

## OS15: Turbulence: from Fundamentals to Applications

November 10, 2025

EX-Hall-1B

- OS15-1  
13:50-14:10      **Active Flow Control on NACA 0015 Airfoil using Backward-Facing Step Fluidic Oscillator**  
Waridho Iskandar, Harinaldi (Universitas Indonesia, Indonesia), James Julian (Universitas Pembangunan Nasional Veteran Jakarta, Indonesia), Muhammad Ilham Adhynugraha, Fadilah Hasim (National Research and Innovation Agency (BRIN), Indonesia)
- OS15-2  
14:10-14:30      **Heat Transfer Performance of High-Frequency Pulsating Jet Impingement Liquid Cooling at Different Reynolds Numbers**  
Zhan-Hui Lin, Chi-Chuan Wang (National Yang Ming Chiao Tung University, Taiwan)
- OS15-3  
14:30-14:50      **Shape Optimization of Internal Nozzle Geometry for Desired Jet Exit Velocity Distribution**  
Tasuku Kiyomoto, Yasumasa Ito (Nagoya University, Japan)
- 15:00-15:15      BREAK
- OS15-4  
15:15-15:55      **Helicity Turbulence Model and its Application to Stellar Angular-Momentum Transport (*Invited*)**  
Nobumitsu Yokoi (University of Tokyo, Japan / Nordic Institute for Theoretical Physics (NORDITA), Sweden)
- OS15-5  
15:55-16:15      **Physical Mechanism of Turbulence Modulation by Polymer Additives in Rotor-Driven Turbulence**  
Masahiro Suzuki, Yutaro Motoori, Susumu Goto (The University of Osaka, Japan)
- OS15-6  
16:15-16:35      **Analysis on Trapping and De-trapping Processes of Small Particles in Thermal Counterflow of Superfluid He II with Quantum Vortex Lines**  
Pasan Sanjeeva, Masahito Nishikawara, Yoshiyuki Tsuji (Nagoya University, Japan)
- 16:45-17:00      BREAK
- OS15-7  
17:00-17:20      **Residual-Based Diffusion Model for High-Resolution Flow Field Reconstruction**  
Golsa Tabe Jamaat (Tohoku University, Japan), Takayuki Okatani (Tohoku University / RIKEN Center for AIP, Japan), Yuji Hattori (Tohoku University, Japan)
- OS15-8  
17:20-17:40      **Pressure Reconstruction from 3D PTV Data Applied to the Wake of F1 Geometries**  
Isabella Fumarola, Adam Meziane, Isaac Balbolia, Jonathan Morrison (Imperial College London, UK)

OS15-9      **Analysis of Coarse-grained Turbulent Vorticity Fields at High Reynolds Numbers using Large-scale DNS**  
17:40-18:00      Takashi Ishihara, Yoshinobu Kanao (Okayama University, Japan), Yuji Hattori (Tohoku University, Japan)

**November 11, 2025**  
**EX-Hall-1B**

OS15-10      **The Sound-Vortex Feedback Loop under Wing-in-Ground Effect**  
10:45-11:05      Liangkui Tan, Yuji Hattori (Tohoku University, Japan)

OS15-11      **Effects of Grooved Nozzle on Underexpanded Jet Structure and Screech Tones**  
11:05-11:25      Ryoma Sakai, Shinichiro Nakao, Yoshiaki Miyazato (The University of Kitakyushu, Japan)

OS15-12      **Numerical Analysis and Wind-tunnel Experiment on the Flow around a 5:1 Rectangular Cylinder Moving near the Ground at  $Re = 6700$**   
11:25-11:45      Ryota Tominaga, Yuwa Kichise, Katsuya Hirata (Doshisha University, Japan)

OS15-13      **LES of Flow around a Longitudinal Square Cylinder Moving near the Ground**  
11:45-12:05      Mohammed Firoz Rathore, Yuui Mitamura, Kazuki Matsuno (Doshisha University, Japan), Tatsuya Inoue (Railway Technical Research Institute, Japan), Katsuya Hirata (Doshisha University, Japan)

12:15-13:30      BREAK

OS15-14      **Hierarchy of Coherent Vortices in Wall Turbulence using Numerical Simulation and Experimental Data**  
13:30-13:50      Yutaro Motoori (The University of Osaka, Japan), Pierre Bragança (LMFL, France), Susumu Goto (The University of Osaka, Japan)

OS15-15      **Turbulent Transport Characteristics of Coherent Structures in Ideal Vegetation Morphology Based On Wind Tunnel Experiments**  
13:50-14:10      Guoliang Chen, Fei Li, Lei Yan, Shiyun Liu, Chun-Ho Liu (The University of Hong Kong, China), Ziwei Mo (Sun Yat-sen University, China)

OS15-16      **On the Effect of Navier Slip Length on Turbulent Transport in the Wake behind a Square Prism**  
14:10-14:30      Muyang Wang (Harbin Engineering University, China), Yasumasa Ito (Nagoya University, Japan)

OS15-17      **Experimental Study on the Effect of Microbubbles on Large-Scale Turbulent Structures in Pipe Flow**  
14:30-14:50      Xianfeng Wu, Yasuhisa Hamana, Masahito Nishikawara, Yoshiyuki Tsuji (Nagoya University, Japan)

15:00-15:15      BREAK

OS15-18      **Spectral Proper Orthogonal Decomposition of Coherent Structure and Energy Transfer in Urban Convective Boundary Layers**  
15:15-15:35      Lei Yan, Kangcheng Zhou, Guoliang Chen, Chun-Ho Liu (The University of Hong Kong, China)

- OS15-19      **Study on Laminar-Turbulence Transition Process in Supersonic Boundary Layer**  
/OS23-1      **Based on Variational Mode Decomposition and Optimal Perturbation Analysis**  
15:35-15:55      Nobutaka Taniguchi, Aiko Yakeno (Tohoku University, Japan)
- OS15-20      **Large Eddy Simulations on Heat Flux Characteristics of Apollo-shaped Capsule**  
/OS23-2      Kento Inokuma, Aiko Yakeno, Baptiste Ridolfi (Tohoku University, Japan), Shuto  
15:55-16:15      Yatsuyanagi, Hideyuki Tanno (Japan Aerospace Exploration Agency, Japan)