The 17th International Conference on Motion and Vibration Control

(MoViC 2024)

The 20th Asia-Pacific Vibration Conference (APVC2024)

Program at a glance

	5-Aug-24	6-Aug-24	7-Aug-24	8-Aug-24
8:50	Opening Ceremony			
9:00	Plenary Talk (Prof. Yoshihiro Narita)	Plenary Talk (Prof. Jiong Tang)	Technical Session J-OS1-1 Dynamics modeling and analysis 1 M-OS2-1 Vehicle dynamics and control 1 J-OS4-1 Human sensing and modeling 1	
9:20				
9:40				
10:00	Coffee Break			Technical Tour 1 (Option)
10:20	Technical Session M-OS1-1 Electromagnetic systems 1 A-OS2-1 Health monitoring, diagnosis 1 J-OS2-1 Noise and vibration control 1	Technical Session J-OS3 Multibody dynamics A-OS5 Vibration applications M-OS4-1 Autonomous and Intelligent Systems 1	Coffee Break	
10:40			Technical Session J-OS1-2 Dynamics modeling and analysis 2 M-OS2-2 Vehicle dynamics and control 2 J-OS4-2 Human sensing and modeling 2	
11:00				
11:20				
11:40				
12:00	Lunch			
12:20				
12:40				
13:00				Technical Tour 2 (Option)
13:20	Technical Session M-OS1-2 Electromagnetic systems 2 A-OS2-2 Health monitoring, diagnosis 2 J-OS2-2 Noise and vibration control 2	Technical Session A-OS1-1 Vibration and acoustical analysis 1 J-OS5 Dynamics of cell manipulation and drug delivery A-OS6 Flow induced vibrations M-OS4-2 Autonomous and Intelligent Systems 2	Technical Session A-OS3 Nonlinear dynamics M-OS2-3 Vehicle dynamics and control 3 J-OS4-3 Human sensing and modeling 3	
13:40				
14:00				
14:20				
14:40				
15:00	Coffee Break			
15:20	Technical Session M-OS3 Nonlinear control theory and applications M-OS6 Measurement and control for agricultural machinery J-OS2-3 Noise and vibration control 3	Technical Session A-OS1-2 Vibration and acoustical analysis 2 A-OS4 Signal processing M-OS7 Dynamics and control of space robots	Technical Session M-OS2-4 Vehicle dynamics and control 4 J-OS4-4 Human sensing and modeling 4	
15:40				
16:00				
16:20				
16:40				
17:00				
17:20				
17:40				
18:00	Welcome Reception	Banquet		
18:20				
18:40				
19:00				
19:20				
19:40				
20:00				

Plenary Talk1

05-Aug, 2024

9:00 · 10:00

Past, Present & Future
--20th Anniversary of APVC's

Yoshihiro Narita
(Hokkaido University, Japan, Professor Emeritus)

The Asia Pacific Vibration Conference (APVC) is a biennial event that puts special emphasis on the field of vibration engineering and science. It has served as a platform for researchers at both universities and companies, engineers and practitioners to disseminate their latest findings. Actually, it started in 1985 as a part of “Kikai Rikigaku Kouenkai” (JSME domestic meeting on mechanical vibration) and since then, it has expanded as Asia Vibration Conference and later “Pacific” was added to broaden the covered areas. Nine countries and regions have been selected as conference venues. This conference is a pioneer of many international conferences titled as “Asia” or “Pacific” that have started later in JSME, and clearly the past huge success was brought by the researchers in the past and the cooperation with many researchers in Eastern and South-eastern Asian countries.
In this special lecture, it is hoped that we all have opportunities to look back the history of APVC’s to congratulate “Twentieth Anniversary”, and we analyze the issues that Asian researchers stand on and will solve for. Also, with young promising researchers here, we would like to contemplate the future of the conference and help us create new ideas in this rapidly changing World.

Plenary Talk2

06-Aug, 2024

9:00 · 10:00

Harnessing Piezoelectric Circuitry to Bridge the Mechanical and Electrical Domains for Vibration Energy Manipulation and Structural Health Monitoring

Jiong Tang
(University of Connecticut, USA, Professor)

Piezoelectric transducers feature two-way electromechanical coupling that can seamless join the mechanical and electrical domains together. One can directly integrate circuitry elements to piezoelectric transducers embedded in the host structure to favorably alter the structural dynamic behaviors for control and inverse analysis purposes. In this talk, the basic concept of piezoelectric circuitry is introduced, with example applications to passive and active vibration controls. Subsequently, two recent efforts will be presented in detail. In the first effort, periodically arranged locally resonant unit cells utilizing piezoelectric circuitry, known as piezoelectric metamaterials, are designed, analyzed, and experimentally validated to facilitate various wave manipulations in a structure. The challenges and progresses of mechatronic synthesis for piezoelectric metamaterials are highlighted. In the second effort, taking advantage of the tunable nature of piezoelectric circuitry, a new adaptive piezoelectric impedance based damage identification methodology is formed, which combines tunable circuitry synthesis with first-principle modeling, multi-objective optimization, and reinforcement learning. The talk is concluded by outlining remaining challenges and opportunities.

Venue

Nihon University, Surugadai campus

05-Aug, 2024

Room1, S101

8:50 ~ 9:00

Opening Ceremony

9:00 ~ 10:00

Plenary Talk

Yoshihiro Narita (Hokkaido University, Japan, Professor Emeritus)

「Past, Present & Future -- 20th Anniversary of APVC's」

10：20 · 11:40

M-OS1-1 Electromagnetic systems 1

Chair: Takeshi Mizuno (Saitama University)

5101 Modal vibration suppression strategy of magnetically suspended turbo molecular pump

○Runhui Yao (Nanjing University of Aeronautics and Astronautics), Jin Zhou, Yuanping Xu, Yue Zhang, Yonghui Wang

5102 Magnetic levitation mechanism for non-contact materials testing machine

○Takenori Suzuki (Kochi University of technology), Koichi Oka

5103 Control of a flexible rotor by hybrid active magnetic bearings using feedback of the tilt angle of the rotor

○Satoshi Ueno (Ritsumeikan University), Kosuke Goto, Chengyan Zhao

5104 Optimization of Control Parameters for Vibration Suppression of Structures using Magnetic Levitation System

○Tsukuru Tanaka (Ritsumeikan University), Satoshi Ueno, Chengyan Zhao

05-Aug, 2024

Room1, S101

13:20 · 14:20

M-OS1-2 Electromagnetic systems 2

Chair: Satoshi Ueno (Ritsumeikan University)

5105 Modification and Parameter Identification of Control System for Active Seismometer and Its Performance Evaluation Aiming to Put it into Practical Use

○Amon Yoshida (Nihon University), Toru Watanabe, Kaichi Negishi, Kazuma Miyazaki

5106 Nonlinear resonance of an energy harvester using magnetic repulsive forces

○Soichiro Osuga (Meiji University), Akira Saito

5107 Study on the effects of restoring force in mass measurement using relay feedback of displacement

○Takeshi Mizuno(Saitama University), Reo Tanaka, Soichiro Yokota, Yuji Ishino, Masaya Takasaki

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Room1, S101

15:20 · 17:20

M-OS3 Nonlinear control theory and applications

Chairs: Makoto Yokoyama (Niigata University), Toshiki Oguchi (Tokyo Metropolitan University)

5108 Circular path following control of sampled-data two-wheeled mobile robots

○Hitoshi Katayama (The University of Shiga Prefecture), Kohei Hayashi

5109 Distributed State Estimation Using Asynchronous Sampled-data

○Shunsuke Azuma (Tokyo Metropolitan University), Toshiki Oguchi

5110 Vehicle following control with state estimation of the leading vehicle based on V2V communication

○Rika Kogure (Tokyo Metropolitan University), Toshiki Oguchi

5111 Active steering system for motorcycles using single DC motor and active damper

Makoto Yokoyama (Niigata University), ○Ryohei Kamata

5112 Tracking Control of Autonomous Vehicles via Backstepping Method with Dynamic Surface Control

Makoto Yokoyama (Niigata University), ○Koji Nishikawa

5113 Development of weeding robot for rice paddy fields -Mathematical model for controller design-

Makoto Yokoyama(Niigata University), ○Ryogo Nonaka

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Room3, S303

10:20 · 12:00

A-OS2-1 Health monitoring, diagnosis 1

Chairs: Yusuke Mochida (The University of Waikato), Yong-Hwa Park (Korea Advanced Institute of Science and Technology)

5201 The crack location index for crack detection of a beam.

○Yusuke Mochida (The University of Waikato), Xutao Sun

5202 Application of a pantograph contact force measurement method using sparse modelling to simple catenary

○Takayuki Usuda (Railway Technical Research Institute), Masaki Takahashi(Keio University), Yoshitaka Yamashita(Railway Technical Research Institute)

5203 A Surrogate Model for Condition Monitoring of Structures with a Crack using Proper Generalized Decomposition (PGD) and Deep operator neural network (DeepONet)

○Dae-Guen Lim (Korea Advanced Institute of Science and Technology), Kang-Jae Park, Jun-Ho Kim, Yong-Hwa Park

5204 Estimation of Structural Crack Severity Using Multiscale 1D Convolution Neural Network

○Junho Kim (Korea Advanced Institute of Science and Technology), Daeguen Lim, Wonho Jung, Kang-Jae Park, Yong-Hwa Park

5205 Motor Fault Diagnosis Using Deep Learning and Time-Series Imaging Method

○Wonho Jung (Korea Advanced Institute of Science and Technology), Yong-Hwa Park

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Room3, S303

13:20 · 15:00

A-OS2-2 Health monitoring, diagnosis 2

Chairs: Hongli Ji (Nanjing University of Aeronautics and Astronautics), Tomohiro Yokozeki (The University of Tokyo)

5206 Dynamic Weighted Graph Neural Network with convoluted time signals for impact force reconstruction and localization on helicopter airframe

○Chun Huang (University of Aeronautics and Astronautics), Chongcong Tao, Hongli Ji, Jinhao Qiu

5207 Identification of gust based extended Kalman filter using simulated flight data

○Shujie Lu (State Key Laboratory of Mechanics and Control for Aerospace Structures, Nanjing), Hongli Ji(College of Aerospace Engineering, University of Aeronautics and Astronautics), Jinhao Qiu

5208 Gait Analysis while Holding onto Furniture with Hemiplegic Stroke Patients

○Ami Ogawa (Keio University), Mone Iwami, Masaki Takahashi, Masatomo Shibata(Nagasaki Rehabilitation Hospital), Kenji Ogawa, Masaki Kurihara, Hiroshi Nagaoka(Paramount Bed Co., Ltd.), Hisanori Yamazaki

5209 Characterization of Lamb wave propagation in CFRP plates with a stiffener

○Mamoru Suyama (Shibaura Institute of Technology), Masakatsu Mita, Léa A.C. Lecointre (The University of Tokyo), Ryo Higuchi, Tomohiro Yokozeki, Shin-ichi Takeda (Japan Aerospace Exploration Agency), Naoki Hosoya (Shibaura Institute of Technology)

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Room3, S303

15:20 · 17:00

M-OS6 Measurement and control for agricultural machinery

Chairs: Ayanori Yorozu (University of Tsukuba), Liangliang Yang (Kitami Institute of Technology)

5210 Detection and Estimation of the grapes and cutting and gripping position for a grape robot harvester

○Liangliang Yang (Kitami Institute of Technology), Tomoki Noguchi, Yohei Hoshino, Yuki Fujii, Tomoya Segawa, Shouta Sasaya

5211 Design and experiment of a suction-clamp integral soft end-effector for harvesting spherical fruits

○Guangrui HU (Northwest A&F University, Xi' an Technological University), Jianguo ZHOU (Northwest A&F University), Yu CHEN (Northwest A&F University,) and Jun CHEN (Northwest A&F University)

5212 Design and verification of a direct injection static mixer

○Yuxiang Chen (Northwest A&F University), Peijie Guo, Jun Chen, Shuo Zhang, Yu Chen

5213 Vibration Response Characteristics of Red Jujube Trees

○Anxiang Huang (Zhejiang A&F University), Chenhao Yu, Zhouzhou Zheng(Northwest A&F University), Ayanori Yorozu(University of Tsukuba), Yaohua Hu(Zhejiang A&F University)

5214 A towed transport robot that takes into consideration traveling between furrows

○Kanata Ohtani (Kochi University of technology), Koichi Oka

5215 Path planning with switchback in narrow space for agricultural robot

○Kota Sakamoto (University of Tsukuba), Yaohua Hu (Zhejiang A&F University), Akihisa Ohya (University of Tsukuba), Ayanori Yorozu

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Room4, S304

10:20 · 12:00

J-OS2-1 Noise and vibration control 1

Chairs: Yushin Hara (Tohoku University), Moon Kyu Kwak (Dongguk University)

5301 Sway control of container by active mass damper

○Joon-Ho Yoon (Dongguk University), Dae Woong Kim, Soo-Min Kim, Moon Kyu Kwak

5302 Enhancing acceleration reproducibility in Stewart platform shaking tables via actuator-mounted force sensor compensation

○Ryo Hosoda (Solutions Inc), Yasutaka Tagawa(Tokyo University of Agriculture and Technology)

5303 Semi-Active Vibration Suppression of Multiple-Degree-of-Freedom Flexible Structures Using Magnetostrictive Transducers

○An Li (Tohoku University), Yuusuke Kobayashi, Yushin Hara, Kanjuro Makihara

5304 Investigation of an AMD control method based on model predictive control using a mode response

○Naoto Yoshida (Shimizu Corporation), Yuta Tomiyoshi, Akira Fukukita, Masaki Takahashi (Keio University)

5305 Model-free sequential design of distributed vibration absorbers

Hangxing Li (The Hong Kong Polytechnic University), Waion Wong, ○Li Cheng

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Room4, S304

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J-OS2-2 Noise and vibration control 2

Chairs: Toshihiko Komatsuzaki (Kanazawa University), No-Cheol Park (Yonsei University)

5306 Analysis and evaluation method of tire breakaway noise using single slit tire

○Takafumi Yokoyama (Doshisha University), Nobutaka Tsujiuchi, Akihito Ito, Ryo Tesaki

5307 Active quasi-preview vibration control of structural systems under seismic disturbances using adaptive filters and remote waveform observations

Shinya Fujimura (Sony Global Solutions Inc.), Tomohiro Watanabe(Niigata University), ○Kazuhiko Hiramoto

5308 Active cancelling of a high frequency multi-tonal cabin noise using an adaptive notch-filter based controller

○Haruki Taniguchi (Kanazawa University), Toshihiko Komatsuzaki, Shigeki Usui (KOMATSU Ltd), Hirohumi Wada, Naoki Kimura, Kenichi Muramoto, Hiroyuki Yoshida, Shuichi Osawa

5309 Deflection control of sound waves using a passive waveguide array

○Ayumu Mishima (Kanazawa University), Toshihoko Komatuzaki, Hiroki Niho (Hosiden Corporation)

5310 Calculation of the vibration response of the plate excited by piezoelectric actuator based on Frequency Based Substructuring

○Wheejae Kim (Yonsei University), Young-jin Park, No-Cheol Park

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15:20 · 17:00

J-OS2-3 Noise and vibration control 3

Chairs: Tsuyoshi Inoue (Nagoya University), Tian Ran Lin (Qingdao University of Technology)

5311 A secondary path identification algorithm to reduce the phase error of the control signal in a feedforward ANC system

○Tian Ran Lin (Qingdao University of Technology), Zhu Jie Feng

5312 Broadband sound absorbers with series-coupled perforated panels using Helmholtz-resonance and plate vibration

○Nozomu Fujimoto (Industrial technology center of Okayama prefecture), Akira Sanada, Suguru Takata (Minoru Kasei Co., Ltd.)

5313 Understanding the Acoustic Characteristics of Bent Ducts

○Katsuhiko Kashihara (Tokushima Bunri University Graduate School), Kunihiko Ishihara

5314 Estimation and experiment of the sound absorption coefficient of foam sound-absorbing material (Estimation of sound absorption coefficient using CT scan images)

○Shuichi Sakamoto (Niigata University), Kaito Tanabe, Koki Maruyama, Takamasa Sato(Fukoku Co., Ltd)

5315 The effects of stiffness on the performance of centrifugal double pendulum vibration absorber

○Xingyu Zhou (Nagoya University), Tsuyoshi Inoue, Akira Heya

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Room1, S101

9:00 ~ 10:00

Plenary Talk

Jiong Tang (University of Connecticut, USA, Professor)

「Harnessing Piezoelectric Circuitry to Bridge the Mechanical and Electrical Domains for Vibration Energy Manipulation and Structural Health Monitoring」

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Room2, S302

10:20 - 11:40

J-OS3 Multibody dynamics

Chairs: Taichi Shiiba (Meiji University), Yoshiki Sugawara (Aoyama Gakuin University)

6201 Study on Posture Control of Automobile Occupant Using Simplified Human Model

○Yuki Akui (Sophia University), Keito Matsumoto, Shoichiro Takehara

6202 Dynamic analysis of a large-scale tensegrity robot arm using a pre-existing trajectory

○Tomoki Miyagi (Nihon University)

6203 A Study on Effect of Track and Vehicle Factors on Wheel Load Variation over Short Wavelength Rail Roughness

○Tatsushi Karasawa (Central Japan Railway Company), Yoshiyuki Minami, Shoichiro Takehara (Sophia University), Yoshiaki Terumichi

6204 Constraint force in focus: An efficient Hamiltonian dynamic analysis for flexible multibody systems

○Shuonan Dong (Tohoku University), Ryo Kuzuno, Keisuke Otsuka, Kanjuro Makihara

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A-OS1-1 Vibration and acoustical analysis 1

Chairs: Shinya Honda (Hokkaido University), Junji Yoshida (Osaka Institute of Technology)

6205 Vibration characteristics of carbon fiber composites prepared by electrodeposition resin molding method

○Md Tansirul Islam (Hokkaido University), Shinya Honda, Kazuaki Ktagiri (Hiroshima University), Katsuhiko Sasaki (Hokkaido University), Ryo Takeda

6206 Vibration control using vibration energy transmissibility of two-degree-of-freedom system with coupling damper

○Kai Kurihara (Kanagawa University), Toru Yamazaki

6207 Obtaining correct high contributing vibration behavior through segmented measurements

○Toki Miyaishi (Osaka Institute of Technology), Junji Yoshida

6208 Extraction of high contributing acoustical modes using principal component contribution analysis

○Reo Matsui (Osaka Institute of Technology), Junji Yoshida

6209 A study of sound attenuation in a multi-layer ribbed panel-cavity system using Helmholtz resonators

○Tian Ran Lin (Qingdao University of Technology), Kai Zhang, Hui Guo (Qingdao Huanghai University)

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A-OS1-2 Vibration and acoustical analysis 2

Chairs: Keisuke Yamada (Kansai University), Shigeo Kotake (Mie University)

6211 Dynamic damper for a system which is subjected to harmonic oscillator heat bath noise

Kei Tagawa (National Institute of Technology, Tokyo College), Shigeo Kotake(Mie University), ○Soichiro Takata (National Institute of Technology, Tokyo College)

6212 Vibration Analysis of Polar-orthotropic Shallow Spherical Shell under General Boundary Conditions

○Yoshihiro Narita (Hokkaido University (Professor Emeritus))

6213 Inverse analysis of a cantilever beam using the projection filter and fundamental mode information

Tatsuya Yoshida (University of Fukui), ○Hayato Ozaki, Ayumu Shiratsuji

6214 Computer vision-aided acoustic beamforming for abnormal sound recognition on an air-conditioner production line

○Jin Kim (Korea Advanced Institute of Science and Technology), Byeong-Yun Ko, Yong-Hwa PARK

6215 Extraction of traveling waves from standing waves using modal analysis without Gibbs phenomenon

○Keisuke Yamada (Kansai university)

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10:20 · 12:00

A-OS5 Vibration applications

Chair: Kai Wang (Hunan University)

6301 Vibration reduction of platform structure using a periodically distribution vibration absorber group with frequency mistuning

○Qian Ding (Tianjin University), Xusheng Liu, Mengxin He

6302 Dynamic Analysis of a Quasi-Zero-Stiffness-Enabled Piezoelectric Energy Harvester

○Tingtign Chen (Hunan University), Kai Wang, Jiaxi Zhou

6303 Particle size estimation of ground materials in a ball mill by machine learning using radiated sound

Tatsuya Yoshida (University of Fukui), ○Kazushi Nakano

6304 Parameter Optimization by Using Genetic Algorithm and Evaluation of Each Parameter on Performance for Connected Control Method

○Shuma Yamashita (Nihon-University), Toru Watanabe, Han Zuiqin, Wu Zhenlong

6305 Nonlinear characteristic analysis and experiment of air spring with auxiliary chamber

○Lingxi ZHOU (Northwest A&F University), Yuxiang CHEN, Peijie GUO, Chenwei HU, Jiayu CAO and Yu CHEN

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13:20 · 14:00

J-OS5 Dynamics of cell manipulation and drug delivery

Chair: Yuta Kurashina (Tokyo University of Agriculture and Technology)

6306 Effect of ultrasound on cultured cells: overview and our current trial using a torsional ultrasound transducer

○Chikahiro Imashiro (The University of Tokyo), Tatsuki Sasamura, Takeshi Morita

6307 Cell Seeding Method with PDMS Coating for Observation of Cell Maturation by Surface Acoustic Wave

○Shun Koda (Tokyo University of Agriculture and Technology), Yuta Kurashina

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Room3, S303

14:00 · 14:40

A-OS6 Flow induced vibrations

Chair: Hiromitsu Hamakawa (Oita University)

6308 Acoustic resonance and vortex shedding from normal square tube array

Hiromitsu Hamakawa (Oita University), ○Takeo Ozeki, Eru Kurihara, Eiichi Nishida (Shonan Institute of Technology)

6309 Suppression of flow-induced vibration of a flexible and extendable nozzle

Yi Zeng (Nanjing University of Science and Technology), ○Wei Huang, Jinsheng Xu, Yingkun Li, Xiong Chen

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Room3, S303

15:20 · 16:40

A-OS4 Signal processing

Chairs: Nobuhiko Henmi (Shinshu University), Yuki Kato (Kochi University of Technology)

6310 Diagnostic method for bearing failure at very low rotation speeds utilizing a piezoelectric jerk sensor and VMD algorithm

○Jirasak Siripokharattana (Shinshu University), Ryo Akahane, Nobuhiko Henmi

6311 Multi-channel active noise control filter estimation using a Kronecker product decomposition

○Hakjun Lee (Korea Advanced Institute of Science and Technology), Youngjin Park

6312 Vibration measurement of automobile engine and body using digital image correlation and compressed sensing

○Yuki Kato (Kochi University of Technology), Soma Watahiki (Kozo Keikaku Engineering Inc.), Masayoshi Otaka (Ono Sokki Co., Ltd.)

6313 Sparse Representations of Frequency Response Functions applied to Experimental Modal Analysis

○Shogo Shimada (Meiji University), Akira Saito

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Room4, S304

10:20 · 11:40

M-OS4-1 Autonomous and Intelligent Systems 1
Chairs: Yohei Hoshino (Kitami Institute of Technology)

6401 Data reduction for 3D point cloud data using separating hyperplane theorem

○Yusuke Taniuchi (Kitami Institute of Technology), Yohei Hoshino, Liangliang Yang

6402 Development of a drone simulator to consider aerodynamic effects in confined spaces

○Shogo Fujita (Chiba University), Satoshi Suzuki, Ryo Shirakawa (SOLIZE Corporation), Yuto Takagi, Tetsuya Nagayama

6403 Research on indoor navigation and autonomous flight of UAVs using RIO

○Yano Shota (Chiba University), Suzuki Satoshi

6404 Research on energy-efficient flight control for fixed-wing UAV

○Mizuki Yokota (Chiba University), Satoshi Suzuki

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Room4, S304

13:20 · 14:20

M-OS4-2 Autonomous and Intelligent Systems 2

Chair: Koichi Oka (Kochi University of Technology)

6405 Proactive reference trajectory planner for vibration suppression caused by set-point trajectory updates

○Kazuyuki Hayashide (Keio University), Masaki Takahashi

6406 Proposal of safety envelope for automated driving system to reduce traffic accidents

○Mingwei Gao (Keio University), Hidekazu Nishimura

6407 Designing an extending pneumatic actuator using the Yoshimura origami pattern

○Zinat Tasneem (Kochi University of Technology), Koichi Oka

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Room4, S304

15:20 · 17:00

M-OS7 Dynamics and control of space robots

Chairs: Masatsugu Otsuki (Japan Aerospace Exploration Agency), Takao Maeda (Tokyo University of Agriculture and Technology)

6408 Release control system of flexible net with actuators for space debris removal

○Ko Ota (Keio University), Masaki Takahashi

6409 A navigation system for active removal of upper-stage rocket bodies using an event camera

○Shingo Murayama (Keio University), Masaki Takahashi, Seisuke Fukuda (Japan Aerospace Exploration Agency)

6410 Optimization of multi-linkage hopping mechanism considering ground condition's change for robust design

○Rio Makino (Tokyo University of Agriculture and Technology), Takao Maeda

6411 Evaluation of microgravity landing dynamics of Martian Moons Exploration (MMX) spacecraft

○Masatsugu Otsuki (Japan Aerospace Exploration Agency), Mitsuhisa Baba, Takane Imada, Takao Maeda (Tokyo University of Agriculture and Technology), Takehiro Himeno (The University of Tokyo), Masaki Takahashi (Keio University), Genya Ishigami, Shingo Ozaki (Yokohama National University), Taizo Kobayashi (Ritsumeikan University), Masahiro Nohmi (Shizuoka University)

6412 Changes in the flying robot program in Department of Mechanical and Aerospace Engineering, Nagoya University

○Susumu Hara (Nagoya University), Ryosuke Nakamura

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Room2, S302

09:00 · 10:20

J-OS1-1 Dynamics modeling and analysis 1

Chairs: Takahiro Tsuchida (Tokyo Institute of Technology), Chendi Zhu (Ningbo Institute of Dalian University of Technology)

7201 Transient response analysis of a non-Gaussian randomly excited system using the equivalent non-Gaussian excitation method and the Hermite moment model

○Takahiro Tsuchida (Tokyo Institute of Technology)

7202 Multidisciplinary design optimization of curvilinear fiber path for composite laminated plate/shell

○Xin Wang (Hokkaido University), Isamu Saiwaki, Shinya Honda, Ryo Takeda, Katsuhiko Sasaki

7203 Numerical study on the transient response of a bowed string

○Miwa Sueda (Saitama University), Yohei Onoda, Chiharu Tadokoro, Hiroki Mori (Kyushu University), Ken Nakano (Yokohama National University), Takuo Nagamine (Saitama University)

7204 Vibration analysis of laminated composite curved shells with various fiber orientations

○Chendi Zhu (Ningbo Institute of Dalian University of Technology), Gang Li, Jian Yang (University of Nottingham Ningbo China)

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Room2, S302

10:40 - 12:00

J-OS1-2 Dynamics modeling and analysis 2

Chairs: Takahiro Tsuchida (Tokyo Institute of Technology), Chendi Zhu (Ningbo Institute of Dalian University of Technology)

7205 Experimental Study on Unit Shape and Static Stability of Tensegric Robotic Arm

○Shota Yanagi (Nihon University), Toru Watanabe

7206 Simulation and Experimental Validation of Stator core for EV's Traction Motor

○Seonbin Lim (Yonsei University), Onemook Kim, No-cheol Park, Yeon-Jong Kim (Hyundai Motors Group)

7207 Inverse structural modification method to keep specific eigenpairs identical for model-based design of electric motors

○Masashi Inaba (Denso corporation), Yuichi Matsumura (Gifu University)

7208 Analysis and modeling of seated human behavior exposed to large-amplitude and low-frequency oscillation

○Ryuji Imai (Tokyo Metropolitan University), Gen Tamaoki, Kousuke Suzuki (NHK spring), Kazuhito Kato, Takuya Yoshimura (Tokyo Metropolitan University)

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Room2, S302

13:20 · 14:40

A-OS3 Nonlinear dynamics

Chairs: Akira Saito (Meiji University), Wei Dai (Huazhong University of Science and Technology)

7209 Micro-vibration mitigation performance of dual-power nonlinear energy sink

○Shengtao Zhang (Hunan University), Jiaxi Zhou

7210 Data-driven vibration analysis of nonlinear systems using extended dynamic mode decomposition

○Hideaki Namiki (Meiji University), Akira Saito

7211 Dynamics and force transmission analysis of 3DOF system with clearance.

Weiye Xu (Huazhong University of Science and Technology.), ○Wei Dai, Xiang Zhu, Tianyun Li, Jian Yang (University of Nottingham Ningbo.)

7212 Performance of an HSLDS-SMI isolator under primary mass deviation

○Muhammad Umair (Tsinghua University), Zhichao Hou

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Room3, S303

09:20 · 10:20

M-OS2-1 Vehicle dynamics and control 1

Chairs: Pongsathorn Raksincharoensak (Tokyo University of Agriculture and Technology), Yohei Fujinami (Tokyo University of Agriculture and Technology)

7301 Longitudinal Modeling of Half-Car for Suppression of Impact from Road Disturbance

○Masato Inoue (Graduate school of Keio university), Masaki Takahashi (Keio university)

7302 Half-car modeling and control to reproduce longitudinal motion during vehicle braking

○Shoichi Oshima (Keio university), Masato Inoue, Masaki Takahashi

7304 Suspension control with feedforward adaptive algorithm for motion sickness mitigation

○Jinwoo Kim (Seoul National University of Science and Technology), Kanghyun Nam (Yeungnam University), Seongjin Yim (Seoul National University of Science and Technology)

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Room3, S303

10:40 - 12:00

M-OS2-2 Vehicle dynamics and control 2

Chairs: Pongsathorn Raksincharoensak (Tokyo University of Agriculture and Technology), Yohei Fujinami (Tokyo University of Agriculture and Technology)

7305 Integrated vibration control for in-wheel motor driving vehicles based on torque coordination and motor suspension

○Zhihao Yu (Tsinghua University), Waqas Mehmood Baig, Hui Ma, Zhichao Hou

7306 MPC-based Motion Cueing Method Considering Dynamic Characteristics of 6-DOF Motion System

○Reiya Igosaki (Meiji University), Ryosuke Takahashi, Taichi Shiiba

7307 IDCS with Machine Learning Model for Tire-Suspension HILS

○Shunsuke Imada (Meiji University), Zhengliang Chen, Taichi Shiiba

7308 Cause for Drop-off of Left Rear Tires of Trucks due to Nut Loosening in Operation

○Yasumasa Shoji (YS Corporation LLC)

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M-OS2-3 Vehicle dynamics and control 3

Chair: Kimihiko Nakano (The University of Tokyo)

7309 Dynamic Pure-pursuit Path Stabilizer Based on the Rear Center of Percussion

○Wei Wang (Tokyo University of Agriculture and Technology), Yuta Hishinuma, Hiroshi Mouri, Pongsathorn Raksincharoensak

7310 Synthesis of representative virtual driving domains for simulative testing of automated vehicles

Gerrit Brandes (TU Braunschweig), ○Lars Erxleben, Torben Hegerhorst, Roman Henze

7311 Tilt angle design considering air reservoir pressure constraints of air spring car-body tilting control system

○Hiroya Fujii (Nihon University), Masahiko Aki

7312 Motion Planning and Control of Low-Speed Autonomous Vehicles Based on Social Force Model

○Yohei Fujinami (Tokyo University of Agriculture and Technology), Shimon Miyagi, Pongsathorn Raksincharoensak

7313 Obstacle avoidance path planning and real-time vehicle tracking control with consideration of acceleration and deceleration

○Tomodai Okano (Tokyo University of Agriculture and Technology), Yasutaka Tagawa

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M-OS2-4 Vehicle dynamics and control 4

Chairs: Hiroki Nakamura (Japan Automobile Research Institute), Pongsathorn Raksincharoensak (Tokyo University of Agriculture and Technology)

7314 Analysis of concrete guidance's influence on human drivers' overtaking performance

○Ryo Hasegawa (Japan Automobile Research Institute), Hiroki Nakamura, Genya Abe, Sou Kitajima, Kimihiko Nakano (The University of Tokyo)

7315 Control of Proactive Braking System for Preventing Collision in Right Turn Across Path Scenario

○Kento Kawabata (Tokyo University of Agriculture and Technology), Sota Aoki, Pongsathorn Raksincharoensak, Yohei Fujinami

7316 Human-machine interfaces to assist drivers with audio and visual warnings under multi-emergency circumstance

○Bo Yang (Kyushu Institute of Technology), Tiezhen Guo(The University of Tokyo), Kimihiko Nakano

7317 Investigating Intention and Focus in Human-Vehicle Interaction for an Autonomous Stand-Up Personal Mobility Vehicle

○Chihiro Nakagawa (Osaka Metropolitan University), Yuto Yagi, Atsuhiko Shintani

7318 Analysis of driver behaviors while interacting with automated mobile robot in shared space

○Bo Yang (Kyushu Institute of Technology), Chenchang Li (The University of Tokyo), Muhua Guan, Kimihiko Nakano

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09:20 · 10:20

J-OS4-1 Human sensing and modeling 1

Chairs: Ryo Eguchi (CyberAgent)

7401 Development of System for Study on Human Recognition Influenced by Changing Button-push Sensation - 4th Report: Improvement of Voice Coil Motor -

○Yasuhiro Ono (Saitama University), Masaya Takasaki, Yuji Ishino, Takashi Mizuno

7402 Error Analysis of Heart Rate Variations in Aortic Pressure Waveform Estimation using DeepONet-based Surrogate Model

○Junki Hong (Korea Advanced Institute of Science and Technology), Changhee Min, Bomi Lee, Adelle Ria Persad, Jae-Hak Jeong, Hyunwoo Song, Yong-Hwa Park

7403 Ballistocardiogram measurement and a noise reduction by using the blind source separation

○Nobuaki Motofusa (Kanazawa University), Toshihiko Komatuzaki , Koji Kaneda (Toyota Boshoku Corporation), Masayuki Toyama, Keisuke Onoda, Wataru Hayasi

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10:40 - 11:20

J-OS4-2 Human sensing and modeling 2
Chair: Masaya Takasaki (Saitama University)

7405 Blood pressure measurement based on Korotkoff sounds using wavelet transform and CNN

○Bomi Lee (Korea Advanced Institute of Science and Technology), Changhee Min, Junki Hong, Adelle Ria Persad, Jae-Hak Jeong, Hyunwoo Song, Yong-Hwa Park

7406 Frequency tracking and reduction of physiological tremor using an adaptive notch filter-based controller

○Kosei Kaneko (Kanazawa University), Toshihiko Komatsuzaki, Daiki Tajiri (Toyohashi University of Technology), Shozo Kawamura

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J-OS4-3 Human sensing and modeling 3

Chairs: Akihito Ito (Doshisha University), Saori Morino (Osaka Metropolitan University)

7408 Evaluation system for synchronization of rhythm in songs and movement in Pom dance

○Aine Koyama (Keio University), Masaki Takahashi

7409 Tidy-up Indicator Suggestion and Measurement

○Kaoru Mitsuhashi (Teikyo University)

7410 Objective measurement and evaluation of the influence of lighting on behavior in a limited spaces

○Karin Yoshino (Keio University), Masaki Takahashi

7411 Teaching piano performance based on motion analysis using inertial sensors

○Yuta Usami (Doshisha University), Yusaku Takehara, Akihito Ito, Nobutaka Tsujiuchi, Keisuke Kitano (Tokyo University of Science)

7412 Development and operational verification of a lower limb rehabilitation device for preventing sarcopenia

○Yusuke Imanishi (Doshisha University), Nobutaka Tsujiuchi, Akihito Ito, Tomoya Mukai

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J-OS4-4 Human sensing and modeling 4

Chairs: Motomichi Sonobe (Kochi University of Technology), Satoshi Ishikawa (Kyushu University)

7413 Impulse response of internal mass enclosed by protective structure (presence of penetrant strike)

○Katsutoshi Yoshida (Utsunomiya University), Yoshikazu Yamanaka

7414 Three-dimensional numerical model for vocal folds vibration

○Satoshi Ishikawa (Kyushu University), Tianlan Xiong, Yogaku lee, Shinya Kijimoto

7415 Modeling of Human Center of Pressure Using a Viscoelastic-Supported Inverted Pendulum

○Yoshikazu Yamanaka (Utsunomiya University), Takashi Abe, Katsutoshi Yoshida

7416 Indirect tidal volume estimation using patch-type photoplethysmography sensor

○Yukino Ota (Keio University), Tomoki Yoshida (Signtle Inc.), Yasuhide Nomura, Masato Tsuji, Hiroshi Nagaoka, Masaki Takahashi (Keio University)

7417 Evaluation of balance control strategies from force platform and inertial sensor measurements

○Motomichi Sonobe (Kochi University of Technology)