

16:30-19:30	Registration Welcome Reception
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(Day 2) Tuesday, July 22, 2025

8:30-8:45	Room A: Opening
8:45-9:30	Room A: Plenary Lecture 1 Reynolds analogy in wall bounded turbulence, Nicholas Hutchins
9:30-10:15	Room A: Plenary Lecture 2 Turbulence enhancement using tumble flow in direct-injection spark-ignition (DISI) engines, Choongsik Bae
10:15-10:35	Coffee break

	Room A DNS FOR TURBULENT FLOWS (1)	Room B ROUGH WALL TURBULENCE	Room C TWO-/MULTI-PHASE FLOWS (1)	Room D ENVIRONMENTAL AND GEOPHYSICAL FLOWS (1)
10:35–10:55	Direct numerical simulation of turbulent transition on a swept flat plate with the effects of distributed roughness height and wavelength <i>*Kotaro Minamio, Kosuke Nakagawa, Ryo Araki, Takahiro Ishida, Takahiro Tsukahara</i>	Local impact of roughness topography on heat transfer in turbulent flow over rough surfaces <i>*Himani Garg, Jens Klingmann, Karl Johan Nogenmyr, Ambrosio Pedreno Marin, Alexander Stroh, Yusuke Kuwata</i>	Settling velocity of elongated particles in a quiescent fluid: the effect of volume fraction <i>*Lihao Zhao, Xinyu Jiang, Chunxiao Xu</i>	Direct Lagrangian tracking simulation of precipitating-droplet growth in turbulent cloud <i>*Masaya Iwashima, Ryo Onishi</i>
10:55–11:15	Direct numerical simulations of turbulent flows in triply periodic minimal surface porous media <i>*Adrian Rusnak, Rémi Roncen, Francois Chedevergne</i>	Relaminarization of turbulent flow in a spanwise rotating channel roughened with circular-arc ribs at high rotation numbers <i>*Wei-Jian Xiong, Jinglei Xu, Bing-Chen Wang</i>	Turbulent dispersion study on cough-induced particles <i>*Ege Batmaz, Florian Webner, Daniel Schmeling, Claus Wagner</i>	Modeling of a heavy gas turbulent dispersion in complex urban environments <i>*Sasa Kenjeres, Daoming Liu</i>
11:15–11:35	Relaminarization of turbulent puffs in pipe flow <i>*Alex Yakhot, Basheer Ahmad Khan, Shai Arogeti</i>	Experimental study of Reynolds number effects on the turbulent flow in a ribbed square duct <i>*J.-H. Ge, J. XU, B.-C. Wang</i>	Joint Reynolds number and mass loading influence on secondary motion in a particle-laden pipe flow: an eddy-resolving RANS study <i>*Xiaoyu Wang, Jeanette Hussong, Suad Jakirlic</i>	Towards high-fidelity simulation of urban flows: Mean-flow statistics <i>*Ming Teng, Josep Duro, Naim Munoz, Ernest Mestres, Jordi Muela, Oriol Lehmkuhl, Ivette Rodriguez</i>
11:35–11:55	Direct numerical simulation of turbulent vertical channel flow with large-scale control using buoyancy forces <i>*Menglei Wang, Takahiro Hayashi, Hiroya Mamori, Takeshi Miyazaki</i>	Ultimate and super-ultimate states of turbulent thermal convection between rod-mounted horizontal walls <i>*Yichen Zhang, Shingo Motoki, Genta Kawahara</i>	Impact mechanisms in impinging jets on inclined surfaces: a high-speed tracking approach <i>Atila PS Freire, Cristian MP Rosero, *Juliana BR Loureiro</i>	Numerical simulation of the impact of different tree types on air pollution from vehicle emissions in urban street canyons under chemical reactions <i>*Alibek Issakhov, Temirlan Takkozha, Aidana Sabyrkulova, Aizhan Abylkassymova</i>
11:55–12:15	Direct numerical simulation of the interaction of turbulent spots in the supersonic boundary layer on a parabolic profile <i>*Ivan Egorov, Ivan Ilyukhin</i>	Momentum and heat transfer in turbulent channels with drag-increasing riblets <i>*Stefano Cipelli, Natalie Rapp, Bettina Frohnappel, Davide Gatti</i>	On the fluid dynamics of toilet plume bioaerosols: An experimental study based on flow visualization <i>*Fernando López Peña, Anne Gosset, Marcos Lema</i>	Energy cascading in urban flows under adiabatic and isothermal conditions: Insights from 2-m large eddy simulations <i>*Rakesh Teja Konduru, Rahul Bale, Makoto Tsubokura</i>

12:15-13:35	Lunch
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	Room A DNS FOR TURBULENT FLOWS (2)	Room B AI-DRIVEN APPROACHES IN TURBULENCE (1)	Room C TWO-/MULTI-PHASE FLOWS (2)	Room D FLOW AND HEAT TRANSFER CONTROL (1)
13:35–13:55	DNS of turbulent heat transfer in a channel uniformly heated by thin-film wall heater for the validation of a ML-based denoising technique <i>*Yutaka Oda, Taisei Furukawa, Ryo Matsumoto, Ryo Nakayama, Ryosuke Matsumoto</i>	DNS-CNN simulation for high-Reynolds-number viscoelastic turbulent channel flow using 3D U-Net <i>*Eitetsu Nakashima, Ryo Araki, Takahiro Tsukahara</i>	Microstructured falling film reactors enhance hydrogen absorption and mixing: NMR/MRI experiments <i>*Georges Saliba, Jan G. Korvink, Jürgen J. Brandner</i>	Prediction of drag reduction effect in pulsating turbulent pipe flow by deep learning with generalization capability <i>*Sota Kumazawa, Tomohiro Nimura, Akira Murata, Kaoru Iwamoto</i>
13:55–14:15	Recent advances in the understanding of laminar-turbulent transition in rod bundles <i>*Elia Merzari, Carolina Bourdot Dutra, Luiz Aldeia Machado</i>	β-Variational autoencoder and transformer-based data-driven modeling of near-wall turbulence <i>*Niccolò Tonioni, Mohammad Umair, Lionel Agostini, Franck Kehervé, Laurent Cordier, Ricardo Vinuesa</i>	Experimental study on evaporation-driven flow, evaporation rate of single evaporation multi-component sessile droplet <i>*Hao Cong, Kazuyoshi Fushinobu, Tatsuya Kawaguchi</i>	Possibility of heat transfer enhancement by applying pulsation to a pipe flow under non-reverse flow conditions <i>*Hajime Nakamura, Yuki Funami, Shunsuke Yamada</i>
14:15–14:35	DNS study of axial-rotation effects on the transport of Reynolds stresses in a circular pipe flow <i>*Zhao-Ping Zhang, Bing-Chen Wang</i>	Twin experiments for data assimilation of cavitating flow around a hydrofoil assuming PIV data as the pseudo-measurement data <i>Shungo Okamura, *Kie Okabayashi</i>	Study on the morphological characteristics of flashing spray from a single-hole nozzle <i>*Zhaorui Guo, Minhyeok Lee, Yuji Suzuki</i>	Effect of plane wave ultrasound acoustic streaming in a turbulent boundary layer <i>*Takumi Watanabe, Yoshitsugu Naka</i>
14:35–14:55	DNS investigation of elementary processes in turbulent channel flow of viscoplastic fluid <i>*Takashi Ohta, Daisuke Michisaka</i>	Data-driven model of large-scale eddies in the energy-containing range in turbulence <i>*Satoshi Matsumoto, Masanobu Inubushi, Susumu Goto</i>	Effects of refrigerant charge on ice formation distribution on the evaporator surface in a vapor compression refrigeration cycle <i>*Bruno Marangolo, Leonardo Bernardini, Alekos</i>	Dissimilarity between momentum and heat transfers in a turbulent plane Couette flow controlled using streamwise traveling wave <i>*Yusuke Nabae, Hiroshi Gotoda, Koji Fukagata</i>
14:55–15:15	Numerical simulation of nonlinear stage of laminar-turbulent transition under action of controlled disturbances <i>*Natalia Palchekovskaya</i>	Optimization of a bare turbulence model for fuel rod bundles based on PINN <i>Chen Zhang, Zhenyang Sun, *Hongyang Wei, Sichao Tan, Ruifeng Tian</i>		Phase-averaged turbulence statistics and flow field in highly drag-reduced pulsating turbulent pipe flow <i>*Aoba Katakai, Tomohiro Nimura, Akira Murata, Kaoru Iwamoto</i>

15:15-15:25	Short break
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	Room A RANS (1)	Room B AI-DRIVEN APPROACHES IN TURBULENCE (2)	Room C UNSTEADY FLOWS AND BODY FORCE EFFECTS (1)	Room D FLOW AND HEAT TRANSFER CONTROL (2)
15:25–15:45	From transitionally to fully rough flow: Validation of the $v^2$ -f-k- $\omega$ model <i>*Ata Sojoudi, Donald J Bergstrom</i>	A novel wall model for wall-bounded turbulent flow based on deep-neural-network discriminator <i>*Ming Liu, Zhuchen Liu, Chisachi Kato, Yosuke Hasegawa</i>	Unsteady characteristics of turbulent flow separation induced by a fence with a splitter plate in uniform flow <i>*Jinhao Kang, Xingjun Fang, Mark F. Tachie</i>	Enhanced turbulent heat transfer by Kelvin-Helmholtz rollers over longitudinal rib roughness <i>*Yusuke Kuwata</i>
15:45–16:05	Tailored numerical grid approach in scale-resolving turbulence models <i>*Fettah Aldudak, Holger Foysi</i>	AI modeling of wall heat flux in turbulent flame wall interaction under pressure-rising combustion conditions <i>*Yuto Noguchi, Ye Wang, Mamoru Tanahashi</i>	Numerical investigation of quad-cyclorotor UAV at hover using large-eddy simulation <i>*Manabu Saito, Ryoichi Kurose</i>	Shape parameter effect on turbulence and passive scalar transport characteristics in deployable pipe flows <i>*Zen Fukuda, Yoshitsugu Naka, Sachiko Ishida</i>
16:05–16:25	Machine learning for separated turbulent flow simulations: Classical versus dynamic methods <i>*Stefan Heinz</i>	Refractive index determination of dynamic droplets in a flow by analyzing light scattering signals with a machine learning approach <i>*Walter Schäfer</i>	Study on the influence of MHD interaction on turbulent Taylor-Couette flow with end walls <i>*Hiromichi Kobayashi, Takahiro Hasebe, Katsumi Namba, Takayasu Fujino, Hidemasa Takana</i>	Numerical simulations of aerodynamic characteristics of an elliptical wing in uniform flow far from or near to moving ground <i>*Heizo Asai, Izdihar Hilal Amur Al Hajri, Katsuya Hirata</i>
16:25–16:45	Turbulence models assessment in a supersonic separator <i>Ramyro Macedo, Rodrigo dos Anjos, *Tania Klein</i>	Numerical analysis and AI prediction of heat removal using PCM attached to PV panel <i>Saleem Raza, *Ik-Tae Im, Hamada M Abdelmotalib</i>	Stability analysis of hypersonic streamwise corner boundary layer <i>*Xin Liang, Dongxiao Xu, Youcheng Xi, Song Fu</i>	Integral method of friction decomposition for turbulent flow over rough walls <i>*Wen Zhang, Xiang Yang, Peng Chen, Minping Wan</i>

16:45-17:05	Coffee break
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	Room A RANS (2)	Room B COMBUSTION AND REACTING FLOWS	Room C UNSTEADY FLOWS AND BODY FORCE EFFECTS (2)	Room D FLOW AND HEAT TRANSFER CONTROL (3)
17:05–17:25	Improved k- $\omega$ - $\gamma$ -A, transition model considering effect of surface roughness and cross flow transition <i>*Heng Zhang, ZhiXiang Xiao</i>	Effect of near-wall flame quenching on the wall heat flux in a reacting turbulent channel flow <i>*Ye Wang, Mamoru Tanahashi</i>	Instantaneous and long-term averaged flow and active scalars features in turbulent double-diffusive convection <i>*Sasa Kenjeres, Rona Roovers</i>	Turbulent heat and momentum transfer in pipe flow with deep axial grooves <i>*Shingo Motoki, Sena Hattori, Hinata Kurihara, Genta Kawahara</i>
17:25–17:45	Assessment of an advanced near-wall treatment for URANS computations of natural circulation loops <i>*Constantinos Katsamis, Dean Wilson, Timothy Craft, Hector Iacovides</i>	Numerical investigation of Rich-MILD-Quench-LeanAmmonia combustion in a dual-stage burner with cyclonic and quad JICF configuration <i>*Donato Cecere, Matteo Cimini, Giovanni Battista Ariemma, Eugenio Giacomazzi</i>	Application of CFD analysis for the detection of buffeting <i>*Daniel Palma, Lorenzo Pirillo, Giacomo Della Posta, Matteo Bernardini, Manuela Moretta, Fulvio Stella</i>	Effect of cross-sectional shape of 3-dimensional riblets upon drag reduction in turbulent channel flow <i>*Taiki Watanabe, Tomohiro Nimura, Akira Murata, Kaoru Iwamoto</i>
17:45–18:05	Analytical wall function for improved prediction of industrial heat transfer <i>*Dean R Wilson, Constantinos Katsamis, Tim Craft, Hector Iacovides, Ehimen Iyamabo</i>	Predictive modelling of ammonia combustion systems: Coupled LES-CMC and ISRN approach <i>*B Harikrishnan, Epaminondas Mastorakos</i>	Modeling of switching polygons in a bucket with a rotating bottom <i>Shay David Amar, Alex Rashkovan, *Gennady Ziskind</i>	Dimpling, turbulent eddy production, and improvement of aerodynamic performance <i>*Peter Vorobieff, Sal Rodriguez, Ahmed Mohamed</i>
18:05–18:25	Numerical simulation on single-stage transonic axial compressor <i>*Xinzui Wang, Cheng Tian, Song Fu</i>	Large eddy simulation of the HyShot II combustor <i>*Marco Fratini, Giacomo Della Posta, Matteo Bernardini</i>	Transient and steady-state performance of 0.25mm-thick novel ultra-thin vapor chambers for mobile device <i>*Tsang-Chi Hsiao</i>	Experimental studies of infrasonically induced heat transfer in a resonant cavity <i>*Lei Wang, Emrik Strandh</i>



(Day 3) Wednesday, July 23, 2025

8:30-9:15

**Room A: Plenary Lecture 3**  
Prediction of turbulent flows: recent advances in low-order modeling of compressible and rough wall flows, *Beverley J. McKeon*

9:15-10:00

**Room A: Plenary Lecture 4**  
Heat and mass transfer measurement using thin film sensors, *Osamu Nakabeppu*

10:00-10:20

Coffee break

	Room A DNS FOR TURBULENT HEAT TRANSFER	Room B TWO-/MULTI-PHASE FLOWS (3)	Room C ENVIRONMENTAL AND GEOPHYSICAL FLOWS (2)	Room D HEAT EXCHANGERS AND HEAT PUMPS
10:20–10:40	Direct numerical simulation of turbulent heat convection in elliptical pipes of varying aspect ratios <i>*Taylor C. Opperman, Bing-Chen Wang</i>	Scaling formation induced by an orifice under turbulent flow regime <i>*Atila PS Freire, Paulo HS Silva, Cristian MP Rosero, Juliana BR Loureiro</i>	Simulation and theoretical study of turbulence-wave interaction in Langmuir circulation <i>Anqing Xuan, *Lian Shen</i>	Thermal performance of additively manufactured heat exchangers based on cellular structures <i>*Yueliang Zhang, Xiyuan Su, Yu Rao, Xintong Wang, Kirttayoth Yeranee</i>
10:40–11:00	DNS study of turbulent heat transfer through a concentric annular square duct <i>*Taylor C. Opperman, Mark S. Tachie, Bing-Chen Wang</i>	The effects of compliant walls on turbulent heat transfer <i>*Morie Koseki, Marco Edoardo Rosti</i>	Experimental study of turbulent flow above a fence with a splitter plate in uniform flow at $Re = 2700$ <i>*Jinhao Kang, Xingjun Fang, Mark F. Tachie</i>	Exploring dissimilarities in momentum and heat transfer over homogenous rough surfaces <i>*Simon Dalpke, Jiazheng Yang, Bettina Frohnappel, Alexander Stroh</i>
11:00–11:20	DNS study of turbulent heat transfer in a square duct with longitudinal ribs <i>Mark Sedem Tachie, *Taylor Cole Opperman, Bing-Chen Wang</i>	Influence of the properties of the elasticity modulus on the hydrodynamic characteristics of the flow in the nasopharynx <i>*Alibek Issakhov, Aidana Sabyrkulova, Aizhan Abylkassymova</i>	On nuclear dynamics in string-based thundercloud plasmas <i>*Geert Cornelis Dijkhuis</i>	Numerical study on the flow and heat transfer mechanisms of oblong dimpled plate heat exchangers <i>*Jiajun Xie, Yu Rao, Yueliang Zhang</i>
11:20–11:40	Improved heat transfer performance of multiple impinging jets with individually controlled intermittent jets based on DNS <i>*Ippei Shibata, Koichi Tsujimoto, Toshitake Ando, Mamoru Takahashi</i>	Numerical study of two-phase flow in an aeroengine bearing chamber using a coupled discrete phase and Eulerian wall film model <i>Eric Boudreau, Baafour Nyantekyi-Kwakye, *Dominic Groulx, Laslo Diosady, Ivan Sidorovich Paradiso</i>	Numerical study of wake turbulence behind fractal-trees <i>*Yuwei Yin, Ryo Onishi, Seiya Watanabe, Igor Igorevich Segrovets, Kouji Nagata^5, Takayuki Aoki</i>	Effect of oblique angle and wave amplitude on heat transfer performance of v-shaped pulsed fin heat exchanger <i>*Tianyang Fang, Kenichi Morimoto, Yuta Tsujimoto, Nobuki Daimon, Yuki Shiraiwa, Yuji Suzuki</i>
11:40–12:00	Effects of conjugate heat transfer on the thermal properties of turbulent flow over rough walls <i>*Alexander Stroh, Francesco Secchi, Himani Garg</i>	(Poster Presentation) Experimental study and development of a prediction model for cross-sectional void fraction of water-steam two-phase flow in vertical helical tubes <i>*Xiaoyi Wu, Fucheng Chang, Jiacheng Lou, Qisong Yang, Xi Li, Zhibin Li, Huixiong Li</i>	A novel VAWT design for urban wind utilization <i>*Sixiong Ge, Yan Yan, Chengsheng Jiang, Jie Xu, Jiahuan Cui</i>	Development of a loop heat pipe for top heat mode <i>*Atsushi Tsujimori, Shinnosuke Hashimoto, Yui Sato, Ryosei Sasagawa</i>

12:00-13:20

Lunch

	Room A NUMERICAL SIMULATION OF MULTIPHASE FLOWS (1)	Room B TWO-/MULTI-PHASE FLOWS (4)	Room C GENERAL HEAT AND MASS TRANSFER	Room D COMPRESSIBLE AND HIGH-SPEED FLOWS (1)
13:20–13:40	DNS of turbulent flow of liquid hydrogen with wall boiling <i>*Tatsuya Yonemura, Takashi Ohta</i>	Combined influence of surface orientation and roughness on pool boiling heat transfer performance <i>*Gyanesh Kumar, Umesh Madanan</i>	Molecular dynamics study on the effects of cuboid nanostructure on the distribution of local thermal resistance at a solid-liquid interface <i>*Masahiko Shibahara, Takuto Omori, Kunio Fujiwara</i>	Numerical simulations on aerodynamic heating and flow characteristics of hypersonic Apollo-shaped capsule induced by boundary layer trip <i>*Kento Inokuma, Aiko Yakeno, Flavien Colusso, Shuto Yatsuyanagi, Hideyuki Tanno</i>
13:40–14:00	The effect of turbulence on interfacial heat and mass transfer in condensing bubbly flow <i>*Yixiang Liao</i>	Heat transfer coefficient of two-phase flow boiling of R455A in mini-channel <i>*Hoang Ngoc Hieu, Jong Taek Oh, Jong Kyu Kim</i>	Pushing the boundaries of dropwise condensation via spontaneous shedding of microdroplets <i>*Xiao Yan, Rong Chen, Qian Fu, Xun Zhu, Qiang Liao</i>	Effect of fuel injections at different locations along the length of the combustor <i>*Prathamesh Rajesh Chine, Yogeshkumar Velari, P.A. Ramakrishna</i>
14:00–14:20	Multi-physics simulation of ice crystal icing considering ice erosion phenomenon <i>Wakana Tatsuta, Koji Fukudome, Soichirou Fujimura, *Makoto Yamamoto</i>	Measurements of temperature and boiling heat transfer of R1336mzz(E) in a horizontal circular tube <i>Shunsuke Yamada, *Shunsuke Yamada, Yuki Funami, Hajime Nakamura</i>	Experimental investigation on heat transfer and pressure drops across a lattice structure <i>*Leonardo Bernardini, Alekos Ioannis Garivalis, Bruno Marangolo, Mauro Mameli, Sauro Filippeschi, Paolo Di Marco</i>	Hybrid RANS/LES simulations on the turbulence and loss mechanism of different trailing edges for highly-loaded turbine cascade <i>*Weihang Ding, Xinrong Su, Xin Yuan</i>
14:20–14:40	Pressure-equilibrium semi-implicit algorithm for multi-component real fluid flows <i>*Ibuki Tsutsumi, Sho Wada, Abhishek Lakshman Pillai, Ryoichi Kurose</i>	SDMS-PLIF thermographic measurements of nucleate flow boiling in a vertical square minichannel <i>Zengchao Chen, Aleksei S. Lobasov, Surya Narayan, Konstantin S. Pervunin, *Christos N. Markides</i>	Hybrid CHT-LES/RANS investigation of the tangential effusion cooling for a combustor liner <i>*Xuanwu Chen, Qinghua Zeng, Bing Wang, Pengfu Xie</i>	Numerical studies of flow dynamics and control for partially ionized plasma <i>*Zhigang Pu, Kun Xu</i>
14:40–15:00	Production and transport of turbulent energy in magnetised jet flows. <i>*Nick Williams, Alessandro De Rosis, Alex Skillen</i>	Numerical study on the effect of water outlet pressure on the performance of a horizontal gravity separator for three-phase mixtures <i>*Hong-Cheol Shin, Hee-La Jang, Inju Hwang, Hyeonseok Seo</i>	Thermal analysis of the surface/subsurface coupled evaporation for an energetic system <i>*Thomas Doury, Pierre Horgue, Romain Guibert, Jean Raymond, Gerald Debenest</i>	Accelerated discontinuous Galerkin solver for two-dimensional Navier-Stokes equations based on the $p$ -multigrid method <i>*Zhehao Sheng, Yan Yan, Jiahuan Cui</i>

15:00-15:20

Coffee break

	Room A TURBULENCE IN COMPLEX STRUCTURE	Room B TWO-/MULTI-PHASE FLOWS (5)	Room C SCALAR TRANSPORT IN CONVECTION (1)	Room D NUMERICAL HEAT TRANSFER IN INDUSTRIAL APPLICATIONS (1)
15:20–15:40	Investigation of counter-gradient transport structures in stably stratified homogeneous shear turbulence <i>*Zhiming Lu, De Li</i>	Phase change and heat transfer at the mesoscale <i>Mirko Gallo, Leonardo Caciolla, Matteo Teodori, *Carlo Massimo Casciola</i>	On the temperature and pressure footprints in high-Reynolds-number turbulent boundary layers <i>*Mayu Kamada, Sayoko Mayama, Makoto Iwasaki, Kentaro Kato, Yoshitsugu Naka, Ayumu Inasawa, Masaharu Matsubara, Shumpei Hara</i>	On the CFD modelling of natural convection in RVACS: analysis of DNS and RANS simulations <i>*Jundi He, Shuisheng He, Graham Macpherson, Dillon Shaver, Elia Merzari, Wei Wang, Bo Liu, Greg Cartland-Glover, Ollie Lim, Tim Houghton, Constantinos Katsamis, Chris Sigournay, Ioannis Kyritsopoulos</i>
15:40–16:00	Experimental investigation of porous media turbulence <i>*Arnaud Mure d'Alexis, Rémi Roncen, Ludovic Ambrosiani, David Donjat, Olivier Léon, Fabien Mery</i>	Dynamic tuning of phase change composites via the electric field to control the heating wall temperature <i>Boyu Li, Zirui Xu, *Jian Wu</i>	Spectral dissimilarity between momentum and heat transfers in a plane Couette turbulence <i>*Kengo Suetsugu, Takahiro Tsukahara, Takuya Kawata</i>	Investigating the Reynolds analogy for triply periodic minimal surfaces in low-Reynolds flow regime <i>Laura Savoldi, Antonio Cammi, Eleonora Gajetti, *Luca Marocco</i>
16:00–16:20	Flow patterns and heat transfer in a channel with a plasma actuator in burst mode by CFD <i>*Akihiko Mitsuishi, Hiroyuki Nishida, Kaoru Iwamoto</i>	Pressure drop of two-phase flow boiling of R455A in mini-channel <i>*Hoang Ngoc Hieu, Jong Taek Oh, Jong Kyu Kim</i>	Spectral analysis on turbulent diffusion of passive scalar in a turbulent channel flow <i>*Yusuke Ueki, Hiroya Mamori, Takuya Kawata</i>	Effects of nozzle geometry on turbulent characteristics of 3D offset synthetic jets <i>*Akili Elizabeth Cyrus, Keziah Naa Densua Hammond, Ebenezer Ekow Essel</i>
16:20–16:40	Transitional RANS and HRLM simulations for DU-91-W2-250 at high Reynolds number <i>*Haitian Lin, Siya Jiang, Song Fu</i>	Modeling fuel effects on high-pressure transcritical mixing of Sustainable Aviation Fuels <i>*Marco Maria Molinari, Davide Cavalieri, Leandro Lucchese, Jacopo Liberatori, Matteo Blandino, Pietro Paolo Ciottoli</i>	Heat transfer and flow modulation of turbulent plane Poiseuille flow by thermal stratification at low Reynolds number <i>*Koji Fukudome, Takahiro Tsukahara, Hiroya Mamori, Makoto Yamamoto</i>	Numerical simulation study of transient, unstable flow in a complex natural circulation loop system <i>*Yiwa Geng</i>

17:30-23:00

bus transfer ~ Banquet

(Day 4) Thursday, July 24, 2025

8:30-9:15

**Room A: Plenary Lecture 5**  
3D Lagrangian aspects of bubbly flows: measurement, turbulence and collective behavior, *Dirk Lucas*

9:15-10:00

**Room A: Plenary Lecture 6**  
Modeling and design optimization of a supersonic turbomachinery-integrated solar reactor for hydrogen production, *Nesrin Özalp*

10:00-10:20

Coffee break

	Room A COMBINED LES/RANS	Room B COMPRESSIBLE AND HIGH-SPEED FLOWS (2)	Room C SCALAR TRANSPORT IN CONVECTION (2)	Room D NUMERICAL HEAT TRANSFER IN INDUSTRIAL APPLICATIONS (2)
10:20–10:40	A complete formulation of the resolution parameters for the PANS model: from RANS to DNS <i>*Branislav Basara, Zoran Pavlovic, Sharath Girimaji</i>	Controlled dissipative small-scale motions in turbulent separation cells <i>Curtis J Peterson, *Bojan Vukasinovic, Ari Glezer</i>	Data-driven modeling of turbulent heat transfer over three-dimensional irregular rough surfaces <i>*Kuga Terada, Yuki Adachi, Na Donggeon, Yusuke Kuwata, Kazuhiko Suga</i>	Numerical research on flow structures and heat transfer in pulsed jet impingement with crossflow <i>*Yihui Xiong, Yu Rao</i>
10:40–11:00	Physically consistent Reynolds-averaged Navier–Stokes equations with large eddy simulation capability <i>*Stefan Heinz, Adeyemi Fagbade</i>	High-fidelity numerical simulation of conjugate heat transfer in shock wave/boundary layer interactions <i>*Giacomo Della Posta, Matteo Bernardini</i>	Experimental investigation of turbulent heat transfer over roughness elements <i>*Shilpa Vijay, Beverley McKeon</i>	Numerical investigations on the leakage flow and heat transfer characteristics of brush seal with the deflector plate <i>Hailong Qiu, Pengfei Song, Jie Qu, Bo Bai, Zhigang Li, *Jun Li</i>
11:00–11:20	Hybrid RANS-LES simulation of aerosol dispersion and evaporation with diffusion-inertia model <i>*Johann Miranda-Fuentes, Christophe Friess, Jérôme Jacob</i>	Analysis of normal shock wave instability in transonic moist air flow within convergent-divergent nozzles using experimental and numerical approach <i>*Slawomir Dykas, Mirosław Majkut, Krystian Smółka</i>	Experimental measurement of the horizontal and vertical Nusselt numbers in turbulent thermal convection using quantitative shadowgraphy <i>*Lu Zhang, Jing Dong, Ke-Qing Xia</i>	Pre-stall prediction of a transonic engine compressor based on URANS and hybrid RANS/LES methodology <i>*Julian Alexander Scheibel, Marcel Stößel, Dragan Kozulovic</i>
11:20–11:40	Evaluation of hybrid RANS/LES switching functions for natural convection: a study of turbulent transition <i>*Ioannis Kyritsopoulos, Alistair Revell, Sofiane Benhamadouche, Vladimir Duffal</i>	Numerical study of cooling microjets in hypersonic shock wave turbulent boundary layer interaction <i>Zhenyuan Tang, Xueying Li, *Jing Ren</i>	High-fidelity simulation of developing mixed convection in a buoyancy-aided vertical pipe flow <i>Rodrigo Vicente Cruz, *Cédric Flageul, Eric Lamballais, Juan C. Uribe, Vladimir Duffal, Erwan Le Coupanec, Sofiane Benhamadouche</i>	Large eddy simulation and analysis of inclined film cooling jet flow at the turbine blade leading edge <i>*Yifan Yang, Kexin Hu, Xinrong Su, Xin Yuan</i>
11:40–12:00	A modelling strategy for log-layer mismatch in channel flows <i>*Puneeth Bikkannahally, Remi Manceau</i>	Numerical investigation of supersonic base flow using high-order finite differencing method <i>*Wenchang Wu, Xingsi Han</i>	Investigations on the scale-up of mixed mode forced convection solar dryer <i>Bhanudas B. Takale, Mahesh Dasar, *Ranjit S. Patil</i>	Numerical modeling of a high-temperature thermochemical heat storage reactor <i>*Tianchao Xie, Jaimy Gebbeken, Zhen Cao, Iliana Doliou, Kyriakos Fotiadis, Martin Roeb, Christos Agrafiotis, George Karagiannakis, Nickolas Vlachos, Abhishek Singh</i>
12:00–12:20	Adaptive turbulence simulation method for integrating outer and inner aerothermal flows and heat transfer through turbine blades <i>*Tianyi Wang, Yimin Xuan</i>		Influence of wall vorticity layer on wall-temperature distribution in turbulent boundary layers <i>*Shumpei Hara</i>	Numerical analysis of the application of high-concentration alternative solutions in the PRO process <i>*Piotr Łapka, Juliusz Wachnicki</i>

12:20-13:40

Lunch

	Room A LES	Room B TWO-/MULTI-PHASE FLOWS (6)	Room C APPLICATIONS IN ENERGY, PROCESS, AND ENVIRONMENT (1)	Room D NUMERICAL HEAT TRANSFER IN INDUSTRIAL APPLICATIONS (3)
13:40–14:00	On the role of energy spectra in high-wavenumber region for the mean-velocity prediction in large eddy simulation <i>*Ken-ichi Abe</i>	Experimental study on enhancement of heat transfer by spray cooling of leaf vein surface with surfactant <i>*Rui Zhou, Hua Chen, Wen-long Cheng</i>	Internal waste heat recovery in port-fuel hydrogen split cycle engine with liquid nitrogen compression <i>*Angad Panesar, Elisa Wylie, Robert Morgan</i>	Numerical analysis on UTVc/plate-fin heatsink modules with an axial fan <i>*Ting-Yun Kuo, Shwin-Chung Wong, Chi-Chao Hsu, Chung-Yen Lu</i>
14:00–14:20	Scale-resolving computational study of flow dynamics in fuel cells: insights into laminarization phenomena and turbulence anisotropy <i>*Louis Krüger, Jeanette Hussong, Suad Jakirlic</i>	A novel loop heat pipe evaporator for multi-side cooling of a heat source <i>*Nguyen Phan, Tuan Anh Nguyen, Huy Duc Bui, Bach Xuan Nguyen, Hosei Nagano</i>	Enhancing thermal and physical properties of composite phase change materials using biochar <i>*Kaihan Xie, Wenke Zhao, Yaning Zhang, Bingxi Li</i>	Twilight zone quasidiffuse radiative transfer 3D modeling <i>Vladimir Pavlovich Budak, Pavel Aleksandrovich Smirnov, *Sergey Anatolievich Dolgushin</i>
14:20–14:40	Plasma-based active flow control for heave-pitch motions of a NACA 0012 airfoil <i>Dereje Arijamo Dolla, *Chin-Cheng Wang</i>	Study of the header configurations on the flow and stress distribution of SCO2 in parallel channels <i>Shuo Yang, Hongyan Fan, *Jian Wu</i>	Entropy generation due to air distribution in rooms <i>*Zhenhua Xia, Mats Sandberg, Yuguo Li</i>	Impact of operating Parameters on the permeate flux of hollow fiber membrane distillation systems <i>Ahmed Gweda, *Mohammed A Antar</i>
14:40–15:00	High-fidelity simulation of developing mixed convection in a vertical tube bundle configuration <i>*Rodrigo Vicente Cruz, Cédric Flageul, Eric Lamballais, Juan C. Uribe Torres, Vladimir Duffal, Erwan Le Coupanec, Sofiane Benhamadouche</i>	Experimental investigation on the heat transfer of supercritical carbon dioxide in a horizontal heating tube <i>Yu-Cheng Pan, Lei Wang, *Jin-Der Lee, Shao-Wen Chen</i>	Performance evaluation of small wind turbines under large turbine wake effects in a wind farm <i>*Yanting Lin, Yun-Jane Chung, Shan-Yuan Wang, Huei Chu Weng</i>	Heat transfer analysis of a bayonet tube under normal and concentrated heat flux conditions <i>Abhishek Raj, Amit Raj, Mrityunjay Sinha, *Ram Sharma</i>
15:00–15:20	Numerical study on the interaction of multiple subsequent jets in a subsonic cross-flow <i>*Leandro Lucchese, Edoardo Flavio Laurora, Davide Cavaliere, Jacopo Liberatori, Riccardo Malpica Galassi, Giuliano De Stefano, Pietro Ciottoli</i>	Investigation of the semi-mechanistic wall boiling model developed in ANSYS FLUENT <i>Dylan Logan, *Dominic Groulx, Mohammad Saeedi, Ivan Sidorovich Paradiso, David Koo</i>	Investigation of the heat transfer coefficient correlations of a structured monolith as solar receiver with computational and lab data <i>Aysha Melhim, *Konstantinos E Kakosimos, Athanasios G Konstandopoulos</i>	Design and validation of a micro-wind tunnel for in-situ frost formation imaging <i>*Austin Labuschagne, Tingting Zhu, Wilko Rohlfz</i>



(Day 5) Friday, July 25, 2025

	Room A DNS FOR TURBULENT FLOWS (3)	Room B BIOLOGICAL AND BIOMEDICAL FLOWS	Room C SCALAR TRANSPORT IN CONVECTION (3)	Room D NUMERICAL HEAT TRANSFER IN INDUSTRIAL APPLICATIONS (4)
8:30–8:50	High-order compact gas-kinetic scheme for turbulence simulation <i>*Fengxiang Zhao, Yaqing Yang, Kun Xu</i>	Impact of environmental temperature on aerosol dispersion dynamics during violent expiratory events <i>*Nicolás Catalán, Salvatore Cito, Sylvana Varela, Alexandre Fabregat, Anton Vernet, Jordi Pallarès</i>	Convective heat transfer of immersed heat exchanger storage tank with microencapsulated phase change slurry <i>*Alekos Ioannis Garivalis, Yuri Scardigli, Dario Groppi, Daniele Testi, Carlo Bartoli</i>	Study on the formation mechanism of pore ice in frozen soil based on LBM <i>*Zongwei Gan, Wenke Zhao, Yaning Zhang, Bingxi Li</i>
8:50–9:10	Advances in the description of a spatially developing incompressible turbulent mixing layer and its self-similarity <i>*Svetlana Poroseva</i>	Enhanced oxygen delivery during pulsatile bi-level ventilation <i>*Seyedmohsen Baghaei Oskouei, Seyyed Hossein Monsefi, Alexander Aloy, Michael Kurz, Robert Kölbl, Margit Gföhler, Michael Harasek</i>	Deposition and convective evaporation of polycaprolactone solution droplet after impacting a smooth surface <i>Alexandra Piskunova, Vladlena Chobotova, Alexander Ashikhmin, *Maxim Piskunov</i>	Numerical investigation of heat source function within a spherical particle under light irradiation <i>*Shen-Ju Sung, Wen-Ken Li</i>
9:10–9:30	Active flow control on a plunging/pitching airfoil using AC-DBD plasma actuators <i>*AbdulGafoor CP, Aniruth Arun, Nagabhushana Rao Vadlamani</i>	Numerical investigation of dynamics of nanoscale DNA-liposome complex under shear flow <i>Lei Kang, *Guohui Hu</i>	Experimental investigation on scalar mixing of cross flow over P/D = 1.58 tube bundle using LIF <i>*Yunhao Luo, Xiaoyang Xie, Yifan Zhou, Houjian Zhao, Xiaowei Li, Xinxin Wu</i>	Effects of offset height ratio on flow characteristics of a synthetic jet attaching on a wall <i>*Keziah Naa Densua Hammond, Naveed Naeem, Akili Elizabeth Cyrus, Ebenezer Ekow Essel</i>
9:30–9:50	Universality of velocity statistics in high-Reynolds number wall-bounded flows <i>*Yoshiyuki Tsuji, Yoshinobu Yamamoto, Mre Ono, Noriyuki Furuichi</i>		Experimental study on the flow and heat transfer characteristics of a parallel natural circulation boiling heat transfer system with a small horizontal inclination angle <i>Zehui Li, *Pengfei Ma, Haifeng Wang, Hui Liu, Tong Lin</i>	Reynolds number effects on the unsteady wake dynamics of a notchback Ahmed body <i>*Joseph Kwabena Kodie-Ampaw, Hung Thuc Gia Banh, Ana Sofia Garcia Hernandez, Ebenezer Ekow Essel</i>
9:50–10:10			Effects of settling, thermal inertial particles and bubbles on the hydrodynamic stability of the Rayleigh-Bénard system <i>*Silvia C Hirata, Enrico Calzavarini, Saad Raza</i>	Comparative assessment of data-free and data-driven eigenspace perturbations for uncertainty quantification in CFD <i>*Shivam Saini, Amit Sachdeva, Nagabhushana Rao Vadlamani, Vinod Kumar</i>
10:10-10:30	Coffee break			
	Room A NUMERICAL SIMULATION OF MULTIPHASE FLOWS (2)	Room B APPLICATIONS IN ENERGY, PROCESS, AND ENVIRONMENT (2)	Room C LATTICE BOLTZMANN METHOD	Room D NUMERICAL HEAT TRANSFER IN INDUSTRIAL APPLICATIONS (5)
10:30–10:50	A hybrid CFD/CAA solver for simulating real fluid flows and their noise generation under transcritical and supercritical conditions <i>*Abhishek Lakshman Pillai, Takuto Yamada, Yuya Kawase, Sho Wada, Ryoichi Kurose</i>	Effect of density ratio on the film cooling effectiveness across effusion cooled surfaces with various blockage ratios <i>*Omar Deyab Aly, Lesley M Wright, Ibrahim Galal Hassan</i>	A selective frequency damping method for lattice-Boltzmann solvers <i>Jerome JACOB, Samuel CARRE, *Christophe FRIESS</i>	Optimising conjugate transfer in porous structures: The role of flow instabilities and structural defects <i>*Jaimy Gebbeken, Nickolas Vlachos, Wilko Rohlfß, Abhishek Kumar Singh</i>
10:50–11:10	Numerical simulation of spray cooling on heated wall at different temperatures with swirling nozzle <i>*Bingrui Li, Jiayu Liu, Xin Wang, Bingxi Li, Wei Wang</i>	Study on loop heat pipe for traction inverter cooling in electric vehicles <i>*Makoto Kamata, Yuta Shimada, Noriyuki Watanabe, Shinobu Aso, Kazuki Sadakata, Shigeyuki Tanabe, Hosei Nagano</i>	Simulations of turbulent Poiseuille duct flow with lattice Boltzmann method on non-uniform mesh <i>Y.-H. Chiu, B.-X. Jin, S.-W. Feng, *Chao-An Lin</i>	Numerical modeling of a Vuilleumier heat pump and validation using CFD reference data <i>*Israa Barakat, Eric Albin, Shihe Xin</i>
11:10–11:30	Numerical simulation study of single bubble flow boiling in microgravity <i>*Xin Wang, Aoqian Deng, Bingrui Li, Bingxi Li, Wei Wang</i>	Direct simulation of multi-scale flow through porous structures in circular pipe and its application to reactor flow investigation <i>*Shun Tamura, Mitsuho Nakakura, Yusaku Matsudaira, Koji Matsubara</i>	Lattice Boltzmann simulation of pollutant dispersion using Eulerian aerosols models <i>*Jerome Jacob</i>	Turbulence simulation based on gas-kinetic scheme for internal and external flow <i>*Yue Zhang, Kun Xu</i>
11:30–11:50	Effects of mass transfer coefficients on evaporation in a thermosyphon charged with HFE-7100 <i>*Chanyong Lee, Kwon-Yeong Lee</i>	Flow field optimization for HTPEM fuel cells: a comparative study of serpentine-parallel and wavy flow channels <i>*Emanuele D'Alessio, Mahmoud Mohamed Mohamed Abdelkader, Filippo Donato, Giuliano Agati, Domenico Borello</i>	Enhanced two-phase flow model for phase change with GPU parallel optimization approach <i>*Xiaoyu Wu, Yueming Li, Xian Wang</i>	Effects of perforated baffles on sloshing damping optimization: a CFD approach <i>*Lorenzo Pirillo, Daniel Palma, Benedetta Peroni, Francesca Rossetti, Fulvio Stella, Agostino Neri</i>
11:50–12:10	Turbulent modeling of enhanced pool boiling through sintered particle surface coating <i>*Yusuf Rahmatullah, Tsrong Yi Wen</i>	Impact of microstructural inhomogeneity on thermodynamic losses in SOFC electrodes: a large dataset study <i>*Tomasz Aleksander Prokop, Szymon Buchaniec, Janusz Szmyd, Grzegorz Brus</i>	A mass and energy conserving boundary treatment for hybrid Lattice-Boltzmann/Finite-Volume simulations <i>*Iason Tsetoglou, Denis Ricot, Song Zhao, Eric Serre, Pierre Boivin</i>	Optimization of air conditioning system of railway coach <i>*Ritu Raj, Naveen Kumar Chahel, Nobuyuki Oshima, Rahul Bale</i>
12:10–12:30	Transient critical heat flux prediction model coupling two-dimensional numerical thermal conductivity considering bubble stochastic characteristic <i>*Xinyan Xu, Shuwen Yu, Changhong Peng</i>	Numerical analysis for the design of an experimental study on gas hydrogen leakage in a hydrogen equipment room <i>*Hyeonseok Seo, Hong-Cheol Shin, Hee-La Jang, Inju Hwang</i>	Estimation of transport coefficients for water-air mixtures using the Chapman-Enskog method <i>*Makoto Sugimoto, Yosuke Kishimoto, Honatsu Sorai, Manabu Tanaka, Takayuki Watanabe, Masaya Shigeta</i>	Field inversion based RANS model for improved prediction of highly-loaded turbine blade <i>*Xiao Yan, Xinrong Su, Xin Yuan</i>
12:40-13:00	Room A: Closing			