

DAY 1	Wednesday, October 26, 2022				
08:30	09:00	Registration			
09:00	09:10	Opening			
09:10	09:50	Keynote lecture	Ananias Tomboulides – Using high order methods for large-scale combustion simulations Chair: TBA, Room: TBA		
10:00	11:00	Regular talks	Session: Numerics and methodology Chair: TBA, Room: TBA	Session: Convection and heat/mass transfer Chair: TBA, Room: TBA	
10:00	10:15	RT1	Approximate deconvolution of implicit filters induced by numerical schemes for improved subfilter stresses evaluation (Andrzej Boguslawski, Karol Wawrzak, Bernard Geurts)	A posteriori LES of forced convection along heated and cooled walls with temperature-dependent fluid properties (Lorenzo Sufrà, Helfried Steiner)	
10:15	10:30	RT2	Finite-difference viscous filtering for non-regular meshes (Eric Lamballais, Rodolphe Perrin)	Pool boiling simulations using a geometric volume of fluid method (Bendiks Boersma)	
10:30	10:45	RT3	The Brinkman penalization technique for porous-fluid media: A Lattice Boltzmann and Semi-Lagrangian Vortex method comparison (Simon Marie, Chloé Mimeau, Iraj Mortazavi)	Effect of variable density on subgrid scales (Antonella Abba', Mohammad Hosein Aliyoldashi, Andrea Cimarelli, Massimo Germano)	
10:45	11:00	RT4	DNS and LES of buoyancy-driven turbulence at high Rayleigh numbers: numerical methods and subgrid-scale models (F. Xavier Trias, Xavier Álvarez-Farré, Daniel Santos, Andrey Gorobets, Assensi Oliva)	Conjugate Heat Transfer simulation of target station 2 of the ISIS Muon and Neutron Source (Gregory Cartland-Glover, Stefano Rolfo, David Emerson, Dan Wilcox, Daniel Blanco-Lopez, Laslie Jones, David Jenkins, Stephen Jago)	
11:00	11:30	Coffee Break			
11:30	12:45	Regular talks	Session: Combustion and reactive flows Chair: A. Tomboulides, Room: TBA	Session: Bluff bodies Chair: TBA, Room: TBA	
11:30	11:45	RT5	A four mixture fraction FPV-LES for the co-firing of coal and ammonia (Dominik Meller, Linus Engelmann, Patrick Wollny, Andreas Kempf)	Large-eddy simulation of the flow around rectangular cylinders of different chord-to-depth ratios: impact of upstream-edge sharpness (Maria Vittoria Salvetti, Gianmarco Lunghi, Mario Morello, Alessandro Mariotti)	
11:45	12:00	RT6	Effects of the strain rates on the formation and growth of nano-particles in turbulent flames (Luis Cifuentes, Irenäus Wloka, Andreas Kempf)	Direct Numerical Simulations of the flow around a 5:1 rectangular body with sharp corners (Roberto Corsini, Andrea Cimarelli, Enrico Stalio)	
12:00	12:15	RT7	Hydrogen jet flame control by global mode (Agnieszka Wawrzak, Karol Wawrzak, Andrzej Boguslawski, Artur Tyliczszak, Bernard Geurts)	Large-eddy simulation of the accelerating flow around square and rectangular cylinders (Alessandro Mariotti, Stefano Brusco, Gianmarco Lunghi, Giuseppe Piccardo, Maria Vittoria Salvetti)	
12:15	12:30	RT8	Large-eddy simulation of the stratified swirl flames series using an assumed or hybrid assumed/transported filtered density function approach (Seung-Jin Baik, Eray Inanc, Andreas Kempf)	Data-driven large-eddy simulation of the flow around a 5:1 rectangular cylinder (Marcello Meldi, Gabriel Moldovan, Alessandro Mariotti, Maria Vittoria Salvetti, Guillaume Lehnasch, Laurent Cordier)	
12:30	12:45	RT9	Reduced order combustion modelling with the Flamelet Generated Manifold method for turbulent ammonia/hydrogen flames (Nithin Mukundakumar, Rob Bastiaans)	Large-eddy simulation of flow around the 25° Ahmed car body at different Reynolds numbers (Florian Menter, Dmitry Kolmogorov, Alexey Matyushenko, Andreas Hüppe, Andrey Garbaruk)	
12:45	14:30	Lunch Break			
14:30	15:10	Keynote lecture	Andrea Beck - Towards Data-Driven closure models for implicitly filtered LES Chair: TBA, Room: TBA		
15:20	16:20	Regular talks	Session: Hybrid LES/RANS Chair: TBA, Room: TBA	Session: Moving bodies and fluid-structure interactions Chair: TBA, Room: TBA	
15:20	15:35	RT10	An active hybrid RANS/LES approach for grey area mitigation (Mahitosh Ajaykumar Mehta, Remi Manceau, Vladimir Duffal, Benoît De Laage de Meux)	Wind gust-induced flutter of an elastically mounted airfoil: A fluid-structure interaction study based on LES (Khaled Boulbrachene, Michael Breuer)	

15:35	15:50	RT11	Seamless interface method for grey-area mitigation in scale-resolving hybrid RANS-LES (Magnus Carlsson, Stefan Wallin, Lars Davidson, Shia-Hui Peng, Sebastian Arvidson)	Near-wall flow characteristics of flapping foils at intermediate Reynolds number (Andhini N. Zurman-Nasution, Gabriel D. Weymouth)
15:50	16:05	RT12	Hybrid RANS-LES simulations of mild combustion in a cyclonic burner (Lorenzo Giuntini, Chiara Galletti, Lorenzo Frascino, Claudia Genovese, Giancarlo Sorrentino, Giovanni Battista Ariemma, Raffaele Ragucci)	Direct numerical simulation of flow around spanwise-flexible, flapping wings in horizontal tandem configuration (Cayetano Martínez-Muriel, Gonzalo Arranz, Manuel García-Villalba, Oscar Flores)
16:05	16:20	RT13	A hybrid RANS-LES approach for the numerical simulation of compact inline gas-liquid separators (Francesco Maluta, Alessandro Paglianti, Giuseppina Montante)	Numerical simulation of self-propelled flexible plates in tandem (Gonzalo Arranz, Manuel García-Villalba, Oscar Flores)
16:20	16:50	Coffee Break		
16:50	18:05	<i>Regular talks</i>	<i>Session: Uncertainty quantification and data assimilation</i> <i>Chair: A. Beck, Room: TBA</i>	<i>Session: Bubbly flow</i> <i>Chair: TBA, Room: TBA</i>
16:50	17:05	RT14	Numerical simulation of left atrium hemodynamics: Uncertainty quantification with respect to inflow conditions (Eduardo Duran, Manuel García-Villalba, Pablo Martínez-Legazpi, Alejandro Gonzalo, Elliot McVeigh, Andrew Kahn, Oscar Flores, Javier Bermejo, Juan Carlos del Álamo)	Volume conservation methods for VOF-based long-term simulations of turbulent bubble-laden flows on coarse grids (Elias Trautner, Josef Hasslberger, Paolo Cifani, Markus Klein)
17:05	17:20	RT15	Uncertainty Quantification of LES for the buoyancy-driven mixing process between two miscible fluids using Staggered PCE and KLE - Differentially Heated Cavity of aspect ratio 4 (Philipp Wenig, Stephan Kelm, Markus Klein)	DNS of dispersed bubbly Taylor-Couette turbulence (Arnout Franken, Sagy Ephrati, Paolo Cifani, Bernard Geurts)
17:20	17:35	RT16	Data-driven POD-based modeling for high-fidelity coarsening of two-dimensional Rayleigh-Bénard turbulence (Sagy Ephrati, Paolo Cifani, James-Michael Leahy, Erwin Luesink, Arnout Franken, Bernard Geurts)	Analysis of turbulent kinetic energy budgets in co-current Taylor bubble flow (Edo Frederix, Sina Tajfirooz, Ed Komen)
17:35	17:50	RT17	Machine learning models for subgrid scale tensors of 2D Rayleigh-Bénard convection (James-Michael Leahy, Paolo Cifani, Michele Buzzicotti, Luca Biferale, Bernard J. Geurts)	DNS of mass transfer in bi-dispersed bubbly flows in a vertical pipe (Néstor Vinicio Balcázar Arciniega, Joaquim Rigola, Assensi Oliva)
17:50	18:05	RT18	Machine-assisted subgrid-scale modelling for Large Eddy Simulation-Probability Density Function approaches (Tin Hang Un, Salvador Navarro-Martinez)	Taylor bubble breakup in counter-current turbulent flow using algebraic and geometric Volume Of Fluid method (Jan Kren, Edo Frederix, Blaž Mikuž)
18:10	20:00	Welcome Aperitif		

DAY 2		Thursday, October 27, 2022		
09:00	09:40	Keynote lecture	Vittorio Michelassi - High-Fidelity and Machine-Learning-Assisted Modeling of Turbomachinery for Energy Transition Chair: TBA, Room: TBA	
09:50	10:50	Regular talks	<i>Session: Flow separation 1</i> Chair: TBA, Room: TBA	<i>Session: Industrial and environmental applications 1</i> Chair: V. Michelassi, Room: TBA
09:50	10:05	RT1	Data-driven wall shear stress model for Large Eddy Simulations applied to flow separation (Margaux Boxho, Michel Rasquin, Thomas Toulorge, Grégoire Dergham, Grégoire Winckelmans, Koen Hillewaert)	Direct numerical simulations of non-linear transition in the magnetohydrodynamic pipe flow subject to a transverse magnetic field (Bernard Knaepen, Yelyzaveta Velizhanina)
10:05	10:20	RT2	Reynolds-number dependence of separating flow over a bump in spanwise rotating channel flows (Wen Wu, Devika Patel, Benjamin Savino)	A priori analysis for LES of a plume in crossflow (Daniel Fenton, Elisabetta De Angelis, Andrea Cimorelli, Jean-Paul Mollicone, Maarten van Reeuwijk)
10:20	10:35	RT3	In-situ analysis of backflow events and their relation to separation in turbulent wing flows through well-resolved LES (Fermin Mallor, Jiahui Liu, Marco Atzori, Adam Peplinski, Ricardo Vinuesa, Ramis Örlü, Tino Weinkauff, Philipp Schlatter)	Proper Orthogonal Decomposition of LES data over real urban morphology (Yixun Liu, Chun-Ho Liu)
10:35	10:50	RT4	DNS and POD/DMD analysis of separated flow in a three-dimensional diffuser (Arnau Miro, Benet Eiximeno, Ivette Rodriguez, Oriol Lehmkuhl)	LES study of the urban boundary layer over a city (Lan Yao, Chun-Ho Liu)
10:50	11:20	Coffee Break		
11:20	13:13	Regular talks	<i>Session: Compressible flow</i> Chair: TBA, Room: TBA	<i>Session: LES fundamentals and modelling</i> Chair: TBA, Room: TBA
11:20	11:35	RT5	Coherent turbulent stresses in transonic nozzle with shock-wave/turbulent boundary layer interaction (Nicolas Goffart, Benoît Tartinville, Charles Hirsch, Sergio Pirozzoli)	DNS-based turbulent closures for sediment transport using symbolic regression (Yvonne Stöcker, Christian Golla, Ramandeep Jain, Jochen Fröhlich, Paola Cinnella)
11:35	11:50	RT6	High-Reynolds compressible flows simulation with wall-modelled LES and Immersed Boundary Method (Francesco De Vanna, Francesco Picano, Ernesto Benini)	LES subgrid model assessment for wall-bounded decaying turbulence (Linus Engelmann, Patrick Wollny, Dominik Meller, Irenaeus Wlokas, Andreas Kempf)
11:50	12:05	RT7	Wavelet-based adaptive LES for compressible flows (Giuliano De Stefano, Oleg V. Vasilyev)	Coarse-grained modelling via canonical scale separation in 2D incompressible hydrodynamics (Milo Viviani, Paolo Cifani, Bernard Geurts, Klas Modin, Sagy Ephrati)
12:05	12:20	RT8	A wall-model for compressible flows based on a new scaling of the law of the wall (Romain Debroeyer, Michel Rasquin, Thomas Toulorge, Yann Bartosiewicz, Grégoire Winckelmans)	Subgrid-scale modelling for a semi-Lagrangian method (Marthe de Crouy-Chanel, Chloé Mimeau, Iraj Mortazavi)
12:20	12:35	RT9	Scale-resolving simulation of compressible turbulent flows with a Discontinuous Galerkin method (Francesco Bassi, Alessandro Colombo, Francesco Carlo Massa)	Structural models for particles in LES: Assessment through the sub-filter enstrophy field (Michał Rajek, Jacek Pozorski)
12:35	12:50	RT10		Potential of periodic box homogeneous isotropic turbulence as a sub-grid scale model (Githin Tom Zachariah, Harry E.A. Van den Akker)
12:50	14:30	Lunch Break		
14:30	15:10	Keynote lecture	Adrian Lozano-Duran - Building-block flow model for large-eddy simulation Chair: TBA, Room: TBA	
15:20	16:20	Regular talks	<i>Session: Turbulent flows</i> Chair: TBA, Room: TBA	<i>Session: Multiphase flows</i> Chair: TBA, Room: TBA
15:20	15:35	RT11	Direct Numerical Simulation of scalar transport across the Interface between a porous medium and turbulent flow (Simon v. Wenczowski, Michael Manhart)	DNS of magnetic density separation in the wake of a honeycomb (Leon Thijs, Hans Kuerten, Jos Zeegers, Sina Tajfirooz)

15:35	15:50	RT12	Turbulence characteristics of helical pipe flows (Valerio Lupi, Ramis Örlü, Philipp Schlatter)	Collision statistics of cloud droplets in homogeneous isotropic turbulence considering lubrication forces and non-continuum molecular effects (Ahmad Ababaei, Antoine Michel, Bogdan Rosa)
15:50	16:05	RT13	Modulation of turbulence flux budgets by varying fluid properties in heated high Prandtl number flow (Christoph Irrenfried, Helfried Steiner)	Influence of mass loading on turbulent collision coalescence of cloud droplets (Antoine MICHEL, Ahmad Ababaei, Bogdan Rosa)
16:05	16:20	RT14	Turbulent Poiseuille flow of two immiscible liquid layers inside a channel (George Giamagas, Francesco Zonta, Alessio Roccon, Alfredo Soldati)	Drag reduction in turbulent wall-bounded flows of realistic polymer solutions (Francesco Serafini, Francesco Battista, Paolo Gualtieri, Carlo Massimo Casciola)
16:20	16:50	Coffee Break		
16:50	18:30	<i>Regular talks</i>	<i>Session: Aerodynamics/Aeroacoustics 1</i> <i>Chair: A. Lozano-Duran, Room: TBA</i>	<i>Session: Industrial and environmental applications 2</i> <i>Chair: TBA, Room: TBA</i>
16:50	17:05	RT15	Aeroacoustic source terms from turbulent flow through a 90° pipe bend predicted by Large-Eddy Simulation (Johannes Tieber, Helfried Steiner, Paul Maurerlehner, Stefan Schoder, Manfred Kaltenbacher, Günter Brenn)	High-fidelity large-eddy simulation of a pulsed jet actuator (Özgür Yalçın, Xavier Gloerfelt, Georges Saliba, Ahmad Batikh, Lucien Baldas)
17:05	17:20	RT16	Transition and acoustic excitation of stenotic pipe flows at different Reynolds numbers (Abouelmagd Abdelsamie, Seong-Ryong Koh, Gabor Janiga, Dominique Thévenin)	Large eddy simulation of a low pressure turbine cascade with turbulent end-wall boundary layers (Christian Morsbach, Michael Bergmann, Adem Tosun, Edmund Kügeler, Matthias Franke)
17:20	17:35	RT17	Extended comparison between Lattice-Boltzmann and Navier-Stokes solvers for unsteady aerodynamic and aeroacoustic computations (Alexandre Suss, Ivan Mary, Thomas Le Garrec, Simon Marié)	Spectral element based direct numerical simulation of a Flettner rotor (Martin Karp, Daniele Massaro, Niclas Jansson, Stefano Markidis, Philipp Schlatter)
17:35	17:50	RT18	Advanced LES modeling of multiperforated plates for aeronautical engines (Thibault Duranton, Laurent Gicquel, Franck Nicoud, Antoine Dauptain)	LES of the transitional flow inside a cylindrical rotor cavity supplied by a turbulent pipe flow (Thomas Hultsch, Jörg Stiller, Frank Rüdiger, Jochen Fröhlich)
17:50	18:05	RT19	Turbulent boundary layer in a 3-element high-lift wing: coherent structures identification (Ricard Montalà, Ivette Rodríguez, Oriol Lehmkuhl, Benet Eiximeno, Arnau Miró)	Modelling SGS-turbulent transport of fine particles with application to cyclone separator performance (Martin Sommerfeld, Manuel Taborda, Oscar Sgrott)
18:05	18:20	RT20	Transition prediction on a wind turbine blade at $Re = 10^6$ under varying inflow turbulence based on wall-resolved LES (Michael Breuer, Brandon Arthur Lobo, Alois Peter Schaffarczyk)	Euler-Lagrange LES predictions of a powder disperser including a multiscale wall-impact breakage model (Ali Khalifa, Michael Breuer)
20:00	22:30	Social Dinner		

DAY 3	Friday, October 28, 2022				
09:00	09:40	Keynote lecture	Irene Vignon-Clementel - Blood flow simulations for disease and surgical treatment understanding Chair: TBA, Room: TBA		
09:50	10:50	Regular talks	Session: Numerical techniques Chair: TBA, Room: TBA		Session: Environmental and geophysical flows Chair: I. Vignon-Clementel, Room: TBA
09:50	10:05	RT1	Towards a numerical proof of turbulence closure (Giulio Ortali, Federico Toschi, Alessandro Corbetta, Gianluigi Rozza)		Direct and large-eddy simulation of turbulent oscillatory flow through a hexagonal sphere pack (Lukas Unglehrt, Michael Manhart)
10:05	10:20	RT2	On a conservative solution to checkerboarding: examining the discrete Laplacian kernel using mesh connectivity (Johannes Arend Hopman, Francesc Xavier Trias, Joaquim Rigola)		Structure-preserving integration for high-performance DNS of geophysical flows (Paolo Cifani, Milo Viviani, Klas Modin, Bernard Geurts)
10:20	10:35	RT3	An energy-preserving unconditionally stable fractional step method for DNS/LES on collocated unstructured grids (Daniel Santos, F.Xavier Trias, Guillem Colomer, Assensi Oliva)		Dynamics of a buoyant gravity current propagating in a linearly stratified medium (Vamsi Chalamalla, Tanmay Agrawal, Siva Peddada)
10:35	10:50	RT4	Feature-based mesh adaptation applied to the Large-Eddy simulation of a high-Reynolds number anisothermal impinging jet on a flat surface (Adrien Grenouilloux, Vincent Moureau, Ghislain Lartigue, Pierre Benard, Paul Ferrey)		New insights on buoyancy-driven turbulent flows with active scalar transport using LES (Kiran Bhaganagar)
10:50	11:10	Coffee Break			
11:10	12:40	Regular talks	Session: Aerodynamics/Aeroacoustics 2 Chair: TBA, Room: TBA		Session: Roughness Chair: TBA, Room: TBA
11:10	11:25	RT5	Analysis of a transonic cascade with wall-modeled LES based on DGSEM (Bjoern Klose, Edwin J. Munoz Lopez, Alex Hergt, Joachim Klinner, Christian Morsbach)		Direct numerical simulations of turbulence over two-dimensional permeable ribs (Yusuke Kuwata, Kazuhiko Suga)
11:25	11:40	RT6	Numerical investigation of the transonic non-ideal gas flow around a circular cylinder at high Reynolds number (Camille Matar, Paola Cinnella, Xavier Gloerfelt, Stephan Sundermeier, Leander Hake, Stefan aus der Wiesche)		Lattice-Boltzmann DNS of turbulent Taylor-Couette flows with a stationary grooved outer cylinder (Kazuhiko Suga, Yoshihisa Okada, Yusuke Kuwata, Masayuki Kaneda)
11:40	11:55	RT7	Leading-edge effects in free-stream turbulence induced transition in a dense gas flow (Aurelien Biennier, Xavier Gloerfelt, Paola Cinnella)		Influence of ridge aspect ratio and spacing on secondary currents in turbulent channel flow over triangular ridges (Oleksandr Zhdanov, Angela Busse)
11:55	12:10	RT8	Implicit large eddy simulation of a near post-stall NACA0012 aerofoil (Mohsen Lahooti, Guglielmo Vivarelli, Francesco Montomoli, Spencer J. Sherwin)		Reynolds number-dependency of turbulent flow over a surface fouled by barnacles (Angela Busse, Sotirios Sarakinos)
12:10	12:25	RT9	The effect of wing-tip vortices on the flow around a NACA0012 wing (Siavash Toosi, Adam Peplinski, Philipp Schlatter, Ricardo Vinuesa)		Wall-Modelled Large-Eddy Simulations of flows with non-uniform roughness (Teresa Salomone, Ugo Piomelli, Giuliano De Stefano)
12:25	12:40	RT10	CFD simulation of a thick airfoil profile in stalled conditions adopting scale-resolving numerical methods (Stefano Passoni, Riccardo Mereu, Fabio Inzoli)		Effect of roughness on elongated particles in turbulent channel flow (Mauro De Marchis, Domenico Saccone, Cristian Marchioli)
12:40	14:00	Lunch Break			
14:00	14:40	Keynote lecture	Francesco Picano - Simulation and modeling of turbulent dilute sprays with application to respiratory flows Chair: TBA, Room: TBA		
14:50	15:50	Regular talks	Session: Particle-laden flows Chair: F. Picano, Room: TBA		Session: Turbulent flows Chair: TBA, Room: TBA
14:50	15:05	RT11	Turbulent transport in a lateral square cavity based on Lagrangian and Eulerian approaches (Magdalena Barros, Cristián Escauriaza)		The structure-based turbulent resolution approach: Evolution and applicability (Emilio Baglietto)

15:05	15:20	RT12	Direct Numerical Simulation of the breakup of solid fibers in homogeneous isotropic turbulence (Federico Dalla Barba, Francesco Picano)	Assessment of the effect of the surface tension contribution on the emulsification in linearly forced turbulence (Alexander Begemann, Theresa Trummer, Elias Trautner, Josef Hasslberger, Markus Klein)
15:20	15:35	RT13	Elongated non-spherical particles in turbulent channel flow using Euler/Lagrange approach (Manuel Alejandro Taborda, Martin Sommerfeld)	A Bayesian hierarchical multifidelity model for turbulent flows (Saleh Rezaeiavesh, Timofey Mukha, Philipp Schlatter)
15:35	15:50	RT14	Turbulence modulation by slender flexible fibers in channel flow (Davide Di Giusto, Cristian Marchioli)	Multi-scale phenomena in turbulent flows with walls and interfaces (Andrea Cimarelli, Gabriele Boga, Anna Pavan, Enrico Stalio)
15:50	16:20	Coffee Break		
16:20	17:20	<i>Regular talks</i>	<i>Session: Wall modelling</i> <i>Chair: TBA, Room: TBA</i>	<i>Session: Flow separation 2</i> <i>Chair: TBA, Room: TBA</i>
16:20	16:35	RT15	Wall-modeling of turbulent flows over a periodic hill using multi-agent reinforcement learning (Di Zhou, Jane Bae)	Laminar-turbulent transition in supercritical forward-facing steps in crossflow (Jordi Casacuberta, Stefan Hickel, Marios Kotsonis)
16:35	16:50	RT16	Development and application of an algebraic wall-function for cryogenic supercritical flows from a wall-resolved LES database (Giuseppe Indelicato, Francesco Creta, Pasquale Eduardo Lapenna, Arianna Remiddi)	Unsteady separation in a turbulent boundary layer (Francesco Ambrogi, Ugo Piomelli, David E. Rival)
16:50	17:05	RT17	Development of wall-modelling capabilities for LES in Nek5000 (Timofey Mukha, Geert Brethouwer, Philipp Schlatter)	Simulation of massively separated flows using hybrid turbulence models and mesh adaptation (Florian Miralles, Bastien Sauvage, Stephen Wornom, Frederic Alauzet, Bruno Koobus, Alain Dervieux)
17:05	17:20	RT18	Visualization of wall-modeled turbulent channel flow using spectral proper orthogonal decomposition (Hadi Hosseinzade, Donald J. Bergstrom)	Assessment of a Discontinuous Galerkin solver for the efficient simulation of turbulent separated flows (Francesco Bassi, Alessandro Colombo, Antonio Ghidoni, Francesco Carlo Massa, Gianmaria Noventa)
17:20	17:30	Closure		