POLSKA AKADEMIA NAUK

POLITECHNIKA WARSZAWSKA
Wydział Mechaniczny Energetyki i Lotnictwa
INSTYTUT TECHNIKI LOTNICZEJ I MECHANIKI STOSOWANEJ

Symposium

"Experiments in Fluid Mechanics 2017"

23-24 OCTOBER 2017

Location: Institute of Aeronautics and Applied Mechanics
Room 6, Nowowiejska 24, Warsaw

AGENDA

23.10.2017 Monday

10.00-10.30 **Early coffee break**

10.30-11.20 **Volkert van Steijn**
Formation and transport of bubbles and droplets at low capillary number
TU Delft

11.20-12.40 **Microfluidics**
Piotr Korczyk, Damian Zaremba, Sławomir Błoński
Can droplets count? Integrated microfluidic logic circuits
Institute of Fundamental Technological Research Polish Academy of Sciences
Michal Klamka, Tomasz Bobiński
Droplet surfing on a boundary layer
Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology
Damian Zaremba, Sławomir Błoński, Piotr M. Korczyk
Modular microfluidic geometries for passive droplets manipulations - experimental analysis
Institute of Fundamental Technological Research Polish Academy of Sciences
Michal Remer, Tomasz Bobinski, Jacek Rokicki
Dynamic contact angle of an impinging water droplet
Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology

12.40-13.40 **Lunch**

13.40-14.30 **Harry W.M. Hoeijmakers**
Study into Utilization of Synthetic Jet Actuators for Flow Control
Group Engineering Fluid Dynamics, University of Twente

14.30-15.50 **Aerodynamics**
Wit Stryczniewicz, William J. Deitrick, Grzegorz Krysztofiak, Paweł Ruchała
Implementation of Pressure Sensitive Paint technique in Applied Aerodynamics

Laboratory
Aerodynamic Department, Institute of Aviation
Marcin Kurowski, Ryszard Szwaba, Janusz Telega, Pawel Flaszyński, Fernando Tejero
Influence of jets to wall distance on the heat transfer distribution at high flow velocity
Experimental Aerodynamics Department, Institute of Fluid Flow Machinery
Wojciech Gryglas, Łukasz Łaniewski-Wołłk, Bartosz Olszański, Piotr Szałtys
Application of the POD method to optimal design of experiment
Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology
Robert Placek, Paweł Ruchała
The flow separation development analysis in subsonic and transonic flow regime of the laminar airfoil
Aerodynamic Department, Institute of Aviation

15.50-16.10 **Coffee break**

16.10-17.00 **Philippe Petitjeans**
Water wave propagation over a controlled bathymetry
École Supérieure de Physique et de Chimie Industrielles de la ville de Paris, Laboratoire de Physqiue et Mécanique des Millieux Hétérogènes

17.00-18.40 **Aerodynamics and Transition**
Konrad Gumowski, Sławomir Kubacki
Laminar to turbulent transition in separated boundary layer at elevated turbulence level
Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology
Artur Dróżdż, Witold Elsner
Study of Turbulent Boundary Layer Approaching Separation
Institute of Thermal Machinery, Czestochowa Univ. of Tech.
Idalia Jagodzińska, Bartosz Olszański, Zbigniew Nosal
Supersonic wind tunnel testing
Institute of Aeronautics and Applied Mechanics Warsaw University of Technology
Paweł Ruchała, Grzegorz Krysztofiak
Methodology of Wind Tunnel Investigation of Buildings
Institute of Aviation
Łukasz Klotz, Idalia Frontczak, Grégoire Lemoult, Laurette Tuckerman, José Eduardo Wesfreid
Experimental investigation of transient growth and large scale flow in plane Couette-Poiseuille flow
CNRS, ESPCI, PSL Research University Paris, Institute of Science and Technology Austria, Institute of Aeronautics and Applied Mechanics Warsaw University of Technology

20.00 **Experimental Dinner**

24.10.2017 Tuesday

9.45-10.15 **Early coffee break**

10.15-11.00 **Carsten Kykal**
TSI l*atest Development on Volumetric Velocimetry Solutions*

11.00-12.00 **Signal analysis**
Marta Wacławczyk, Yong-Feng Ma, Jacek M.Kopeć, Emmanuel O. Akinlabi, Szymon P. Malinowski

Novel approaches to estimating turbulent kinetic energy dissipation rate from low and moderate resolution velocity fluctuation time series
Institute of Geophysics, Faculty of Physics, University of Warsaw
Interdisciplinary Centre of Mathematical and Numerical Modelling, University of Warsaw
Agnieszka Pawłowska, Stanisław Drobniak
Experimental analysis of the effect of external forcing upon the free jet
Institute of Thermal Machinery, Czestochowa University of Technology
Janusz Telega
Fourier transformation analysis of interferometric flow image
Institute of Fluid Flow Machinery, Polish Academy of Sciences

12.00-12.50 **Miguel Alfonso Mendez,**
Multiscale Modal Analysis of Experimental and Numerical Data
von Karman Institute for Fluid Dynamics

12.50-13.50 **Lunch**

13.50-14.50 **Multiphase flows**
Sylwia Pawłowska, Tomasz Kowalewski
Lateral migration of solid spheroidal nanoparticles and highly deformable hydrogel nanofilaments under the influence of oscillatory flow
Institute Of Fundamental technological Research Polish Academy of Sciences
Natalia Kizylova, Liliya Batyuk
Complex flows of cellular suspensions in microtubes at different temperatures
Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology
Jakub Nowak, Jacob Fugal
Long-exposure digital holography applied to study mixing at the laboratory analogue of cloud top
Institute of Geophysics, Faculty of Physics, University of Warsaw
Institute for Atmospheric Physics, Johannes Gutenberg University Mainz

14.50-15.50 **Experiment and Simulations 1**
Adam Piotr Anglart, Thomas Humbert, Philippe Petitjeans, Vincent Pagneux, Agnès Maurel
Water waves over variable bathymetry branched flow in the linear regime
École Supérieure de Physique et de Chimie Industrielles de la ville de Paris, Laboratoire de Physqiue et Mécanique des Millieux Hétérogènes, Warsaw University of Technology, The Faculty of Power and Aeronautical Engineering, Laboratoire d'Acoustique de l'Université du Maine, Avenue Olivier Messiaen, Institut Langevin LOA
Krzysztof Kurec, Michał Remer, Janusz Piechna
A car active wing. Experimental and numerical investigation
Institute of Aeronautics and Applied Mechanics Warsaw University of Technology
Piotr Kaczynski, Filip Wasilczuk, Paweł Flaszyński, Ryszard Szwaba, Piotr Doerffer
Leakage flow reduction in the gas turbine shroud gap
Institute of Fluid Flow Machinery, Polish Academy of Sciences

15.50-16.20 **Coffee break** and Meeting of Subcommittee of Fluid Mechanics of Polish Academy of Science (Room 110) - held in Polish

16.20-17.00 **Experiment and Simulations 2**
Jan Wiśniewski, Jacek Szumbarski,

Aerodynamic optimization of large-scale VAWT - elements of multi-parameter analysis
Institute of Aeronautics and Applied Mechanics Warsaw University of Technology
Bartosz Olszański, Idalia Jagodzińska, Zbigniew Nosal
Aerodynamic characteristics identification of missile control surfaces
Institute of Aeronautics and Applied Mechanics Warsaw University of Technology

17.00-17.30 Tour around the LATiS laboratory

The Symposium is Organized by:

- Committee of Mechanics, Polish Academy of Sciences
- University Centre for Aeronautics and Astronautics, Warsaw University of Technology
- Institute of Aeronautics and Applied Mechanics, Warsaw University of Technology
- The Szewalski Institute of Fluid-Flow Machinery Polish Academy of Sciences, Gdansk
- Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw
- Polish Pilot ERCOFTAC Centre, Warsaw University of Technology
- The financial support of TSI is gratefully acknowledged

Organisers:

Prof. Stanisław Drobniak, Prof. Piotr Doerffer, Prof. Tomasz Kowalewski,
Prof. Jacek Rokicki (Chairman), Prof. Jacek Szumbarski