



**XXVII FLUID MECHANICS
CONFERENCE**

23-26 JUNE 2026 - ŁÓDŹ - POLAND

**CONFERENCE
PROGRAMME**

Lodz University of Technology

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Minister of Science and Higher Education
Republic of Poland



Minister Nauki
i Szkolnictwa Wyższego



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HONORARY PATRONAGE



Marcin Kulasek

Minister of Science and Higher Education
Republic of Poland



**Committee
for Mechanics**



ERCOFTAC

European Research Community On
Flow, Turbulence And Combustion



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Programme of FMC 2026

Tuesday, June 23rd, 2026

10.00	Registration Lobby		
11.00-11.30	Opening Ceremony Room 0.4		
11.30-12.15	Plenary Lecture by Prof. Ramis Örlü <i>High-resolution or high-illusion? Revisiting the role of hot-wire anemometry in wall turbulence</i> Chairperson: Prof. Krzysztof Jóźwik Room 0.4		
12.15-12.45	Semi-plenary Lecture by: (2 parallel thematic lectures)		
	Prof. Paweł Flaszynski <i>Shock wave boundary layer interactions in compressor configurations</i> Chairperson: Prof. Ramis Örlü Room 0.4	Prof. Maciej Marek <i>Fluid flow through randomly packed particles</i> Chairperson: Prof. Maria Ekiel-Jezewska Room 0.8	
12.45-14.00	Lunch Lobby		
14.00-16.00	Session 1: (3 parallel thematic sessions, with 5–6 presentations each)		
	AERO1. Compressible Flows and Shock-Induced Phenomena Chairperson: Prof. Paweł Flaszynski Room 0.4	MULT1. Disperse Multiphase Flows Chairperson: Prof. Maciej Marek Room 0.8	AI&ML. AI and Machine Learning in Fluid Mechanics Chairperson: Prof. Paul G. A. Cizmas Room 0.17
16.00-16.30	Coffee break Lobby		
16.30-17.30	Poster teasers session Chairperson: Prof. Krzysztof Sobczak Room 0.4		
17.30-18.30	Poster display Hallway		
19.00-22.00	Get-together party Zatoka Sportu		

Wednesday, June 24th, 2026

9.00-9.45	<p align="center">Plenary Lecture by Prof. Colm-cille P. Caulfield <i>In search of stratified turbulence</i> Chairperson: Prof. Szymon Malinowski Room 0.4</p>		
9.45-10.15	<p align="center">Coffee break Lobby</p>		
10.15-12.30	<p align="center">Session 2: (3 parallel thematic sessions, with 5–6 presentations each)</p>		
	<p align="center">EXP. Experimental Methods in Fluid Mechanics Chairperson: Prof. Colm-cille P. Caulfield Room 0.4</p>	<p align="center">CFD1. Numerical Methods and Analysis Chairperson: Prof. Ewa Tuliszka-Sznitko Room 0.8</p>	<p align="center">AERO2. Dynamics of External Flows Chairperson: Prof. Włodzimierz Wróblewski Room 0.17</p>
12.30-13.45	<p align="center">Lunch Lobby</p>		
13.45-14.30	<p align="center">Industry session Chairperson: Prof. Grzegorz Liśkiewicz Room 0.4</p>		
14.30-15.00	<p align="center">Semi-plenary Lecture by: (2 parallel thematic lectures)</p>		
	<p align="center">Dr Tomasz Bobiński <i>Nature-inspired cloaking technology in water waveguide systems</i> Chairperson: Prof. Tomasz Kowalewski Room 0.4</p>	<p align="center">Dr Michał Lipian <i>Surrogate modelling in the GPU era: Rethinking the role of low-fidelity aerodynamic models</i> Chairperson: Prof. Sławomir Kubacki Room 0.8</p>	
15.00-15.30	<p align="center">Coffee break Lobby</p>		
15.30-17.45	<p align="center">Session 3: (3 parallel thematic sessions, with 5-6 presentations each)</p>		
	<p align="center">MULT2. Interfacial Multiphase Flows Chairperson: Dr Tomasz Bobiński Room 0.4</p>	<p align="center">AERO3. Rotating Machinery and Propeller Aerodynamics Chairperson: Dr Michał Lipian Room 0.8</p>	<p align="center">GEN. General Fluid Dynamics Chairperson: Prof. Janusz Badur Room 0.17</p>
18.00-18.30	<p align="center">Public lecture by Prof. Szymon Malinowski <i>Fluid dynamics of Earth's climate</i> Chairpersons: Prof. Colm-cille P. Caulfield & Prof. Krzysztof Jóźwik Room 0.4</p>		

Thursday, June 25th, 2026

9.00-9.45	<p align="center">Plenary Lecture by Prof. Manuel García-Villalba <i>Computational modelling of flow and transport phenomena in the left atrium</i> Chairperson: Prof. Jacek Pozorski Room 0.4</p>		
9.45-10.15	<p align="center">Coffee break Lobby</p>		
10.15-12.45	<p align="center">Young researchers Prof. J. W. Elsner's competition (6 presentations) Chairpersons: Prof. Manuel García-Villalba & Prof. Witold Elsner Room 0.4</p>		
12.45-14.15	<p align="center">Lunch Lobby</p>		
13.45-14.15	<p align="center">Jury meeting of Young researchers Prof. J. W. Elsner's competition Room 1.05</p>		
14.15-16.15	<p align="center">Session 4: (3 parallel thematic sessions, with 4-5 presentations each)</p>		
	<p align="center">BIOL. Biological Flows Chairperson: Prof. Damian Obidowski Room 0.4</p>	<p align="center">CFD2. Simulations of Complex Unsteady Flows Chairperson: Prof. Artur Tyliczszak Room 0.8</p>	<p align="center">TURB. Turbulence and Transition Chairperson: Prof. Andrzej Bogusławski Room 0.17</p>
16.15-16.45	<p align="center">Coffee break Lobby</p>		
16.30-17.15	<p align="center">Meeting of the Fluid Mechanics Section of the Committee for Mechanics PAS Room 1.05</p>		
17.30	<p align="center">Departure for the gala dinner Gathering in the lobby and transfer to the coaches</p>		
18.00-22.00	<p align="center">Conference gala dinner Poznański Palace</p>		

Friday, June 26th, 2026

9.00-9.45	<p align="center">Plenary Lecture by Prof. Paul G. A. Cizmas <i>Reduced-order models and machine learning of unsteady flows</i> Chairperson: Prof. Jacek Szumbariski Room 0.4</p>		
9.45-10.15	<p align="center">Coffee break Lobby</p>		
10.15-12.30	<p align="center">Session 5: (3 parallel thematic sessions, with 5–6 presentations each)</p>		
	<p align="center">FMACH. Flow Machinery and Internal Flow Devices Chairperson: Prof. Paul G. A. Cizmas Room 0.4</p>	<p align="center">AERO4. Flow Control in Aerodynamic Applications Chairperson: Prof. Piotr Doerffer Room 0.8</p>	<p align="center">THERM. Thermal-Fluid Problems Chairperson: Prof. Janusz Szmyd Room 0.17</p>
12.30-13.00	<p align="center">Closing of the Conference Room 0.4</p>		
13.00-14.15	<p align="center">Lunch Lobby</p>		

Parallel thematic sessions

Session 1 - Tuesday, 14.00-16.00, June 23rd, 2026

	AERO1. Compressible Flows and Shock-Induced Phenomena	MULT1. Disperse Multiphase Flows	AI&ML. AI and Machine Learning in Fluid Mechanics
	Room 0.4 Chairperson: Prof. Paweł Flaszynski	Room 0.8 Chairperson: Prof. Maciej Marek	Room 0.17 Chairperson: Prof. Paul G. A. Cizmas
14.00	K. Skoczylas, A. Bogusławski, S. Dykas, M. Majkut, K. Smółka: Numerical and experimental studies of low-frequency unsteadiness in shock wave boundary layer interaction	L.H. Carnevale, K.L. Ng, P. Deuar, Z. Che, M. Klamka, T. Bobiński, P.E. Theodorakis: Many-Body Dissipative Particle Dynamics of Micro and Nano Scale Flows	J. Knight, H. Medina, C. Ellis, S. Ambrose, H. Fadhlila, C. Eastwick: Neural Network Inlet Condition for Simulating Boundary Layer Natural Transition
14.20	M. Piotrowicz, M. Kurowski, A. Hanfy, P. Doerffer, M. Śleszyński, P. Flaszynski: Effect of Inflow Conditions on Shock-Induced Separation on a Compressor Stator Profile	A. Ababaei, B. Rosa, M. Manna: The effect of charge magnitude on the collision efficiency between two settling cloud droplets	K. Bukowski, T. De Maria, S. Ahizi, M.A. Mendez: Data-driven modeling and state estimation of sloshing dynamics from sparse measurements: an experimental and numerical study
14.40	F.D. Tomczak: Explicit Algebraic Reynolds Stress Model Validation based on Shock Wave-Boundary Layer Interaction Experiment	M. Manna, B. Rosa, A. Ababaei: The effect of electric field on the collision efficiency between two uncharged settling cloud droplets	T. Krakowski, W. Stankiewicz: Active flow control for drag reduction – machine learning strategies comparison
15.00	S. Kubacki, K. Kurec, A. Jaworski, M. Wielgosz: Numerical study of surface thermal load on a Mars entry capsule	Ch. Shekhar, H.N. Mirajkar, P. Zdybel, Y. Melikhov, M.L. Ekiel-Jezewska: Hydrodynamic orienting of rigid particles settling under gravity in a viscous fluid at low Reynolds number	M.A. Nasr, B.Y.J. Wong, C.M.J. Tay: Deep-Learning-Based Design Optimization and Aerodynamic Performance Validation of a Natural Laminar Flow Airfoil
15.20	R. Ramadas, S. Advaith: Effect of Chevron-Induced Jet Mixing on Entrainment Characteristics of a Supersonic Ejector	Ł. Łaniewski-WoŃk, C. Leonardi: Improving of proppant screen-out modelling for rough fractures	S. Grün, B. Allweyer, D. Hübner, F. Rückert: Surveying river beds with flow simulation for optimal positioning of river turbines
15.40		M. Rajek, J. Pozorski: High-fidelity pseudo-spectral simulation of single-phase and dispersed two-phase isotropic turbulence	

Session 2 - Wednesday, 10.15-12.30, June 24th, 2026

	EXP. Experimental Methods in Fluid Mechanics	CFD1. Numerical Methods and Analysis	AERO2. Dynamics of External Flows
	Room 0.4 Chairperson: Prof. Colm-cille P. Caulfield	Room 0.8 Chairperson: Prof. Ewa Tuliszką-Sznitko	Room 0.17 Chairperson: Prof. Włodzimierz Wróblewski
10.15	J.I. Yano: Analysis of A Thermal Vortex Ring Generated in the Laboratory: Vortex Dynamics	A. Bogusławski, A. Tyliszczak, B.J. Geurts: Global stability analysis of multi-step time-integration methods applied to the Fourier-discretised linear convection-diffusion equation	T. Waćławczyk: Numerical Study of a Twin-Foil System for Diode Laser Hygrometer
10.35	J. Spała, M. Waćławczyk, J-I. Yano: Multiscale analysis of turbulent fluxes for Reynolds averaging in atmospheric flows	A. Kajzer: Revisiting the 2nd-order semi-discrete finite volume schemes for hyperbolic conservation laws on Cartesian grids	B. Potęga, E. Ciećlikowski, K. Walicki, M. Remer: Understanding of the flow complexity of motorcycle while cornering
10.55	K.K. Jani, A. Giesecke, T. Gundrum, F. Stefani: Identification of Flow States for the DRESDYN Precession Experiment Using Ultrasound Doppler Velocimetry	A. Hokpunna: Performance of Very Higher-Order Multi-Moment Method in the Nonlinear Convection-Diffusion Equations	B. Potęga, J. Lepiarz, K. Skalska, M. Remer: Aerodynamic Characteristics of a Leaning Racing Motorcycle Under Combined Slip and Lean Angles: Experimental Study
11.15	S. Biegowski, M. Paprota: Shoaling of gravity-capillary waves	J. Gaćecki, J. Szumbariski: A consistent splitting scheme for unsteady incompressible flows with exact incompressibility enforcement	M. Pisula, M. Poćwierz, J. Szumbariski: Pedestrian comfort and ventilation - Numerical analysis of airflow in a building quarter
11.35	J.M. Kopania: Impact of Orientation Angle on Vortex Shedding and Noise Generation of a Square Cylinder in Low-Velocity Airflows	J. Szumbariski, J. Gaćecki: Simulation of unsteady internal flows with novel dissipative inlet/outlet conditions	B. Allweyer, S. Grün, D. Hübner, F. Rückert: Determination of Optimal Locations of River Turbines based on Simulations
11.55	P. Gaj, I. Czajka, J.M. Kopania: Laboratory investigation of aeroacoustic phenomena occurring during high-pressure gas ejection	J. Fabisiak, S. Gepner: Algorithm for extracting Advection-Diffusion operator eigenvalue as mixing measure in double gyre flow	

Session 3 - Wednesday, 15.30-17.45, June 24th, 2026

	MULT2. Interfacial Multiphase Flows	AERO3. Rotating Machinery and Propeller Aerodynamics	GEN. General Fluid Dynamics
	Room 0.4 Chairperson: Dr Tomasz Bobiński	Room 0.8 Chairperson: Dr Michał Lipian	Room 0.17 Chairperson: Prof. Janusz Badur
15.30	M. Klamka, T. Bobiński: Shaking Things Up: Dynamic contact angle hysteresis measurement using a harmonically oscillated substrate	F. U. Rückert, D. Hübner, S. Grün, B. Allweyer, C. Sassen: Influence of Turbulence on the Flow Behavior of Propeller Blade Geometries	E. Smyk: On the use of entropy generation to quantify flow conditioning
15.50	M. Remer, T. Bobiński: Mesoscopic oscillations of triple line in capillary flows	B. Allweyer, S. Grün, D. Hübner, F. Rückert: Experimental assessment of efficiency increase on UAV propellers using microstructures	S. Sengupta: Critical assessment of buoyant flow dynamics for enhancing the performance of a solar updraft tower
16.10	I.P. Ungureanu, M. Boni, I.R. Andrei, A. Staicu: Control of Interface Oscillations in Hanging Droplets via Long-Range Interactions	O. Szulc, T. Suresh, A. Sieradzki, P. Flaszyński: High-fidelity analysis of low-noise UAV rotor designs	M. Amiri, A. Tyliczszak: NO _x emissions in NH ₃ /H ₂ co-combustion under O ₂ -enrichment and steam dilution conditions
16.30	P. Niegodajew, M. Wilczyński, A. Durajski, M. Marek: Effect of column wall corrugation on liquid transport in random packed beds of spherical particles	F. Wasilczuk, P. Flaszyński, M. Piotrowicz, K. Gnebnier, Y. Govers, B. Zima, M. Wójcik: Analysis of aerodynamic damping of a wind turbine blade oscillating in a cold chamber	Ł. Ciorga, T. Banaszekiewicz: Design of a nitrous oxide filling system for sounding rocket propellant tanks
16.50	P. Marczak, M. Jaszczur: CFD Simulations of Multiphase Flow and Radiometric Probe Response	A. Kolata, K. Zawadzki, W. Tomecki, M. Dorenda, K. Rozbicki, J. Klepacz, K. Juszcak, G. Widerska, J. Maciejewski, M. Lipian, M. Kulak, K. Olasek: Development of aerodynamic components in a small wind turbine by the GUST team	A. Banerjee: Rheological and Thermal Influences on Secondary Flow in Polygonal Duct Manifolds
17.10	N.F. Dimitrieva: Complex flows in a ventilated cavity		M.P. Rezaei, G. Kudra, K. Witkowski, J. Awrejcewicz: Pre-, Near-, and Post-Resonance Regimes of Shear-Thickening Fluids: Distinct Dynamic Responses

Session 4 - Thursday, 14.15-16.15, June 25th, 2026

	BIOL. Biological Flows	CFD2. Simulations of Complex Unsteady Flows	TURB. Turbulence and Transition
	Room 0.4 Chairperson: Prof. Damian Obidowski	Room 0.8 Chairperson: Prof. Artur Tyliczszak	Room 0.17 Chairperson: Prof. Andrzej Bogusławski
14.15	A. Bartosik, B. Jaworska-Jóźwiak, M. Sadowski, M. Pasiarski: Experiments on Human Blood Shear Stress and Viscosity at Low and Moderate Haematocrit	W. Stankiewicz, T. Krakowski: A Comparative Study of Physics-Based, Sparse, and Black-Box Reduced Order Models of Tandem Cylinder Wake Dynamics	J. Szumbariski: Flow instability in a channel with obliquely corrugated walls
14.35	H. Saini, K. Gyoten, P. Friend, T. Pruett, J. Sushil Rao, J. Tithof: Pre-Clinically Validated Lumped Parameter Liver Model to Guide Pre-Operative Resection	D. Kumar: Blockage effect on linearly unstable modes in flow past elliptic cylinders	E. Tuliszka-Sznitko: Subcritical transition to turbulence in the flow between counter-rotating cylinders
14.55	T.A. Kowalewski: Flow of DNA Chains in Molecular and Microfluidic Systems	P. J. Ziółkowski, M. Bryk, T. Ochrymiuk, J. Badur: Critical Strouhal velocity during flow over semi-fixed industrial steel chimney	S. Gepner, G. Kawahara: From square to circle: discovering steady localised travelling waves in pipe flow through geometric homotopy
15.15	S. Telyma: Some aspects of modelling the process of organic wastewaters removal in bioreactors and influence of oxygen regime on efficiency of purification	A. Alavi, K. Urbanowicz: 1D, 2D axis-symmetric and 3D numerical simulation of valve induced water hammer	R. Ayats, L. Klotz, B. Hof: From directed percolation to patterned turbulence
15.35		A. Belghith, A. Aouadi, G. Bellakhal, J. Chahed: Analysis of Turbulence Modeling in Two-phase Particle-Laden Jet Flows	J. Muller, S. Rozborski, D. Boldo: Time dependent transition on vertical heating plate

Session 5 - Friday, 10.15-12.30, June 26th, 2026

	FMACH. Flow Machinery and Internal Flow Devices	AERO4. Flow Control in Aerodynamic Applications	THERM. Thermal-Fluid Problems
	Room 0.4 Chairperson: Prof. Paul G. A. Cizmas	Room 0.8 Chairperson: Prof. Piotr Doerffer	Room 0.17 Chairperson: Prof. Janusz Szmyd
10.15	A. Olczyk, K. Sobczak, K. Kantyka, G. Liśkiewicz, B. Miller, M. Tomecka, P. Rusinow: Numerical and experimental analysis of flow uniformity in a star-type manifold	A. Drózdź, M. Romańczyk, W. Elsner: Passive control of the turbulent separation induced by the convex geometry of NACA4412	A. Kraszewska, J. Donizak: Validation of a numerical model for thermomagnetic convection of a paramagnetic fluid in strong magnetic fields
10.35	E. Lo Pinto, M. Katz, S. Clément, S. Gaillot, Y. Weiss: Evaluation of flow entrainment ratio of a jet-pump based system intended for JHR experimental devices	M. Romańczyk, A. Drózdź, W. Elsner: Experimental study of left-tilted wavy wall for turbulent separation control	M. Szydłowski, G. Górecki, A. Gutkowski: Experimental investigation of a 3D-printed heat pipe with mathematically determined operating limits
10.55	N. Rupasinghe, S. Michel, A. Baumann, S. Gülde, D. Biermann, P. Eberhard: Investigation of fluid flow in the ejector nozzle during ejector deep hole drilling using mesh-free methods	J.A. Jankiewicz: Numerical Analysis of the Effect of Gothic Vortex Generator Chordwise Location on the Aerodynamic Characteristics of the NACA 4415 Airfoil	A. Merdjani, W. Olszewski, N. Kizilova: Fractal flow-based cooling systems for single fuel cells and fuel cell stacks
11.15	K. Rusin, W. Wróblewski: Semi-analytical flow model of low-boiling medium in Tesla turbine	T. Suresh, N. Maynard, J.A. Khalil, R. El Akoury, M. Braza, O. Szulc, P. Flaszynski: Aeroacoustic investigation of travelling wave as flow control for airfoil drag reduction	S. Naqvi, N. Kizilova: Fractal biomimetic fins for optimal flow-based systems for internal/external cooling/heating
11.35	J. Dziuba, K. Smołka: Comparison of traditional methods of industrial fan calculations with modern tools	W. Stryczniewicz: Application of Helium Filled Soap Bubbles for 3D PIV investigations of large scale passive flow control devices	A. Rożek, S. Rulik: Multiphase modelling of vacuum insulated TES charging process
11.55	A.B. Şimşek, B. Erdoğan, N.B. Üner: Multiphysics Modeling and Experimental Characterization of a Commercial High-Pressure Reciprocating Compressor		I. Wardach-Święcicka: XDEM for modelling thermal conversion processes in granular media

Young researchers Prof. J. W. Elsner's competition

Thursday, 10.15-12.45, June 25th, 2026

Room 0.4

Chairpersons: Prof. Manuel García-Villalba & Prof. Witold Elsner

- 10.15 P. Kamiński, A. Tyliczszak: Mixing enhancement via shape altering of bluff body flame stabilizers
- 10.40 L. Caban, A. Wawrzak, A. Tyliczszak: From passive to active control of flame dynamics using bluff body stabilization and oxidizer flow excitation
- 11.05 C. Burns, M. Kulak, K. Sobczak: Low-Fidelity Geometric Shape Optimization of a Counter-Rotating Open Rotor
- 11.30 D. Żyła-Jabłońska, T. Bobiński: Towards perfect cloaking - combining cloaks for enhanced invisibility in water waveguide systems
- 11.55 Y. Li, B.R. Noack: Jet-mixing control landscapes revealed by Bayesian optimization
- 12.20 S. Król, M. Waclawczyk: Scaling of turbulence kinetic energy dissipation and temperature variance destruction rates in dry convection and in marine boundary layers

Poster teasers session

Tuesday, 16.30-17.30, June 23rd, 2026

Room: 0.4

Chairperson: Prof. Krzysztof Sobczak

1. M. Czarnecki, K. Wójciak, J.M. Kopania, P. Gaj: Acoustic properties of silencers with micro perforated panels of multiple perforation sizes in airflow
2. B. Okonokhua, M. Pahlavanzadeh, K. Rusin, W. Wróblewski: Porous Media Layer Model to account for roughness in the Mini-channel flows
3. D. Walisiak, J.M. Kopania, P. Gaj, K. Wójciak: Identification of Noise Sources in HVAC End Elements Using Acoustic Camera in an Anechoic Environment
4. K. Wójciak, I. Czajka, J.M. Kopania: Real-world aerodynamic and acoustic performance of multi-disk radial fans
5. M. Majkut, S. Dykas, K. Smółka, A. Bogusławski, K. Skoczylas: Influence of Humidity on Self-Excited Shock Wave Oscillations in Transonic Planar Nozzles
6. A. Kocoń, R. Gnatowska: Transitional flow regimes in tandem configurations of triangular cylinders
7. A.B. Şimşek, B. Erdoğan, N.B. Üner: Numerical and experimental study of external heat loss on the piston-barrel assembly of a high-pressure reciprocating compressor
8. K. Sinderka: Experimental and numerical study of the biomimetic catalytic carrier based on fish gills
9. P. Hercel, D. Kardaś: Simulation of thermal–fluid phenomena during single wood particle pyrolysis with shrinkage effects
10. B. Józwiak: Thermal and rheological behavior of fly ash–based deep eutectic solvent dispersions
11. J. Wiśniewski, J. Szumbariski: VAWT load-limiting optimization using height-variable blade skew
12. M. Błaszczak: Dynamics of Emulsion Droplet Transport in Cross-Capillary Microstructures
13. A. Wawrzak: Dynamics of lifted flame base influenced by global instability
14. K. Wawrzak: Influence of Diffusion Models on LES/DNS of Hydrogen Flames
15. A. Olszewska, Z. Peter: Numerical and Experimental Analysis of Drag Coefficient of a Disc-Gap-Band Parachute
16. M. Pilecki, J. Płuźniński: Active Suppression of Vortex-Induced Vibrations: Comparative Study between PID and SMC Controllers

Thematic sessions of the conference

Aerodynamics

AERO1. Compressible Flows and Shock-Induced Phenomena

This session focuses on compressible flow phenomena in high-speed aerodynamics, with particular emphasis on shock–boundary layer interactions, flow separation, unsteady effects, and their analysis using advanced numerical and experimental approaches.

Tuesday, 14.00-16.00, June 23rd, 2026, Session 1

Room 0.4

Chairperson: Prof. Paweł Flaszynski

- 14.00 K. Skoczylas, A. Bogustawski, S. Dykas, M. Majkut, K. Smoła: Numerical and experimental studies of low-frequency unsteadiness in shock wave boundary layer interaction
 - 14.20 M. Piotrowicz, M. Kurowski, A. Hanfy, P. Doerffer, M. Śleszyński, P. Flaszynski: Effect of Inflow Conditions on Shock-Induced Separation on a Compressor Stator Profile
 - 14.40 F.D. Tomczak: Explicit Algebraic Reynolds Stress Model Validation based on Shock Wave-Boundary Layer Interaction Experiment
 - 15.00 S. Kubacki, K. Kurec, A. Jaworski, M. Wielgosz: Numerical study of surface thermal load on a Mars entry capsule
 - 15.20 R. Ramadas, S. Advait: Effect of Chevron-Induced Jet Mixing on Entrainment Characteristics of a Supersonic Ejector
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AERO2. Dynamics of External Flows

This session focuses on aerodynamic and hydrodynamic behavior of complex external flows in realistic configurations, combining numerical and experimental approaches to analyze flow structures, performance, and environmental interactions across engineering applications.

Wednesday, 10.15-12.30, June 24th, 2026, Session 2

Room: 0.17

Chairperson: Prof. Włodzimierz Wróblewski

- 10.15 T. Waclawczyk: Numerical Study of a Twin-Foil System for Diode Laser Hygrometer
 - 10.35 B. Potęga, E. Cieślowski, K. Walicki, M. Remer: Understanding of the flow complexity of motorcycle while cornering
 - 10.55 B. Potęga, J. Lepiarz, K. Skalska, M. Remer: Aerodynamic Characteristics of a Leaning Racing Motorcycle Under Combined Slip and Lean Angles: Experimental Study
 - 11.15 M. Pisula, M. Poćwierz, J. Szumbariski: Pedestrian comfort and ventilation - Numerical analysis of airflow in a building quarter
 - 11.35 B. Allweyer, S. Grün, D. Hübner, F. Rückert: Determination of Optimal Locations of River Turbines based on Simulations
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AERO3. Rotating Machinery and Propeller Aerodynamics

This session focuses on aerodynamic analysis and design of rotating machinery, highlighting the influence of turbulence, blade dynamics, noise reduction, and advanced experimental and numerical methods on propeller and wind turbine performance.

Wednesday, 15.30-17.45, June 24th, 2026, Session 3

Room: 0.8

Chairperson: Dr Michał Lipian

- 15.30 F. U. Rückert, D. Hübner, S. Grün, B. Allweyer, C. Sassen: Influence of Turbulence on the Flow Behavior of Propeller Blade Geometries

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- 15.50 B. Allweyer, S. Grün, D. Hübner, F. Rückert: Experimental assessment of efficiency increase on UAV propellers using microstructures
 - 16.10 O. Szulc, T. Suresh, A. Sieradzki, P. Flaszynski: High-fidelity analysis of low-noise UAV rotor designs
 - 16.30 F. Wasilczuk, P. Flaszynski, M. Piotrowicz, K. Gnebnier, Y. Govers, B. Zima, M. Wójcik: Analysis of aerodynamic damping of a wind turbine blade oscillating in a cold chamber
 - 16.50 A. Kolata, K. Zawadzki, W. Tomecki, M. Dorenda, K. Rozbicki, J. Klepacz, K. Juszcak, G. Widerska, J. Maciejewski, M. Lipian, M. Kulak, K. Olasek: Development of aerodynamic components in a small wind turbine by the GUST team
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AERO4. Flow Control in Aerodynamic Applications

This session focuses on experimental and numerical investigations of flow control techniques in aerodynamics, highlighting separation control, drag reduction, and advanced measurement methods for complex flow structures.

Friday, 10.15-12.30, June 26th, 2026, Session 5

Room: 0.8

Chairperson: Prof. Piotr Doerffer

- 10.15 A. Drózd, M. Romańczyk, W. Elsner: Passive control of the turbulent separation induced by the convex geometry of NACA4412
 - 10.35 M. Romańczyk, A. Drózd, W. Elsner: Experimental study of left-tilted wavy wall for turbulent separation control
 - 10.55 J.A. Jankiewicz: Numerical Analysis of the Effect of Gothic Vortex Generator Chordwise Location on the Aerodynamic Characteristics of the NACA 4415 Airfoil
 - 11.15 T. Suresh, N. Maynard, J.A. Khalil, R. El Akoury, M. Braza, O. Szulc, P. Flaszynski: Aeroacoustic investigation of travelling wave as flow control for airfoil drag reduction
 - 11.35 W. Stryczniewicz: Application of Helium Filled Soap Bubbles for 3D PIV investigations of large scale passive flow control devices
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AI&ML. AI and machine learning in fluid mechanics

This session focuses on the use of artificial intelligence and machine learning techniques in fluid mechanics, highlighting data-driven modeling, flow control, and optimization across a range of aerodynamic and environmental applications.

Tuesday, 14.00-16.00, June 23rd, 2026, Session 1

Room: 0.17

Chairperson: Prof. Paul G. A. Cizmas

- 14.00 J. Knight, H. Medina, C. Ellis, S. Ambrose, H. Fadhila, C. Eastwick: Neural Network Inlet Condition for Simulating Boundary Layer Natural Transition
 - 14.20 K. Bukowski, T. De Maria, S. Ahizi, M.A. Mendez: Data-driven modeling and state estimation of sloshing dynamics from sparse measurements: an experimental and numerical study
 - 14.40 T. Krakowski, W. Stankiewicz: Active flow control for drag reduction – machine learning strategies comparison
 - 15.00 M.A. Nasr, B.Y.J. Wong, C.M.J. Tay: Deep-Learning-Based Design Optimization and Aerodynamic Performance Validation of a Natural Laminar Flow Airfoil
 - 15.20 S. Grün, B. Allweyer, D. Hübner, F. Rückert: Surveying river beds with flow simulation for optimal positioning of river turbines
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BIOL. Biological flows

This session focuses on fluid dynamics in biological and bio-inspired systems, combining experimental and computational approaches to investigate flow behavior in physiological processes, micro-scale transport, and bioreactor environments.

Thursday, 14.15-16.15, June 25th, 2026, Session 4

Room: 0.4

Chairperson: Prof. Damian Obidowski

- 14.15 A. Bartosik, B. Jaworska-Jóźwiak, M. Sadowski, M. Pasiarski: Experiments on Human Blood Shear Stress and Viscosity at Low and Moderate Haematocrit
 - 14.35 H. Saini, K. Gyoten, P. Friend, T. Pruet, J. Sushil Rao, J. Tithof: Pre-Clinically Validated Lumped Parameter Liver Model to Guide Pre-Operative Resection
 - 14.55 T.A. Kowalewski: Flow of DNA Chains in Molecular and Microfluidic Systems
 - 15.15 S. Telyma: Some aspects of modelling the process of organic wastewaters removal in bioreactors and influence of oxygen regime on efficiency of purification
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Computational fluid dynamics

CFD1. Numerical Methods and Analysis

This session focuses on advances in CFD methodology, presenting high-order and structure-preserving numerical schemes, stability and splitting analyses, and algorithmic tools for accurately simulating and quantifying complex convection–diffusion and incompressible flow phenomena.

Wednesday, 10.15-12.30, June 24th, 2026, Session 2

Room: 0.8

Chairperson: Prof. Ewa Tuliszka-Sznitko

- 10.15 A. Bogusławski, A. Tyliczszak, B.J. Geurts: Global stability analysis of multi-step time-integration methods applied to the Fourier-discretised linear convection-diffusion equation
 - 10.35 A. Kajzer: Revisiting the 2nd-order semi-discrete finite volume schemes for hyperbolic conservation laws on Cartesian grids
 - 10.55 A. Hokpunna: Performance of Very Higher-Order Multi-Moment Method in the Nonlinear Convection-Diffusion Equations
 - 11.15 J. Gałeczki, J. Szumbariski: A consistent splitting scheme for unsteady incompressible flows with exact incompressibility enforcement
 - 11.35 J. Szumbariski, J. Gałeczki: Simulation of unsteady internal flows with novel dissipative inlet/outlet conditions
 - 11.55 J. Fabisiak, S. Gepner: Algorithm for extracting Advection-Diffusion operator eigenvalue as mixing measure in double gyre flow
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CFD2. Simulations of Complex Unsteady Flows

This session focuses on computational investigations of unsteady flow dynamics, highlighting advanced numerical approaches for capturing instabilities, transient phenomena, and complex flow behavior in both internal and external configurations.

Thursday, 14.15-16.15, June 25th, 2026, Session 4

Room: 0.8

Chairperson: Prof. Artur Tyliczszak

- 14.15 W. Stankiewicz, T. Krakowski: A Comparative Study of Physics-Based, Sparse, and Black-Box Reduced Order Models of Tandem Cylinder Wake Dynamics
- 14.35 D. Kumar: Blockage effect on linearly unstable modes in flow past elliptic cylinders

- 14.55 P. J. Ziółkowski, M. Bryk, T. Ochrymiuk, J. Badur: Critical Strouhal velocity during flow over semi-fixed industrial steel chimney
- 15.15 A. Alavi, K. Urbanowicz: 1D, 2D axis-symmetric and 3D numerical simulation of valve induced water hammer
- 15.35 A. Belghith, A. Aouadi, G. Bellakhal, J. Chahed: Analysis of Turbulence Modeling in Two-phase Particle-Laden Jet Flows

EXP. Experimental methods in fluid mechanics

This session focuses on experimental investigations of unsteady and complex flows, emphasizing vortex dynamics, wave phenomena, flow state identification, and aeroacoustic effects, supported by advanced laboratory and field measurement techniques.

Wednesday, 10.15-12.30, June 24th, 2026, Session 2

Room: 0.4

Chairperson: Prof. Colm-cille P. Caulfield

- 10.15 J.I. Yano: Analysis of A Thermal Vortex Ring Generated in the Laboratory: Vortex Dynamics
- 10.35 J. Spała, M. Waclawczyk, J-I. Yano: Multiscale analysis of turbulent fluxes for Reynolds averaging in atmospheric flows
- 10.55 K.K. Jani, A. Giesecke, T. Gundrum, F. Stefani: Identification of Flow States for the DRESYDYN Precession Experiment Using Ultrasound Doppler Velocimetry
- 11.15 S. Biegowski, M. Paprota: Shoaling of gravity-capillary waves
- 11.35 J.M. Kopania: Impact of Orientation Angle on Vortex Shedding and Noise Generation of a Square Cylinder in Low-Velocity Airflows
- 11.55 P. Gaj, I. Czajka, J.M. Kopania: Laboratory investigation of aeroacoustic phenomena occurring during high-pressure gas ejection

FMACH. Flow machinery and internal flow devices

This session focuses on the analysis and design of internal flow devices and flow machinery, highlighting performance, efficiency, and flow conditioning using experimental, numerical, and analytical approaches.

Friday, 10.15-12.30, June 26th, 2026, Session 5

Room: 0.4

Chairperson: Prof. Paul G. A. Cizmas

- 10.15 A. Olczyk, K. Sobczak, K. Kantyka, G. Liśkiewicz, B. Miller, M. Tomecka, P. Rusinow: Numerical and experimental analysis of flow uniformity in a star-type manifold
- 10.35 E. Lo Pinto, M. Katz, S. Clément, S. Gaillot, Y. Weiss: Evaluation of flow entrainment ratio of a jet-pump based system intended for JHR experimental devices
- 10.55 N. Rupasinghe, S. Michel, A. Baumann, S. Gülde, D. Biermann, P. Eberhard: Investigation of fluid flow in the ejector nozzle during ejector deep hole drilling using mesh-free methods
- 11.15 K. Rusin, W. Wróblewski: Semi-analytical flow model of low-boiling medium in Tesla turbine
- 11.35 J. Dziuba, K. Smółka: Comparison of traditional methods of industrial fan calculations with modern tools
- 11.55 A.B. Şimşek, B. Erdoğan, N.B. Üner: Multiphysics Modeling and Experimental Characterization of a Commercial High-Pressure Reciprocating Compressor

GEN. General fluid dynamics

This session focuses on general fluid dynamics problems in complex systems, highlighting flow behavior, transport processes, and performance in applications involving non-Newtonian fluids, thermal effects, and energy and propulsion systems.

Wednesday, 15.30-17.45, June 24th, 2026, Session 3

Room: 0.17

Chairperson: Prof. Janusz Badur

- 15.30 E. Smyk: On the use of entropy generation to quantify flow conditioning
- 15.50 S. Sengupta: Critical assessment of buoyant flow dynamics for enhancing the performance of a solar updraft tower
- 16.10 M. Amiri, A. Tyliczszak: NO_x emissions in NH₃/H₂ co-combustion under O₂-enrichment and steam dilution conditions
- 16.30 Ł. Ciorga, T. Banaszkiwicz: Design of a nitrous oxide filling system for sounding rocket propellant tanks
- 16.50 A. Banerjee: Rheological and Thermal Influences on Secondary Flow in Polygonal Duct Manifolds
- 17.10 M.P. Rezaei, G. Kudra, K. Witkowski, J. Awrejcewicz: Pre-, Near-, and Post-Resonance Regimes of Shear-Thickening Fluids: Distinct Dynamic Responses

Multiphase flows and complex fluids

MULT1. Disperse Multiphase Flows

This session focuses on disperse multiphase flows, emphasizing particle and droplet dynamics, inter-particle interactions, and transport processes across a wide range of scales, supported by advanced numerical and modeling approaches.

Tuesday, 14.00-16.00, June 23rd, 2026, Session 1

Room: 0.8

Chairperson: Prof. Maciej Marek

- 14.00 L.H. Carnevale, K.L. Ng, P. Deuar, Z. Che, M. Klamka, T. Bobiński, P.E. Theodorakis: Many-Body Dissipative Particle Dynamics of Micro and Nano Scale Flows
- 14.20 A. Ababaei, B. Rosa, M. Manna: The effect of charge magnitude on the collision efficiency between two settling cloud droplets
- 14.40 M. Manna, B. Rosa, A. Ababaei: The effect of electric field on the collision efficiency between two uncharged settling cloud droplets
- 15.00 Ch. Shekhar, H.N. Mirajkar, P. Zdybel, Y. Melikhov, M.L. Ekiel-Jeżewska: Hydrodynamic orienting of rigid particles settling under gravity in a viscous fluid at low Reynolds number
- 15.20 Ł. Łaniewski-Woźk, C. Leonardi: Improving of proppant screen-out modelling for rough fractures
- 15.40 M. Rajek, J. Pozorski: High-fidelity pseudo-spectral simulation of single-phase and dispersed two-phase isotropic turbulence

MULT2. Interfacial Multiphase Flows

This session focuses on interfacial phenomena in multiphase flows, highlighting contact line dynamics, droplet behavior, and interface instabilities, as well as transport processes and modeling approaches in complex flow systems.

Wednesday, 15.30-17.45, June 24th, 2026, Session 3

Room: 0.4

Chairperson: Dr Tomasz Bobiński

- 15.30 M. Klamka, T. Bobiński: Shaking Things Up: Dynamic contact angle hysteresis measurement using a harmonically oscillated substrate
- 15.50 M. Remer, T. Bobiński: Mesoscopic oscillations of triple line in capillary flows
- 16.10 I.P. Ungureanu, M. Boni, I.R. Andrei, A. Staicu: Control of Interface Oscillations in Hanging Droplets via Long-Range Interactions

- 16.30 P. Niegodajew, M. Wilczyński, A. Durajski, M. Marek: Effect of column wall corrugation on liquid transport in random packed beds of spherical particles
- 16.50 P. Marczak, M. Jaszczur: CFD Simulations of Multiphase Flow and Radiometric Probe Response
- 17.10 N.F. Dimitrieva: Complex flows in a ventilated cavity
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THERM. Thermal-fluid problems

This session focuses on heat transfer and thermal-fluid processes, combining experimental and numerical studies of convection, advanced cooling concepts, and energy conversion in complex and multiphase systems.

Friday, 10.15-12.30, June 26th, 2026, Session 5

Room: 0.17

Chairperson: Prof. Janusz Szmyd

- 10.15 A. Kraszewska, J. Donizak: Validation of a numerical model for thermomagnetic convection of a paramagnetic fluid in strong magnetic fields
- 10.35 M. Szydłowski, G. Górecki, A. Gutkowski: Experimental investigation of a 3D-printed heat pipe with mathematically determined operating limits
- 10.55 A. Merdjani, W. Olszewski, N. Kizilova: Fractal flow-based cooling systems for single fuel cells and fuel cell stacks
- 11.15 S. Naqvi, N. Kizilova: Fractal biomimetic fins for optimal flow-based systems for internal/external cooling/heating
- 11.35 A. Rożek, S. Rulik: Multiphase modelling of vacuum insulated TES charging process
- 11.55 I. Wardach-Święcicka: XDEM for modelling thermal conversion processes in granular media
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TURB. Turbulence and transition

This session focuses on the mechanisms of flow instability and transition to turbulence, combining theoretical, numerical, and experimental approaches across a range of configurations.

Thursday, 14.15-16.15, June 25th, 2026, Session 4

Room: 0.17

Chairperson: Prof. Andrzej Bogusławski

- 14.15 J. Szumbariski: Flow instability in a channel with obliquely corrugated walls
- 14.35 E. Tuliszka-Sznitko: Subcritical transition to turbulence in the flow between counter-rotating cylinders
- 14.55 S. Gepner, G. Kawahara: From square to circle: discovering steady localised travelling waves in pipe flow through geometric homotopy
- 15.15 R. Ayats, L. Klotz, B. Hof: From directed percolation to patterned turbulence
- 15.35 J. Muller, S. Rozborski, D. Boldo: Time dependent transition on vertical heating plate
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Industry session

Wednesday, 13.45-14.30, June 24th, 2026

Room: 0.4

Chairperson: Prof. Grzegorz Liśkiewicz

- 13.45 A. Antonowicz, K. Dörner: Dantec Dynamics systems in Macro and Micro Experimental Fluid Dynamics
- 14.05 J. Tumidajski: Adaptive surrogate-based exploration of parametric CFD design spaces