

OS18: The 16th International Students / Young Birds Seminar on Multi-scale Flow Dynamics

- OS18-1 **System Analysis of a Two-Phase Mechanically Pumped Fluid Loop with a Heat Pump for Spacecraft**
Rin Asato, Takuya Adachi, Xinyu Chang, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
- OS18-2 **Applicability of Eddy Current Testing Using the Directional Magnetic Flux for Inspection of Fiber Misorientation in Cross-ply CFRP**
Junya Horibe, Hiroyuki Kosukegawa (Tohoku University, Japan), Tetsuya Uchimoto (Tohoku University / ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Mitsuo Hashimoto (Tohoku University, Japan), Toshiyuki Takagi (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University / Tohoku University, Japan)
- OS18-3 **Unsteady Aerodynamic Characteristics of AR=1 Wing with Heaving Motion at Low Reynolds Number**
Kaisei Mizumoto, Shota Fukatsu, Masato Okamoto (Kanazawa Institute of Technology, Japan)
- OS18-4 **A Convolution Neural Network Model for Automatic Signal Analysis in Eddy Current Testing**
Xinwu Zhou, Ryoichi Urayama, Sho Takeda (Tohoku University, Japan), Tetsuya Uchimoto (Tohoku University / ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Toshiyuki Takagi (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University / Tohoku University, Japan)
- OS18-5 **Development of Three-dimensional Probability of Detection Model for Monitoring Local Wall Thinning in Pipes**
Haicheng Song, Noritaka Yusa (Tohoku University, Japan)
- OS18-6 **The Effect of Surface Treatment on Evaluation of Plastic Deformation of Carbon Steels by Eddy Current Magnetic Signature**
Aoba Kita, Sho Takeda, Tetsuya Uchimoto (Tohoku University, Japan)
- OS18-7 **Effect of Warming Process on Mechanical Strength and Microstructure in Consolidated Copper Powder by Compression Shearing Method**
Yusuke Koshiba, Hiroyuki Miki, Sho Takeda (Tohoku University, Japan), Noboru Nakayama (Shinshu University, Japan)
- OS18-8 **Investigation of the Factors Determining Spectrum of Electromagnetic Acoustic Resonance on Thickness Measurement of Corroded Carbon Steel Specimen**
Daiki Iwata (Tohoku University, Japan), Tetsuya Uchimoto (Tohoku University / ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Sho Takeda, Diguét Gildas Alan Erwan, Yuichi Hirose (Tohoku University, Japan)

- OS18-9 **Effects of Shear Deformation on Mechanical Properties of Cu-Zn Alloy Thin Plate Formed by Compression Shearing Method**
Takuma Takahashi, Hiroyuki Miki, Sho Takeda (Tohoku University, Japan), Noboru Nakayama (Shinshu University, Japan), Hiroyuku Takeishi (Chiba Institute of Technology, Japan)
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- OS18-11 **Analysis and Experiment about Absorption Performance for Thermal Switching Coating**
Masayuki Yano, Gong Jin, Hiroki Gonome (Yamagata University, Japan)
- OS18-12 **Extension of the Mass Center MTHINC Method to Generalized Coordinate System**
Shunya Kato, Tameo Nakanishi (Yamagata University, Japan)
- OS18-13 **Length Sizing of Cracks in Ferromagnetic Structural Materials by Eddy Current Testing Using Directivity of TR Probe**
Shurui Zhang, Sho Takeda (Tohoku University, Japan), Tetsuya Uchimoto, Toshiyuki Takagi (Tohoku University / ELYTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Mitsuo Hashimoto (Tohoku University, Japan)
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Pan Pengcheng, Noritaka Yusa (Tohoku University, Japan)
- OS18-15 **Numerical Study of Slit Position for Suppression Effect on Cavitation Instabilities in Inducers**
Moena Kanamaru, Asuka Kowata (Tohoku University, Japan), Satoshi Kawasaki (Japan Aerospace Exploration Agency, Japan), Yuka Iga (Tohoku University / Japan Aerospace Exploration Agency, Japan)
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Kohei Sone, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
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Naoya Uene, Takuya Mabuchi (Tohoku University, Japan), Masaru Zaitso, Shigeo Yasuhara (Japan Advanced Chemicals Ltd., Japan), Takashi Tokumasu (Tohoku University, Japan)
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Kazuya Suzuki, Masaki Wada, Naoki Ono (Shibaura Institute of Technology, Japan)

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- OS18-20 **Hiroto Tanaka, Hiroki Nagai (Tohoku University, Japan)
Evaluation of Boundary Layer Transition Positions on Pitching Airfoil for Unsteady cmtTSP Measurement
Tsubasa Ikami, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)**
- OS18-21 **Towards the Application of OH(2,0) PLIF to High-pressure Mixed Phase Combustion
Yasuhiro Higuchi (Tohoku University, Japan), Yoshio Nunome, Sadatake Tomioka, Takeo Tomita (Japan Aerospace Exploration Agency, Japan), Taku Kudo, Akihiro Hayakawa, Hideaki Kobayashi (Tohoku University, Japan)**
- OS18-22 **A Reconstruction Scheme for Pitting Corrosion Defects in Steam Generator Tubes from Eddy Current Testing Signals
Yingsong Zhao (Xi'an Jiaotong University, China), Li Wang (Xi'an University of Posts & Telecommunications, China), Pan Qi (China Nuclear Power Operation Technology Corporation, China), Zhijun Wang (Xi'an Jiaotong University, China), Jie Han (China Nuclear Power Operation Technology Corporation, China), Wenlu Cai, Zhenmao Chen (Xi'an Jiaotong University, China)**
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Tomoko Kimura, Kaito Sato, Minoru Shirota (Hirosaki University, Japan)**
- OS18-24 **Experimental Investigation on Rotor Performance of Mars Helicopter for Pit Crater Exploration
Atsushi Yamaguchi, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)**
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Shinya Okazawa, Nie Qinxue, Yuki Kanda, Atsuki Komiya (Tohoku University, Japan)**
- OS18-27 **Influence of Phase Differences between Periodic Flow and Angle of Pitching Wing on Lift Coefficient
Yoshitaka Isoda, Yohsuke Tanaka, Takuma Sadanaga, Shigeru Murata (Kyoto Institute of Technology, Japan)**
- OS18-28 **Influence of Tire Thread Patterns on Flows around a Tire with Wheelhouse
Katsuyuki Yokoyama, Shigeru Murata (Kyoto Institute of Technology, Japan), Hayato Yogou (Toyo Tire Corporation, Japan), Yohsuke Tanaka (Kyoto Institute of Technology, Japan)**
- OS18-29 **Influence of Liquid Flow on Evaporation in Drying Process for Coating Materials and Estimation of the Evaporation Rate
Takahiro Ono, Yutaro Asanuma, Naoki Ono (Shibaura Institute of Technology, Japan)**

- OS18-30 **Effect of Wettability on Start-up Characteristic of OHP**
Kento Watanabe, Takuya Adachi, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
- OS18-31 **Numerical Investigation on Three-Dimensional Flow Structure over Fixed Wing within Propeller Slipstream**
Yoshikatsu Furusawa, Keiichi Kitamura (Yokohama National University, Japan), Hiroki Nagai (Tohoku University, Japan), Akira Oyama (Japan Aerospace Exploration Agency, Japan)
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Yuhei Ishikawa, Kodai Kamiyama, Wataru Yamazaki (Nagaoka University of Technology, Japan)
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Sayaka Miyazaki, Daisuke Sasaki (Kanazawa Institute of Technology, Japan)
- OS18-34 **A Study on Thinning of Metal Plate by Applying Electromagnetic Pressure in Solidification Process**
Tomokazu Ideguchi , Takanori Machida , Naoki Ono (Shibaura Institute of Technology, Japan)
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Yuko Yoshizane, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
- OS18-36 **Investigation of the Effect of Propeller Thickness-wise Position on Aerodynamic Performance in Fixed Wing at Low Reynolds Number**
Kosuke Hayashi, Koichi Takahashi, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
- OS18-37 **Experimental Investigation Rotor/Wing Aerodynamic Interaction at High Speed Flight**
Yusuke Hamamoto, Takeshi Akasaka (Kanazawa Institute of Technology Japan), Yasutada Tanabe (Japan Aerospace Exploration Agency, Japan)
- OS18-38 **Visualization of Shock Wave Structures on Wedge Model Using Anodized-Titanium Pressure-Sensitive Paint**
Soichiro Kawazoe, Daiju Numata (Tokai University, Japan)
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Naoki Tanaka, Hiroki Nagai, Koji Fujita (Tohoku University, Japan)
- OS18-40 **Estimation of a Wake Drag Distribution for Wake Integral Method by Convolutional Neural Network**
Yuta Natsume (Kanazawa Institute of Technology, Japan), Yoshinao Takahashi (University of Toyama, Japan), Daisuke Sasaki (Kanazawa Institute of Technology, Japan), Kisa Matsushima (University of Toyama, Japan)

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Rikki Tanaka, Takuya Mabuchi, Takashi Tokumasu (Tohoku University, Japan)
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Koki Nishiyama, Takahiro Okabe, Taimei Miyagawa, Hiroyuki Murata (Hirosaki University, Japan)
- OS18-43 **A Parametric Study for Avoiding Temperature Oscillation of a Loop Heat Pipe**
Takuya Adachi, Koji Fujita, Hiroki Nagai (Tohoku University, Japan), Shun Takahashi (Tokai University, Japan)
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Shota Morita, Aiko Yakeno (Tohoku University, Japan), Christophe Bogey (Université Claude Bernard Lyon I, France), Shigeru Obayashi (Tohoku University, Japan)
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Daichi Yamabata, Seiichiro Morizawa (National Institute of Technology, Okinawa College, Japan)
- OS18-46 **Characteristics of Flexible Membrane Wing for Micro Mars Airplane**
Benmao Lee, Koji Fujita, Hiroki Nagai (Tohoku University, Japan)
- OS18-47 **Coherence in the Stabilization of Foam and Emulsion with Fine Particles**
Mizuho Ono, Hiroki Gonome (Yamagata University, Japan)
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Yohei Wakita, Tatsuya Yamaguchi, Mariko Hasegawa, Yasuto Yugami, Taku Kudo, Akihiro Hayakawa, Hideaki Kobayashi (Tohoku University, Japan)
- OS18-49 **Investigation of the Effect of the Forcing Function on the Burgers Equation**
Golsa Tabatabaee, Yuji Hattori (Tohoku University, Japan)
- OS18-50 **Quantitative Evaluation of Contact Line Instability of Impacting Drops**
Yuka Akiyama, Takahiro Okabe, Minoru Shirota (Hirosaki University, Japan), Masatoshi Daikoku (Hachinohe Institute of Technology, Japan), Yusuke Sato, Yohsuke Matsushita, Hideyuki Aoki (Tohoku University, Japan), Junichi Fukuno (Honda Motor Co., Ltd., Japan)
- OS18-51 **Prediction of Spray Field Using Data Assimilation of Schlieren Image Velocimetry**
Rin Inamura, Aiko Yakeno, Shigeru Obayashi (Tohoku University, Japan), Naoki Watanabe, Naoki Kurimoto (DENSO Corporation, Japan), Scott Skeen (Sandia National Laboratories, USA)

- OS18-52 **Evaluation of Dynamic and Static Characteristics of PSP for Unsteady Measurement**
Ayana Wakayama, Daiju Numata (Tokai University, Japan)
- OS18-53 **Frequency Analysis of Liquid Atomization in a Jet Nebulizer**
Takeshi Monori, Masaru Nikaido, Minoru Shirota (Hirosaki University, Japan)
- OS18-54 **Experimental Observation on Characteristics of High-Speed Mist**
Yunchen Xiao, Siwei Liu, Tomoki Nakajima, Takehiko Sato (Tohoku University, Japan)
- OS18-55 **Influence of Sound Pressure Level to 2D Acoustic Liner Model under Grazing Flow**
Takeru Nomura, Daisuke Sasaki (Kanazawa Institute of Technology, Japan)
- OS18-56 **Spreading and Wetting Diameters of Impacting Drops on Flat Surfaces**
Yuto Fuchisawa, Takumi Okawa, Minoru Shirota (Hirosaki University, Japan)
- OS18-57 **Flow Visualization of a NACA0012 Airfoil with Changing Angle of Attack in a Periodic Flow using Stereo PIV**
Takuma Sadanaga, Yohsuke Tanaka, Yoshitaka Isoda, Shigeru Murata (Kyoto Institute of Technology, Japan)
- OS18-58 **Multibody Dynamic Analysis Based on Canonical Theory**
Shuonan Dong, Keisuke Otsuka, Kanjuro Makihara (Tohoku University, Japan)
- OS18-59 **Semi-Active Vibration Control using Magnetostrictive Transducer**
An Li, Yushin Hara, Kanjuro Makihara (Tohoku University, Japan)
- OS18-60 **Three-dimensional SPH Simulation of Droplet Transfer with Flux Column During Flux Cored Arc Welding**
Ryo Ueno, Masaya Shigeta, Manabu Tanaka (Osaka University, Japan)
- OS18-61 **Experimental Analysis of Natural Convection from A Small Heating Sphere in Water Using A Two-directional Near-infrared Imaging Method**
The Anh Nguyen, Zhenlei Wang, Van Cuong Han (Tokyo Metropolitan University, Japan), Katsuya Kondo (Tottori University, Japan), Naoto Kakuta (Tokyo Metropolitan University, Japan)
- OS18-62 **Near-field Dynamics and Plume Dispersion After an On-road Truck: Large-eddy Simulation**
Jingwei Xie, Chun-Ho Liu, Ziwei Mo (The University of Hong Kong, Hong Kong, China), Yuhan Huang (University of Technology Sydney, Australia / Jockey Club Heavy Vehicle Emission Testing and Research Centre, Vocational Training Council, Hong Kong, China), Wai-Chuen Mok (The University of Hong Kong, Hong Kong, China / University of Technology Sydney, Australia)
- OS18-63 **Experimental Study on Spatial-temporal Thermal-fluid Behaviors and Boiling Sound of Micro-bubble Emission Boiling (MEB)**
Hotaka Kobayashi, Kizuku Kurose, Ichiro Ueno (Tokyo University of Science, Japan)

OS18-64 **Water Uptake Monitoring in Epoxy-amine Polymer by Combining Dielectric and Gravimetric Analysis**

Lucas Ollivier-Lamarque, Tetsuya Uchimoto (Tohoku University / ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan), Mickael Lallart (Tohoku University / ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / INSA Lyon, France), Nicolas Mary (ELyTMaX UMI 3757, CNRS – Université de Lyon – Tohoku University, International Joint Unit, Tohoku University, Japan / INSA Lyon, France), Sabrina Marcelin, Sébastien Livi (INSA Lyon, France)

OS18-65 **2D Numerical Analysis of Propeller-Wing Interaction with Morphing Flap**

Daisuke Yariwake, Yuki Kamiyama, Edyta Dzieminska (Sophia University, Japan), Aiko Yakeno, Yoshiaki Abe, Shigeru Obayashi (Tohoku University, Japan)