Simulations of Turbulence (FAST): A Machine Learning-Based Approach to Efficient Turbulence Simulations for Engineering Flows. Sharath Girimaj	A Systematic Study of DDES and IDDES in a High-Order Discontinuous Galerkin Solver. Luca Alberti, Emanuele Carnevali, Andrea Crivellini, Gianmaria Noventa	Interscale Momentum Transfer in Wall Turbulence. Joy Chen, James de Siles Young, Zengrong Hao, Ricardo Garcia-Mayoral	Pressure and Turbulence Intensity Effects on Lean Premixed Hydrogen Flames under High Strain. Mohammad Fathi, Stefan Hickel, Anh Khoa Doan, Ivan Langella
17:10-17:30	Examining Chaotic and Deterministic Dynamics for AI-based Climate Control. Nikos Christakis, Dimitris Drikakis, Ioannis Kokkinakis	Complementarity of Steady State RANS and Scale-Resolving Hybrid Models for External Aerodynamic Applications. Sylvain Lardeau, Michael Meys	Large-Eddy Simulation of Rotational Effects on Boundary Layers over an Airfoil. Antonio Mezzacapa, Vishal Kumar, Giuliano De Stefano, Ugo Piomelli	Quantifying the Scale Effect in Hydrogen/Air Explosions Using High-Fidelity Simulations with Detailed Chemistry. Maximilian Bambauer, Josef Hasslberger, Finn Ohlndieck, Markus Klein
17:30-17:50	Discovering Flow Separation Control Strategies in 3D Wings via Deep Reinforcement Learning. Ricard Montaña, Bernat Font, Pol Suárez, Jean Rabault, Oriol Lehmkühli, Ricardo Vinuesa, Ivette Rodriguez	Comparative Assessment of Scale Adaptive Turbulence Models for Aerodynamic Applications. Robin Mörösch, Eike Tangermann, Markus Klein	Wall-Pressure Based Stochastic Estimation of Velocity Fluctuations in High Reynolds Number Pipe Flow. Giulio Diacome, Lorenzo Lazzarini, Alessandro Talamelli, Gabriele Bellani, Wajdi Basri	Numerical Investigation of Detonation Dynamics in an Experimental Pulse-Wave Generator. Aleksandar Karac, Adnan Djugum, Kemal Hanjalic, Izet Smajevic
17:50-18:10	Towards the Usage of Geometry Agnostic beta-Variational-autoencoders for Model Order Reduction of Turbulent Flows. Benet Eximeno Franch, Amau Mro, Ivette Rodriguez, Oriol Lehmkühli	Effect of Turbulent Inflow Conditions on the Dynamics of a 3D Supersonic Cavity Asymmetric Flow. Jaime Vaquero, Sébastien Deck	Mean Flow Scaling of Stably Stratified Turbulent Channel Flows. Sanath Kotturshettar, Pedro Costa, Rene Pecnik	Towards Reduced Modeling of Bumer Stabilized Flames With Flame Retardants. Vanessa Stegmayer, Ulrich Maas, Vlachestas Bykov

18:30-20:00 **Welcome Reception**

Day 2

8:00-9:00

Registration

9:00-9:45
9:45-10:30

Keynote lecture – **Dennice Gayme: A coherent structure-based model of wall-bounded shear flows** – Chair: Paola Cinnella
Keynote lecture – **Filippo Coletti: The turbulence along and beneath a free surface** – Chair: Sharath Girimaji

10:30-11:00

Coffee Break

11:00-13:00

Parallel sessions

	Machine Learning for Turbulence Chair: Richard Sandberg	LES Modeling Chair: Stefan Hickel	Flow Control Chair: Woutijn Baars	Multiphase Flows Chair: Alfredo Soldati
11:00-11:20	Turbulence closure for the compressible RANS equations assisted by Field-Inversion & Machine-Learning. Bartolomeo Fanizza, Pedro Stefanini Volpiani, Florent Renac, Denis Sipp	withdrawing last minute	Application of Riblets to Separating Turbulent Boundary Layers. Amreza Rouhi, Vishal Kumar, Onil Lehmkuhl, Wen Wu, Melissa Kozul, Alexander Smits	Experimental Methods on the Collection of Mono-Component Freely Falling Droplets. Max Goh, Peter Beshay, Elsa Ang, Chang-Wei Kang, Teng Yong Ng, Peng Cheng Wang
11:20-11:40	Using Physical Informed Neural Network (PINN) to Improve a k- ω Turbulence Model. Lars Davidson	Imposing Near-Wall Scaling Constraints in Machine-Learned Symbolic Subgrid-Scale Closures. Josef Hasslberger, Maximilian Reissmann, Richard Sandberg, Markus Klein	Simultaneous Optimization of Actuator Placement and Control Policy for Active Flow Control. Yusuke Yugeta, Yosuke Hasegawa	Numerical Investigation on Free-Falling Droplets: Limitations and Gaps for Improvement. Peter Beshay, Max Goh, Elsa Ang, Chang-Wei Kang, Teng Ng, Peng Wang
11:40-12:00	Towards a Unified Turbulence Model through Multi-Objective Learning. Hao-Chen Wang, Zhuo-Ran Liu, Heng Xiao	LES-ADM Accuracy Assessment via an Error-Landscape Approach. Lena Caban, Artur Tyfiszczak, Bernard Geurts	Evaluation of Blowing and Suction Controls to Developing and Decaying Processes of Streamwise Vortex. Shohta Hosouchi, Tomohiro Nimura, Akira Murata, Kaoru Iwamoto	Simulation of Turbulent Liquid-Solid Pipe Flow Using the Two-Fluid Model. Donald Bergstrom, Evan Banadnya, Ata Sopot
12:00-12:20	Bi-Fidelity Gene Expression Programming for RANS Modelling. Renzhi Tian, Richard Dwight, Stefan Hickel	Challenging Deconvolution Methods for a Posteriori Validation of Subgrid Scale Models: Application to High Schmidt Number Fields. Muhammad Harchaoui, Aymeric Vié, Christian Tenaud, Denis Veynante, Benedetta Franzelli	DNS-Informed Adjoint Shape Optimization for High Performance Turbulators. Yukinori Kametani	CFD Modeling of the Hydrodynamics in an Unbaffled Vortex Reactor. Abdul Samad Rana, Tariq Mahmud, Kevin Roberts, Bruce Hanson
12:20-12:40	Mixed Data-Source Transfer-Learning for a Three-Dimensional Turbulence Model Augmented Physics-Informed Neural Network. Christian Toma, Bharathram Ganapathisubramani, Sean Symon	Spectral LES Modelling for Passive Scalar with Phase Relaxation Time in Isotropic Turbulence. Hiromichi Kobayashi, Toshiyuki Gotoh	Direct Numerical Simulations of Turbulent Drag-Reduction via Piezoelectric Actuation. Amr Anjadmanesh, Aman Kidanemariam, David Chappell, Mahdi Bodaghi, Amreza Rouhi	Tracking and Stereo-Matching Particle Clouds in Turbulence for Dispersion Studies. Ron Schnapp
12:40-13:00		Merging Filtering, Modeling and Discretization to Simulate Large Eddies in Burgers' Turbulence. Roel Verstappen	Shape Optimization of Drag-Reducing Surface in Turbulent Flow by Adjoint Method. Ming Liu, Yosuke Hasegawa	Comparison of Camera Calibration Methods for Particle Tracking Velocimetry. Robin Barta, Alex Liberton, Ron Schnapp

13:00-14:00

Lunch

14:00-16:00

Parallel sessions

	Machine Learning for Turbulence Chair: Paola Cinnella	Numerical Methods for Scale-Resolving Simulations Chair: Francesco Capuano	High-Speed Flows Chair: Soshi Kawai	Multiphase Flows Chair: Cristian Marchioli
14:00-14:20	An Interpretable Data-Driven Wake Model: Analogy with the k- ϵ Formulation. Kherfen Jijadi, Richard Dwight, Anh Khoa Doan, Ali Eidi	A Rational Length Scale for Large-Eddy Simulations on Anisotropic Grids. F.Xavier Trias, Jesús Ruano, Entico Di Lavore, Alexey Duben, Andrey Gorbets	Wall Cooling Effects on Entropy Production in Shock-Boundary Layer Interactions. Francesco De Vanna	Wall-Resolved Large Eddy Simulation of Particle-Induced Erosion Damage Using Eulerian-Lagrangian Mp-Pic Method. Jay Darji, Sherwin Fatafi, Nikolai Komev
14:20-14:40	Developing Data-Driven Near-Wall Pressure-Strain Correlations for Elliptic Differential Reynolds-Stress Models. Sean Hanrahan, Melissa Kozul, Richard Sandberg, Suvad Jakiric, Dragan Kozulovic	A mimetic Finite Volume Method on Collocated Grids for Incompressible Flows. Daniel Santos Serrano, Johannes Arend Hopman, Josep Plana-Riu, F.Xavier Trias	Numerical Simulation of Free-Oscillation Blunt Cone Coupled with Hypersonic Transition. Heng Zhang, Zhixiang Xiao	The Effect of Nucleation and Condensation Modeling on the Prediction Accuracy in the Mixing of Two Jets Using an Euler-Lagrange Approach. Christoph Grigo, Christoph Bode, Tim Wittmann
14:40-15:00	Development of GANs-based Wall Model for Large Eddy Simulation of Wall-Bounded Flow. Takumi Endo, Ming Liu, Zhuchen Liu, Yusuke Yugeta, Chisachi Kato, Yosuke Hasegawa	High-Order Symmetry-Preserving Discretizations: Application to Repeated Matrix Block Structures. Josep Plana-Riu, Daniel Santos Serrano, F.Xavier Trias, Assensi Oliva	Reynolds Number Effects on Shock-Wave/Turbulent Boundary-Layer Interactions over Ridge-Type Roughness. Wencan Wu, Luis Laguarda Sanchez, Davide Modesti, Stefan Hickel	An Enhanced Generalised Multiphase Modelling Approach for Slug Flow Boiling. Hanán Aburema, Bruce Hanson, Michael Fairweather, Marco Colombo
15:00-15:20	Role of Discretization Error During Training of Machine-Learned Turbulence Models. Joseph Gonzales, Christopher Roy, Heng Xiao	An Unconditionally Stable, Energy Preserving Method for Magneto-hydrodynamics. Johannes Arend Hopman, Joaquim Rigola, F.Xavier Trias	Supersonic Turbulent Boundary Layers over Boat Tail Shapes. Davide Modesti, Francesco Salvatore, Matteo Bernardini	Viscous Drop Linear Stability Analysis. Oscar Rodriguez, Leonel Beckedorff, Fabio Sotini, Alfredo Soldati
15:20-15:40	Data-Driven RANS Closures Using a Relative Importance Term Analysis-Based Zonal Approach for 2D and 3D Separated Flows. Tyler Buchanan, Monica Lăcătuș, Alastair West, Richard Dwight	Enforcing Entropy Conservation in the Numerical Simulation of Compressible Flows for Thermally Perfect Gas Models. Gennaro Coppola, Alessandro Aiello, Carlo De Michele	Turbulent Hypersonic Flow over a Recessing Low-Temperature Abator. Ata Onur Baskaya, Luis Laguarda, Stefan Hickel	Bubble Breakup in Homogeneous Isotropic Turbulence. Leonel Beckedorff, Alfredo Soldati
15:40-16:00	<i>SIG 54 Data-driven Turbulence Modelling Challenge</i>		Numerical Studies of Hypersonic Multi-State Flow Past a Cone-Slice-Ramp by Tr-IDDES-SPOM. Zhixiang Xiao, Yijiang Yang	

16:00-16:30

Coffee Break

16:30-17:50

Parallel sessions

	Turbulence and Heat Transfer Chair: Witold Elsner	Numerical Methods for Scale-Resolving Simulations Chair: Xavier Trias	High Pressure Flows Chair: Markus Klein	DNS of Multiphase Turbulence Chair: Alessio Roccon
16:30-16:50	Effect of Variable Fluid Properties on the Subgrid-Scale Modeling of Turbulent Heat Transport. Christoph Imenfried, Halfried Steiner	A High-Order Modal Discontinuous Galerkin Solver with Structure-Preserving Properties for Scale-Resolving Simulations. Emanuele Carnevali, Andrea Crivellini, Luca Alberti, Alessandro Colombo	Experiments of Microconfined High-Pressure Transcritical Fluid Turbulences. Enrique Hurtán, Lluís Jofre, Reda Elmansy, Marc Jofre, Jasmina Casals-Tomé	Long Heavy Fibers in Wall Turbulence - Effects of Flexibility, Length and Fluid Inertia. Darsh Jeswin Dhas Sam, Cristian Marchioli
16:50-17:10	Application of a Penetration Length Concept for Evaluating the Impact of Building Covering Vegetation on Wind-Driven Natural Ventilation of Indoor Spaces. Christoph Imenfried, Vasiliki Pappa, Christof Gromke, Demetri Bouris	An Analysis of Splitting Errors in Projection-Based Immersed Boundary Methods. Francesco Capuano	Impact of High-Pressure Transcritical Thermodynamics on Turbulence Generation. Reda Mohamed Yousef Abdallah Elmansy, Guillem Barea, Fernando Melibovsky, Iñaki Jofre	High-Performance Computing Simulations of Bubble-Laden Turbulence: Departures From Kolmogorov Scaling. Andrea Montessori, Marco Lauricella, Luca Brandt
17:10-17:30	DNS of Turbulent Natural Convection Flows in a Differentially Heated Cavity with Conjugate Heat Transfer. Mélanie Dreina, Martin David, Stéphane Abide	A Portable Algebraic Implementation for Reliable Industrial LES. Marçal Mosqueda Otero, Adel Abaali-Baldelou, Josep Plana-Riu, Xavier Alvarez-Farre, Guillem Colomer, F.Xavier Trias, Andrey Gorbets, Assensi Oliva	Two-Dimensional Numerical Simulation Study of Multicomponent Mixing in a Transcritical Shear Layer: Application and Performance Analysis of a Tabulated Equation of State Approach. Isabelle Veith, Alexander Doehring, Markus Klein	How the Turbulent Structures Behind Bubbles Influence the Mass Transfer to the Bulk Liquid. Maïke Ballussen
17:30-17:50	Effect of Small Angle of Attack on Flow Around Two Tandem Square Buildings of Different Heights. Renata Gnatowska		LES of Multi-Armed Variable Density Jets. Karol Wawrzak, Artur Tyfiszczak	Combining Large and Small-Scale Simulations to Dissect the Onset of Clustering. Manuel Moriche, Manuel Garcia-Villalba, Markus Uhlmann

18:00-23:00

Tour and Gala Dinner

Day 3

8:00-9:00

Registration

9:00-9:45
9:45-10:30

Keynote lecture – **Roberto Verzicco: Thermally driven turbulence with phase change** – Chair: Markus Klein
Keynote lecture – **Rene Pecnik: Turbulence modeling for compressible flows and heat transfer** – Chair: Soshi Kawai

10:30-11:00

Coffee Break

11:00-13:00

Parallel sessions

	Data-driven Techniques for Wall-bounded Turbulence Chair: Saleh Rezaeiravesh	High-fidelity Simulations of Industrial Flows Chair: Maria Vittoria Salvetti	Turbulence over Rough and Permeable Walls Chair: Bharathram Ganapathisubramani	DNS of Multiphase Turbulence Chair: Mahdi Saeedipour
11:00-11:20	Prediction of Extreme Events in Turbulent Signals of Wall-Bounded Flows David Martin, Joan Grau, Lluís Jofre	Harnessing the Power of Exascale Computers to Study In-Service Effects on Turbine Components. Richard Sandberg, Thomas Jolly, Massimiliano Nardini	The Effect of Perforated Plate Roughness on Skin Friction Drag in Turbulent Boundary Layers. Van Thuan Hsing, Bo Yang, Maziar Ajramandi	Turbulent Drag Reduction in Water-Lubricated Channel Flow of Highly Viscous Oil. Alessio Rizzoni, Francesco Zonta, Alfredo Soldati
11:20-11:40	Bayesian Optimization of the Structural Load of Multi-Step Cylinders. Cai Tian, Daniele Massaro, Philipp Schlatter	Evaluation of a New Explicit Wall-Function Formulation for Large Eddy Simulation. Ekaterina Guseva, David Flad, André Nogueira, Daniel Graebin, Florian Mentzer	Bypass Transition on a Rough-Ribbed Surface: Effects of Free-Stream Turbulence. Ananth S M, Melissa Kozul, Nagabhushana Rao Vadlamani, Richard Sandberg	Numerical Simulation of Water-in-Fuel Emulsion Jet. Khalil Abo-ameha, Dario Zivkovic, Josef Hasslberger, Markus Klein
11:40-12:00	Stochastic Reduced Order Model of Diurnal Cycles. Søren Juhl Andersen, Juan Pablo Murcia Leon	Impact of Wind Direction on Flow over a Realistic Urban Area: A Large-Eddy Simulation Study. Ivette Rodriguez, Josep M. Duro, Ernest Mestre, Ming Teng, Oriol Lehmkühl	Combined Effects of Pressure Gradient and Roughness in Channel Flows. Maradebora Maurello, Angela Busse, Neil Sandham	Computational Evidence Questioning the Large-to-Small Breakup Cascade in Liquid Jet Atomization: DNS Study and Implications for Modeling. Elias Trautner, Josef Hasslberger, Sebastian Ketterl, Markus Klein
12:00-12:20	Flow Over Step-Up Canyons Immersed in Boundary Layers: Simulation And Analysis. Saleh Rezaeiravesh, Eman Bagheri, Adalberto Perez, Daniele Massaro, Philipp Schlatter	Wall-Modeled Large Eddy Simulations for Optical Turbines. Jordan Angel, Cetin Kirs	Turbulent Flow over a Permeable Wall under a Range of Reynolds Numbers. Wojciech Sadowski, Francesca di Mare	Direct Numerical Simulation of Inertial Particle Transport in Stably Stratified Turbulent Boundary Layers. Baptiste Hardy, Pedro Costa
12:20-12:40		Characterization of the Tip Leakage Vortex And Corner Separation in a Compressor Cascade at Near-Stall Conditions. Claudio Troncoso, Rodrigo Márquez, Ivette Rodriguez, Jordi Ventosa Molina	withdrawn last minute	The Effect of Density Ratio On Flow Regime and Heat Transfer in Turbulent Wall-Bounded Gas-Liquid Flow. Giandomenico Lupo, Peter Wellens, Pedro Costa
12:40-13:00		High-Fidelity Simulations of Adverse Pressure Gradient Flow over a Rounded Step for Turbulence Model Improvement Via Database Generation. Michel Rasquin, Margaux Boxho, Thomas Toulorge, Koen Hillenaar	Turbulent Forced Convection over Porous Lattices. Aneek Chakraborty, Stefan Hicke, Davide Modesti	Energy Transfer Mechanisms in Compressible Two-Phase Turbulent Flows. Niccolò Tonicello, Suhas Jain, Luis Hatashita

13:00-14:00

Lunch

14:00-15:40

Parallel sessions

	Data-driven Techniques for Wall-bounded Turbulence Chair: Philipp Schlatter	High-fidelity Simulations of Industrial Flows Chair: Cetin Kirs	Turbulence over Rough Walls Chair: Davide Modesti	DNS of Multiphase Turbulence Chair: Pedro Costa
14:00-14:20	Multivariate Multifidelity Modelling for Turbulent Flows. Florian Köpfgner, Mikhail Glazunov, Saleh Rezaeiravesh, Philipp Schlatter	Scale-Resolving Simulations of Transitional Flow over a New Low-Pressure Turbine Blade. Ananth S M, Nicolas Odier, Florent Duchaine	Assimilating Rough Features. Martina Fomichetti, Utam Cadambi Padmanaban, Sean Symon, Bharathram Ganapathisubramani	DNS of Gravity-Driven Bubble Swarms On Inclined Channels. Nestor Vinicio Balcázar Arciniega, Joaquim Rigola, Alberto Oliva
14:20-14:40	Closure of Nonlinear Frequency-Domain Reduced-Order Models for Unsteady Flows. Xiaodong Li, Davide Lasagna	Scale-Resolving Simulation of a Turbulent Boundary Layer Under Adverse Pressure Gradient. Alessandro Colombo, Francesco Carlo Massa	Use of Genetic Expression Programming for Inferring Roughness Correlations From a DNS Database. Kenan Cengiz, Zhichao Gu, Lars Wein	Using DNS of Drops in HIT to Develop Models for Unresolved Scales in Multiphase Flows. Shahab Mirjali
14:40-15:00	Statistical Convergence of Selected Quantities in Canonical Wall Turbulence. Siavash Toosi, Daniela Ayyazova, Saleh Rezaeiravesh, Philipp Schlatter	Wall-Resolved Large Eddy Simulations of a Pitching NACA0012 in Deep Dynamic Stall Giacomo Balzan, Alberto Guardone	Global Drag of Heterogeneous Surfaces with Varying Reynolds Number. Carola Schmidt, Patricia Sújár-Garrido, Robin Leister, Jochen Kneissel, Davide Gatti, Bettina Frohnapef	A Wall-Modelled LES Framework for Droplet-Laden Turbulent Flows Using Physics-Based Models Informed by DNS. Federico Dalla Barba, Xiangen Kong, Michele Cogo, Francesco Picano
15:00-15:20	Generalized Deep Learning Model for Predicting Drag Reduction in Pulsating Turbulent Pipe Flow with Arbitrary Acceleration and Deceleration. Sota Kumazawa, Tomohiro Nimura, Akira Murata, Kaoru Iwamoto	Noise Reduction of a Circulation-Controlled Wing with Porous Insert. Varun Ananthan, Rinie Akkermans, Tianxiang Hu, Peiqing Liu, David Burzynski	Impact of Feather-Inspired Surface Structures to an Airfoil Boundary Layer. Eike Tangemann, Markus Klein	Particle-Resolved Direct Numerical Simulations of Turbulent Slurry Flow in Horizontal Pipes. Wen-Paul Breugem, Tanq Shajahan
15:20-15:40	Data-Driven Enhancements to Transition and Turbulence Modeling under Varying Pressure Gradients and Unsteadiness Effects. Yuan Fang, Marco Rosenzweig, Maximilian Reissmann, Roberto Pacciani, Michele Marconcini, Francesco Bertini, Richard Sandberg	Assessing the Impact of Exchange Location Height on High-Order Wall-Modeled LES. Matteo Rosellini, Pedro Munoz-Hoyos, Alessandro Mariotti, Maria Vittoria Salvetti, Oriol Lehmkühl	Simulations of Zero Pressure-Gradient Turbulent Boundary Layers over Riblets. Vishal Kumar, Amireza Rouhi, Oriol Lehmkühl, Wen Wu, Melissa Kozul, Alexander Smita	<i>What can we learn from direct numerical simulations of multiphase turbulence?</i>

15:40-15:50

Closure – Maria Vittoria Salvetti & Stefan Hicke

15:50-16:30

Coffee & Goodbyes