L E C T U R E S – Conference room

Wednesday, February 18, 2026

ZOOM link to sessions

8:00-9:00 ***REGISTRATION***

9:00-9:10 ***CONFERENCE OPENING***

9:10-9:30 **FUKA V.:** Machine-Learning-Based Subgrid Modelling for the Atmospheric Boundary Layer

9:30-9:50 **KUBÍČKOVÁ L.,** ISOZ M.: Connecting immersed boundary method with heat transfer for simulations of mechanical metamaterials

9:50-10:10 **LÉDL M.**, KUBÍČKOVÁ L., ISOZ M.: Using U-Net to Estimate Fluid Flow in Mechanical Metamaterials

10:10-10:30 ***COFFEE BREAK***

10:30-10:50 **ZHANG J.**, SUN D., HU J., XU D. LIU X., SUN J.: Resolvent Analysis of Single Rotor Wake Stability in Ground Effect

10:50-11:10 **HAIDL J.**, BÍLEK V., GEBOUSKÝ O, PIVOKONSKÝ M.: On Flow Simulation Strategy for Industrial Mixed Vessels

11:10-11:30 **BÍLEK V.,** GEBOUSKÝ O., HAIDL J..: CFD Simulation Methodology Validated for Mixed Rectangular Tank Equipped with Single and Multiple Impellers

11:30-11:50 **URUBA V,** PROCHÁZKA P.: Effect of Surface Roughness on Vortex Shedding in The Wake of a Circular Cylinder in a Subcritical Regime

11:50-13:20 ***LUNCH***

13:20-14:40 ***POSTER DISCUSSION***

14:40-15:00 **KRÜGER L.,** HUSSONG J., JAKIRLIČ S.: Experimental and Scale-Resolving Simulation Study of Flow Dynamics in Fuel Cell Cooling Systems

15:00-15:20 **CHANDRASEKARAN K. S.**, MARIAPPAN S., DAS D., SINGH A.: Comparison of Infrared Thermography, Temperature-Sensitive Paint, and Particle Image Velocimetry in Detecting the Onset of Laminar-To-Turbulent Boundary Layer Transition

15:20-15:40 **SHKVAR Y.:** TR-PIV Comparative Study of Vortical Systems Behind Leading-Edge Vortex Generators and Large Eddy Breakup Devices

15:40-16:00 **VINŠKOVSKÝ R.:** Preliminary Study of Wind Interaction with a Gable Roof – Wind Tunnel Experiment with Downscale Model

16:00-16:20 ***COFFEE BREAK***

16:20-16:40 **AFSHARPANAH F.**, PONCET S., AMIRI L.: Isothermal Transport of Ice Slurry Flow in 90° Vertical Elbows

16:40-17:00 **NESTERUK I.:** Prandtl's Boundary-Layer Theory as a Basis for Improving Aerodynamic Shapes

17:00-17:20 **DIMITRIEVA N.**, KRIVONOG O., FADEICHEV V., ROMANENKO P., KOVAL S.: Numerical and Experimental Study of The Characteristics of Airlift Pumps

18:30 ***INFORMAL DINNER -*** Pivovar u Bulovky

Thursday, February 19, 2026

ZOOM link to sessions

9:00-9:20 **KHÝR M.**, ISOZ M.: Distance Based Similarity Metrics for Artificial Neural Network Estimates of Soot Distribution in Catalytic

9:20-9:40 **KOVÁRNOVÁ A.,** KUBÍČKOVÁ L., ISOZ M.: Towards Shape Optimization of a Quartz Crystal Microbalance Biosensor

9:40-10:00 **ZAGUMENNYI Y.,** VOROPAIEV G.: Sensitivity of The Boundary Layer Flow to Wave Perturbations Distributed on The Surface

10:00-10:20 **SIBGATULLIN I.,** DELEUZE J., JOUBAUD S.: Multi-stability Effects in Internal Wave Modes and Wave Attractor Regimes in Stratified Fluids

10:20-10:40 ***COFFEE BREAK***

10:40-11:00 **CHEMETOV N.:** A Boundary Control Problem for Stochastic 2D-Navier-Stokes Equations

11:00-11:20 **VARNHORN W.**: On the Exterior Dirichlet Boundary Value Problem for The Stokes Resolvent Equations in Two Dimensions

11:20-11:40 **UHLÍŘ V.**, BODNÁR T., FRAUNIÉ Ph.: Assessment of Steady-State and Transient Approaches for Simulating Flow Over a Wall - Mounted Cube

11:40-12:00 **BELDA M.,** ISOZ M., MĚKUTA F., HYHLÍK T.: A Promising Quantitative Measure for Comparison of Power Spectral Densities

12:00-13:30 ***LUNCH***

13:30-14:40 ***POSTER DISCUSSION***

14:40-15:00 **PROCHÁZKA P.**, Skála V., ŠNÁBL P., PRASAD C.S.: Aeroelastic Response and Wake Analysis of a Blade Cascade Exposed to Controlled Radial Cross-Flow

15:00-15:20 **ŠIDLOF P,** LEPIČOVSKÝ J., ŠIMURDA D.: Experimental Research of Flutter in a Transonic Compressor Blade Cascade

15:20-15:40 **GENG C.**, SUN D., ZHANG M., LIU L., LIU X. SUN X.: An Experimental Investigation of The Coupled Aerodynamic-Acoustic Response of an Isolated Rotor to Foam Metal Casing Treatment

15:40-16:00 **MĚKUTA F.,** HYHLÍK T.: Space-Only POD Analysis of an Aircraft Propeller Wake Based on CTA Measurements

16:00-16:20 ***COFFEE BREAK***

16:20-16:40 VOROPAIEV G., **BASKOVA O.**: Features of the Transition from Laminar to Turbulent Flow in the Presence of Non-Isothermal Conditions in Tubes

16:40-17:00 RAUŠOVÁ M., **TRNKA F.**, SCHMIRLEROVÁ H., SCHMIRLER M.: The Effect of Neglecting Transient Flow in Nasal Cavity CFD Simulations

CONFERENCE CLOSING

Friday, February 20, 2026

Possibility of excursions to the Institute's laboratories

Note:
Timing includes a short discussion (approx.5min)

P O S T E R S – Conference room A

1. **ANTOŠOVÁ Z.**, CHOU Y.-J., KO Y.-H., CHEN Y.-W, TRÁVNÍČEK Z..: Experiments and Numerical Simulation of Synthetic Jets Issuing from an Oscillating Nozzle
2. **DUDA D.**: Some Attempts on Characterization of Turbulent Wakes Observed by Using Stereo PIV in a Plane Perpendicular to the Flow
3. **FLÍDR E.**, NĚMEC M., ŠIMURDA D..: Difference Between Continuous Traversing and Step by Step Measurement at The Linear Blade Cascade Outlet
4. **GEBOUSKÝ O.**, BÍLEK V., HAIDL J.: Methodology for Velocity Field Measurements in Pilot-Scale Stirred Vessels Using 2-D Particle Tracking Velocimetry
5. **HLAVATÝ T.**, ISOZ M., KOVÁRNOVÁ A., SVOBODA T., MOUCHA T., SLUKOVÁ M.: What Can Be Gained via Model Order Reduction of Bread-Baking Simulations?
6. **KOVÁŘ P.**, FÜRST J.: Higher-Order Physics-Informed Neural Networks for Parametric Solution of the Unsteady Heat Equation
7. **MRÁZOVÁ A.**, DUDA D., JANSKÝ V., BARTOŠ V., DOLEJŠÍ M., YANOVYCH V., URUBA V.: Comparison of the Wake in Free Stream and the Wake in Confined Open Channel of Nuclear Reactor Fuel Assembly
8. **PUČEJDL P.**, VALÁŠEK J., MARHAN T., SVÁČEK P.: Modal Analysis of Prestressed Vocal Fold Model
9. **STUDENÍK O.**, TERPÁKOVÁ J., HAIDL J., ISOZ M.: Direct Numerical Simulation of Contact Dynamics in Pseudo-2D Fluidized Beds: Effects of Sampling Depth and Region Size
10. **ŠAMLOT J.**, FÜRST J.: Mathematical Modeling of Dilute Gas Using Monte Carlo Method
11. SEREBRYAKOV V., **DIMITRIEVA N.**: Study of Problems for Body Motion in a Cavity with Gas Injection
12. **TATER A.**, HOLMAN J.: Matrix-Free LU-SGS Solver for Hypersonic Laminar Diatomic Gas Flows with Decoupled Vibrational Energy Mode: Mesh Effects on Shock Waves and Separation Bubble in Double-Cone Flow
13. **VÍTOVEC M.**, HALAMA J.: Two-Fluid Finite Volume Solver for Wet Steam Flow

Under the auspices of ERCOFTAC

With the support of the Czech Society for Mechanics

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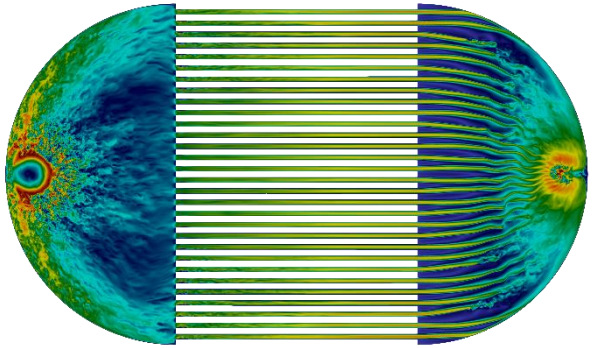

Programme of the Conference

T O P I C A L P R O B L E M S O F F L U I D M E C H A N I C S 2 0 2 6

ORGANISED BY

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