Tentative
Last updated on July 9, 2025

(Day 1) Monday, July 21, 2025

16:30-19:30 **Registration**
Welcome Reception

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

12:15-13:35 Lunch

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

15:15-15:25 Short break

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

16:45-17:05 Coffee break

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

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

12:00-13:20 Lunch

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

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 **Zhiming Lu, De Li*	Phase change and heat transfer at the mesoscale *Mirko Gallo, Leonardo Caciolla, Matteo Teodori, *Carlo Massimo Casciola*	On the temperature and pressure footprints in high-Reynolds-number turbulent boundary layers **Mayu Kamada, Sayoko Mayama, Makoto Iwasaki, Kentaro Kato, Yoshitsugu Naka, Ayumu Inasawa, Masaharu Matsubara, Shumpei Hara*	On the CFD modelling of natural convection in RVACS: analysis of DNS and RANS simulations **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*
15:40–16:00	Experimental investigation of porous media turbulence **Arnaud Mure d'Alexis, Rémi Roncen, Ludovic Ambrosiani, David Donjat, Olivier Léon, Fabien Mery*	Dynamic tuning of phase change composites via the electric field to control the heating wall temperature *Boyu Li, Zirui Xu, *Jian Wu*	Spectral dissimilarity between momentum and heat transfers in a plane Couette turbulence **Kengo Suetsugu, Takahiro Tsukahara, Takuya Kawata*	Investigating the Reynolds analogy for triply periodic minimal surfaces in low-Reynolds flow regime *Laura Savoldi, Antonio Cammi, Eleonora Gajetti, *Luca Marocco*
16:00–16:20	Flow patterns and heat transfer in a channel with a plasma actuator in burst mode by CFD **Akihiko Mitsuishi, Hiroyuki Nishida, Kaoru Iwamoto*	Pressure drop of two-phase flow boiling of R455A in mini-channel **Hoang Ngoc Hieu, Jong Taek Oh, Jong Kyu Kim*	Spectral analysis on turbulent diffusion of passive scalar in a turbulent channel flow **Yusuke Ueki, Hiroya Mamori, Takuya Kawata*	Effects of nozzle geometry on turbulent characteristics of 3D offset synthetic jets **Akili Elizabeth Cyrus, Keziah Naa Densua Hammond, Ebenezer Ekow Essel*
16:20–16:40	Transitional RANS and HRLM simulations for DU-91-W2-250 at high Reynolds number **Haitian Lin, Siya Jiang, Song Fu*	Modeling fuel effects on high-pressure transcritical mixing of Sustainable Aviation Fuels **Marco Maria Molinari, Davide Cavalieri, Leandro Lucchese, Jacopo Liberatori, Matteo Blandino, Pietro Paolo Ciottoli*	Heat transfer and flow modulation of turbulent plane Poiseuille flow by thermal stratification at low Reynolds number **Koji Fukudome, Takahiro Tsukahara, Hiroya Mamori, Makoto Yamamoto*	Numerical simulation study of transient, unstable flow in a complex natural circulation loop system **Yiwa Geng*

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

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 **Ken-ichi Abe*	Experimental study on enhancement of heat transfer by spray cooling of leaf vein surface with surfactant **Rui Zhou, Hua Chen, Wen-long Cheng*	Internal waste heat recovery in port-fuel hydrogen split cycle engine with liquid nitrogen compression **Angad Panesar, Elisa Wylie, Robert Morgan*	Numerical analysis on UTVC/plate-fin heatsink modules with an axial fan **Ting-Yun Kuo, Shwin-Chung Wong, Chi-Chao Hsu, Chung-Yen Lu*
14:00–14:20	Scale-resolving computational study of flow dynamics in fuel cells: insights into laminarization phenomena and turbulence anisotropy **Louis Krüger, Jeanette Hussong, Suad Jakirlic*	A novel loop heat pipe evaporator for multi-side cooling of a heat source **Nguyen Phan, Tuan Anh Nguyen, Huy Duc Bui, Bach Xuan Nguyen, Hosei Nagano*	Enhancing thermal and physical properties of composite phase change materials using biochar **Kaihan Xie, Wenke Zhao, Yaning Zhang, Bingxi Li*	Twilight zone quasidiffuse radiative transfer 3D modeling *Vladimir Pavlovich Budak, Pavel Aleksandrovich Smirnov, *Sergey Anatolievich Dolgushin*
14:20–14:40	Plasma-based active flow control for heave-pitch motions of a NACA 0012 airfoil *Dereje Arijamo Dolla, *Chin-Cheng Wang*	Study of the header configurations on the flow and stress distribution of SCO_2 in parallel channels *Shuo Yang, Hongyan Fan, *Jian Wu*	Entropy generation due to air distribution in rooms **Zhenhua Xia, Mats Sandberg, Yuguo Li*	Impact of operating Parameters on the permeate flux of hollow fiber membrane distillation systems *Ahmed Gweda, *Mohammed A Antar*
14:40–15:00	High-fidelity simulation of developing mixed convection in a vertical tube bundle configuration **Rodrigo Vicente Cruz, Cédric Flageul, Eric Lamballais, Juan C. Uribe Torres, Vladimir Duffal, Erwan Le Coupanec, Sofiane Benhamadouche*	Experimental investigation on the heat transfer of supercritical carbon dioxide in a horizontal heating tube *Yu-Cheng Pan, Lei Wang, *Jin-Der Lee, Shao-Wen Chen*	Performance evaluation of small wind turbines under large turbine wake effects in a wind farm **Yanting Lin, Yun-Jane Chung, Shan-Yuan Wang, Huei Chu Weng*	Design and validation of a micro-wind tunnel for in-situ frost formation imaging **Austin Labuschagne, Tingting Zhu, Wilko Rohlfs*
15:00–15:20	Numerical study on the interaction of multiple subsequent jets in a subsonic cross-flow **Leandro Lucchese, Edoardo Flavio Laurora, Davide Cavalieri, Jacopo Liberatori, Riccardo Malpica Galassi, Giuliano De Stefano, Pietro Ciottoli*	Investigation of the semi-mechanistic wall boiling model developed in ANSYS FLUENT *Dylan Logan, *Dominic Groulx, Mohammad Saeedi, Ivan Sidorovich Paradiso, David Koo*	Investigation of the heat transfer coefficient correlations of a structured monolith as solar receiver with computational and lab data *Aysha Melhim, *Konstantinos E Kakosimos, Athanasios G Konstandopoulos*	Heat transfer analysis of a bayonet tube under normal and concentrated heat flux conditions *Abhishek Raj, Amit Raj, Mrityunjay Sinha, *Ram Sharma*

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