

OS7: Advances in Simulation Techniques for the Computational Aerosciences

November 11, 2025

EX-1

- OS7-1 **Study on Aerodynamic Approximation for Aeroelastic Analysis**
9:00-9:20 Naomi Okubo (The University of Tokyo, Japan), Naoto Morita (Nihon University, Japan), Takeshi Tsuchiya (The University of Tokyo, Japan)
- OS7-2 **Application of Deep Koopman Operator Theory to Fluid-Structure Interaction**
9:20-9:40 Kizuku Marumoto, Yu Kawano (Hiroshima University, Japan), Chungil Lee, Yoshiaki Abe (Tohoku University, Japan)
- OS7-3 **Analysis of Fluid-Structure Interaction Using Residual Force Stabilization**
9:40-10:00 Haruka Asanoumi, Yu Kawano (Hiroshima University, Japan), Chungil Lee, Yoshiaki Abe (Tohoku University, Japan)
- OS7-4 **Fourier Neural Autoencoder for Modal Analysis in Fluid Flows**
10:00-10:20 Kemas Zakaria, Hafizh Renanto Akhmad, Muhammad Arviano Yuono, Pramudita Satria Palar (Bandung Institute of Technology, Indonesia), Joseph Morlier (Université de Toulouse, France), Lavi Rizki Zuhail (Bandung Institute of Technology, Indonesia)
- 10:30-10:45 BREAK
- OS7-5 **Unsteady Aerodynamic Characteristics of a Thin Elastomeric Membrane Wing by Fluid-Structure Interaction Analysis**
10:45-11:05 Kosei Funada, Honoka Osaki, Yuma Chikamoto, Taishi Kimura, Daisuke Sasaki (Osaka Metropolitan University, Japan), Koji Fujita, Masato Okamoto (Kanazawa Institute of Technology, Japan), Yuki Kawamoto (Tokai University, Japan), Shun Takahashi (Japan Aerospace Exploration Agency, Japan), Tsubasa Ikami, Hiroki Nagai (Tohoku University, Japan)
- OS7-6 **Simulation of Axisymmetric Bodies at High Angle of Attack with an Optimized Rotation-Curvature Correction in the $k\omega$ -SST Model**
11:05-11:25 Byeongkyu Park, Jaehyoung Park, Jin Seok Park, Seungsoo Lee (Inha University, Republic of Korea)
- OS7-7 **Numerical Simulation Study of Aerodynamic Parameters for Tailless Aircraft Configuration**
11:25-11:45 Wan-Ja Leung, Yi-Chung Liu, Hang-Suin Yang, Rui-Sin Hsu (National Chung Cheng University, Taiwan)
- OS7-8 **Numerical Investigation of High-lift Aerodynamic Configuration for Twin-Tail UAV Design Applications**
11:45-12:05 Yi-Chung Liu, Jui-Che Lin, Hang-Suin Yang, Wan-Ja Leung, Rui-Sin Hsu (National Chung Cheng University, Taiwan)
- 12:15-13:30 BREAK

- OS7-9 **Reduced Order Modeling of Turbulent Channel Flow Undergoing Wavy Walls**
13:30-13:50 Matthew Brockhaus, Adrian Sescu (Mississippi State University, USA)
- OS7-10 **Fluid-Structure Interaction Analysis based on Control Theory**
13:50-14:10 Chungil Lee, Tomoki Yamazaki (Tohoku University, Japan), Yu Kawano (Hiroshima University, Japan), Yoshiaki Abe (Tohoku University, Japan)
- OS7-11 **Machine Learning-Based Surrogate Modeling for Fluids Engineering Simulation and Design**
14:10-14:30 Koji Shimoyama, Ren Saito, Shunya Yoshida (Kyushu University, Japan)
- OS7-12 **Machine-learning-based Informative Mode Analysis for Separated Airfoil Wakes**
14:30-14:50 Kai Fukami (Tohoku University, Japan), Ryo Araki (Tokyo University of Science, Japan)
- 15:00-15:15 BREAK
- OS7-13 **Aviation Turbulence and Climate Change (*Invited*)**
15:15-16:15 Rafael Palacios (Imperial College, London, UK)
- OS7-14 **Flexible Wing Simulation and Experiment Using Magnetic Suspension and Balancing System**
16:15-16:35 Kento Shimura, Yoshiaki Abe, Keisuke Otsuka (Tohoku University, Japan)
- 16:45-17:00 BREAK
- OS7-15 **Multi-Disciplinary Optimization with Aero-Structure Analyses for Flexible Aircraft**
17:00-17:20 Naoto Morita (Nihon University, Japan), Naomi Okubo (The University of Tokyo, Japan)
- OS7-16 **Multi-objective Bayesian Optimization of Composite Aircraft Wings**
17:20-17:40 Yajun Liu, Yoshiaki Abe (Tohoku University, Japan)
- OS7-17 **Implicit Solver for Flexible Structures in Uniform Flow**
17:40-18:00 Tomoki Inoue, Keiichi Hiroaki (Kogakuin University, Japan)
- OS7-18 **Conservative Load and Displacement Transfer in Fluid Structure Interaction**
18:00-18:20 Keisuke Kamakura, Yoshiaki Abe (Tohoku University, Japan)

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- OS7-19 **Strong Stability Preserving Runge-Kutta Projection Methods**
9:00-9:20 Mohammad R. Najafian, Brian C. Vermeire (Concordia University, Canada)
- OS7-20 **Development of a Porosity-Based Immersed Boundary Model for the Compressible Navier-Stokes Equations on Cartesian Grids**
9:20-9:40 Eishu Kawashiro, Hiroshi Terashima, Nobuyuki Oshima (Hokkaido University, Japan)

- OS7-21
9:40-10:00 **Online Load Balancing of High-Order Mixed Element Simulations on Heterogeneous Architectures**
Sambit Mishra (Texas A&M University, USA), Semih Akkurt (Imperial College, London, UK), Freddie Witherden (Texas A&M University, USA)
- OS7-22
10:00-10:20 **A Cartesian Multilevel Multigrid Method for Steady-State Reynolds-Averaged Navier-Stokes.**
Ankith Anil Das, Nicholas Williamson, Steven Armfield (University of Sydney, Australia)
- 10:30-10:45 BREAK
- OS7-23
10:45-11:05 **Structure of Underexpanded Star Jets by Numerical Simulation**
Taiyo Toyoyama, Shunta Togoshi, Shinichiro Nakao, Yoshiaki Miyazato (The University of Kitakyushu, Japan)
- OS7-24
11:05-11:25 **Three-Dimensional Structure of Underexpanded Hexagonal Jets by Numerical Calculations**
Rikuto Mizobe, Shinichiro Nakao, Yoshiaki Miyazato (The University of Kitakyushu, Japan)
- OS7-25
11:25-11:45 **Numerical Simulations of Underexpanded Square Jets**
Meru Takamura, Shinichiro Nakao, Yoshiaki Miyazato (The University of Kitakyushu, Japan)
- 12:15-13:30 BREAK
- OS7-26
13:30-13:50 **Three-Dimensional Visualization of Transonic Diffuser Flow by Unsteady Simulation**
Hiroki Kodama, Masaki Okajima, Shinichiro Nakao, Yoshiaki Miyazato (The University of Kitakyushu, Japan)
- OS7-27
13:50-14:10 **Coupled-Direction Parallelization Algorithm of Static Aeroelastic Analysis for High Fidelity Analysis**
Yuki Yatsu, Yoshiaki Abe (Tohoku University, Japan)
- OS7-28
14:10-14:30 **Data-Driven Model-Order Reduction of Optimized Wing Geometries of Composite Aircraft**
Romain Urbaniak (Polytechnique Universitaire de Lyon, France), Yoshiaki Abe, Yajun Liu (Tohoku University, Japan)