

# **The 15th International Conference on Motion and Vibration Control (MoViC2020) 8th - 11th December 2020 - Provisional Program –**

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## **A. Civil and Infrastructure Systems (3 Presentations)**

A simple approach to estimate physical parameters of single-degree-of-freedom structures under earthquake excitations, Enokida, Ryuta(International Research Institute of Disaster Science, Tohoku University), Kajiwara, Koichi(E-Defense, National Research Institute for Earth Science and Disaster Resilience), Paper ID:10045

Application of mixed reality technology in hammering inspection work, Hatori, Shuntaro(National Institute of Technology, Nagaoka College), Ikeda, Fujio(National Institute of Technology, Nagaoka College), Murakami, Yuki(National Institute of Technology, Nagaoka College), Toyama, Shigehiro(National Institute of Technology, Nagaoka College), Paper ID:10049

An automatic detection method for concrete defects based on self-organizing map for rotary hammering test, Matsui, Naoki(Department of Mechanical Engineering, Graduate School of Engineering, University of Fukui), Kuratani, Fumiyasu(Department of Mechanical Engineering, Faculty of Engineering, University of Fukui), Yoshida, Tatsuya(Department of Mechanical Engineering, Faculty of Engineering, University of Fukui), Hasebe, Yuya(Department of Mechanical Engineering, Graduate School of Engineering, University of Fukui), Paper ID:10054

## **B. Vehicle and Transportation Systems (15 Presentations)**

Propose of Active Suspension under Reference-input Modification Using Vibration Manipulation Function, Nakajima, Taro(Mie University), Kotake, Shigeo(Mie University), Paper ID:10041

Reference-input modification for finite-time settling control of rotational pendulum along vibration manipulation function, Hirai, Shota(Mie University), Okamura, Daichi(Mie University), Fujita, Yuki(Mie University), Kotake, Shigeo(Mie University), Paper ID:10051

The current collection performance of multi-segment pantograph head, Usuda, Takayuki(Railway Technical Research Institute), Mitsumoji, Takeshi(Railway Technical Research Institute), Nagao, Kyohei(Railway Technical Research Institute), Isono, Tatsushi(Railway Technical Research Institute), Hirakawa, Hiromasa(Railway Technical Research Institute), Takahashi, Masaki(KEIO University), Wakabayashi, Yusuke(East Japan Railway Company), Paper ID:10061

Displacement and acceleration feedback controller design for automated driving tram, Shimono, Keisuke(Institute of Industrial Science, the University of Tokyo), Chamniprasart, Kritditorn(Institute of Industrial Science, the University of Tokyo), Yang, Bo(Institute of Industrial Science, the University of Tokyo), Nakano, Kimihiko(Institute of Industrial Science, the University of Tokyo), Suda, Yoshihiro(Institute of Industrial Science, the University of Tokyo), Paper ID:10073

Research on Rotational Vibration against Elevator Suspension Sheave, Fujii, Ayaka(Advanced Technology R and D Center, Mitsubishi Electric Corp.), Watanabe, Seiji(Advanced Technology R and D Center, Mitsubishi Electric Corp.), Kyue, Kazuhiro(Inazawa Works, Mitsubishi Electric Corp.), Paper ID:10075

Vibration control system for comfortable drive - fundamental consideration on masking method, Ikeda, Keigo(Course of Science and Technology, Tokai University), Ohta, Takahiro(Course of Mechanical Engineering, Tokai University), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Narita, Takayoshi(Department of Prime Mover Engineering, Tokai University), Paper ID:10076

Lane changing and merging support system with adaptive cruise control, Nishiwaki, Kazuhiro(Mitsubishi Electric Corporation), Iezawa, Masahiro(Mitsubishi Electric Corporation), Takahashi, Masaki(Keio University), Paper ID:10083

Avoiding Resonance between Building Sway and Elevator Rope Based on Negative Stiffness, Saito, Eiichi(Mitsubishi Electric Corp.), Watanabe, Seiji(Mitsubishi Electric Corp.), Fukui, Daiki(Mitsubishi Electric Corp.), Paper ID:10093

Measurement of dynamic behavior of a driver on stand-up type PMV (Steering with intention and without intention), Suzuki, Sampei(Osaka Prefecture University), Paper ID:10096

Ride comfort control system considering driver's psychological state, Fundamental consideration on estimating method using biological measurement, Ohta, Takahiro(Course of Mechanical Engineering, Tokai University), Ikeda, Keigo(Course of Science and Technology, Tokai University), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Narita, Takayoshi(Department of Prime Mover Engineering, Tokai University), Paper ID:10097

Steer-by-wire system of ultra-compact EV considering driver - basic consideration on reaction force, Arai, Shugo(Course of Mechanical Engineering, Tokai university), Uchino, Daigo(Course of Mechanical Engineering, Tokai university), Liu, Xiaojun(Course of Science and Technology, Tokai university), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Narita, Takayoshi(Department of Prime Mover Engineering, Tokai University), Paper ID:10100

Vibration Control of Air Spring Type Tilting Train, Watanabe, Taichi(Department of Mechanical Engineering, College of Science and Technology, Nihon University), Aki, Masahiko(Department of Mechanical Engineering, College of Science and Technology, Nihon University), Paper ID:10105

Measurement of dynamic motion of a standing human on a PMV during braking, Nakagawa, Chihiro(Osaka Prefecture University), Nishimori, Kohei(Osaka Prefecture University), Murai, Akihiko(National Institute of Advanced Industrial Science and Technology), Paper ID:10107

Effect of variable resistance and capacitance on return loss of monitoring side antenna, Matsushita, Yusuke(Gosyokaido-cho, Matsugasaki, Sakyo-ku, Kyoto-shi, Kyoto), Paper ID: 10108

Influence of Delay Time on Driving Assistance System during Tire Burst, Yajima, Ryotaro(Department of Mechanical Engineering, Nihon University), Aki, Masahiko(Department of Mechanical Engineering, Nihon University), Horiuchi, Shinichiro(Department of Mechanical Engineering, Nihon University), Paper ID:10115

### **C. Robotics and Mechatronics (8 Presentations)**

Theoretical and Experimental Evaluation on Specific Stiffness of a Integrally-Shaped Lightweight Honeycomb Robotic Arm, Masuda, Masanori(Nihon University's Graduate School of Science and Technology), Chikui, Yuya(Nihon University's Graduate School of Science and Technology), Watanabe, Toru(Nihon University's Graduate School of Science and Technology), Paper ID:10037

The transformation of the Multistage Tensegric Arm that the tension gives to the unit, Kishikawa, Yuto(Nihon University), Sasaki, Syuntaro(Nihon University), Watanabe, Toru(Technology, Nihon University), Paper ID:10040

Development of automatic tomato-harvesting system using universal vacuum gripper and RGB-D camera, Oguma, Kazuya(National Institute of Technology, Nagaoka College), Higuchi, Shota(University of Tsukuba), Ikeda, Fujio(National Institute of Technology, Nagaoka College), Murakami, Yuki(National Institute of Technology, Nagaoka College), Toyama, Shigehiro(National Institute of Technology, Nagaoka College), Paper ID:10050

Reference Input Design for Dual-mode Vibration Suppression Control in 2DOF Horizontal Robot Arm, Miura, Kazuma(The University of Mie), Kotake, Shigeo(The University of Mie), Paper ID:10056

Experimental Static Stability Analysis of a Tensegric Robot Arm by using Scaled Model, Iino, Wataru(Nihon University's Graduate School of Science and Technology), Paper ID:10071

Theoretical study on mechanical stability of tensegric manipulator, Sasaki, Shuntaro(Nihon University's Graduate School of Science and Technology), Watanabe, Toru(Nihon University's Graduate School of Science and Technology), Paper ID:10106

Vibration suppression effect in an electromagnetic levitation system for flexible steel plate: experimental consideration on levitation performance using sliding mode control, Ogawa, Kazuki(Course of Science and Technology, Tokai University), Funada, Kohmei(Department of Prime Mover Engineering, Tokai University), Narita, Takayoshi(Department of Prime Mover Engineering, Tokai University), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Paper ID:10112

Development of an automatic lettuce harvester, Chida, Yuichi(Shinshu University), Okamiya, Yutaka(Shinshu University), Tamura, Masayoshi(Shinshu University), Takahashi, Yoshimasa(Shinshu University), Usui, Takumi(Shinshu University), Yoshimura, Tatsuya(Shinshu University), Fushiki, Tadao(Shinshu University), Nakai, Takayuki(Shinshu University), Narisawa, Yoshinori(Shinshu University), Usami, Tomoyuki(Shinshu University), Nishizawa, Takeshi(Shinshu University), Netsu, Eiji(Shinshu University), Uehara, Kazuhiko(Shinshu University), Paper ID: 10120

#### **D. Human, Sports and Biological Systems (4 Presentations)**

Motion analysis for prevention of falling during human Sit-to-Stand Motion, Shimizu, Hayata(Osaka Institute of Technology), Ikeda, Naoto(Osaka Institute of Technology), Tsujita, Katsuyoshi(Osaka Institute of Technology), Paper ID:10023

Personal balance modeling during standing on a moving board from force plate data, Sonobe, Motomichi(Kochi University of Technology), Naruta, Kazuki(Kochi University of Technology), Paper ID:10026

Finite element investigation of using cartilage plate with varying thickness in cartilage myringoplasty, Wu, Zhiqiang(The University of Shiga Prefecture), Kamitani, Kazuki(The University of Shiga Prefecture), Tanaka, Takashi(The University of Shiga Prefecture), Oura, Yasunori(The University of Shiga Prefecture), Paper ID:10094

Mitigation of hand tremor using an active mass damper driven by an adaptive notch-filter based controller, Komatsuzaki, Toshihiko(Institute of Science and Engineering, Kanazawa University), Hatanaka, Satoshi(Institute of Science and Engineering, Kanazawa University), Matsuda, Masashi(Institute of Medical, Pharmaceutical and Health Sciences, Kanazawa University), Tada, Kaoru(Institute of Medical, Pharmaceutical and Health Sciences, Kanazawa University), Paper ID:10119

#### **E. Aeronautical and Astronautical Systems (4 Presentations)**

An analysis of the mobility of a space exploration rover against variance of the gravity and movement speed, Nakayama, Ayana(Osaka Institute of Technology), Nishimura, Asumi(Osaka Institute of Technology), Tsujita, Katsuyoshi(Osaka Institute of Technology), Paper ID:10059

A study on estimation of spin motion of the decommissioned spacecraft using visual tracking, Miyazaki, Kanta(Osaka Institute of Technology), Tsujita, Katsuyoshi(Osaka Institute of Technology), Paper ID:10060

Vibration Suppression Control with Frequency Shaping for Mechanical Cooler of High Precision Observation Satellite, Shigeto, Shuhei(Japan Aerospace Exploration Agency, Tsukuba Space Center), Mitani, Shinji(Japan Aerospace Exploration Agency, Tsukuba Space Center), Bando, Nobutaka(Japan Aerospace Exploration Agency, Institute of Space and Astronomical Science), Fujimoto, Hiroshi(Department of Electronics and Electrical Engineering, The University of Tokyo), Hashimoto, Tatsuaki(Japan Aerospace Exploration Agency, Institute of Space and Astronomical Science), Paper ID:10084

Kite-Flying in High Altitude, Hiraki, Koju(Kyushu Institute of Technology), Takei, Ryosuke(Kyushu Institute of Technology), Murahashi, Reo(Kyushu Institute of Technology), Paper ID:10109

#### **F. Smart Structures and Smart Materials (10 Presentations)**

Robustness evaluation of structural vibration estimation by self-sensing harvester, Hara, Yushin(Tohoku University), Saito, Kensuke(Tohoku University), Takamoto, Ikuya(Tohoku University), An, Li(Tohoku University), Makihara, Kanjuro(Tohoku University), Paper ID:10001

Intellectual power generation by stand-alone active harvester with digital control unit, Hara, Yushin(Tohoku university), Mori, Erina(Tohoku university), An, Li(Tohoku university), Makihara, Kanjuro(Tohoku university), Paper ID:10010

How to increase the diamagnetic magnetic force of HOPG, Funatsu, Tsunamasa(Techno System CO., LTD), Komori, Mochimitsu(Kyushu Institute of Technology), Paper ID:10015,

Vibration suppression integrating semi-active control and model predictive control based on harmonic input, Takamoto, Ikuya(Department of Aerospace Engineering, Tohoku University), Abe, Mizuki(Department of Aerospace Engineering, Tohoku University), Hara, Yushin(Department of Aerospace Engineering, Tohoku University), Nakahara, Takeshi(Department of Mechanical Engineering, Kyushu Sangyo University), Makihara, Kanjuro(Department of Aerospace Engineering, Tohoku University), Paper ID:10019

Semi-active vibration suppression using skyhook-based control by a shear-type MR grease damper, Nagamatsu, Shuto(Yokohama National University), Shiraishi, Toshihiko(Yokohama National University), Paper ID:10030

Detection of Contact-type Failure by Measurement of Structural Intensity of Low-frequency Vibration Caused by Frequency Down-conversion of Elastic Vibrations, Tanaka, Takashi(University of Shiga Prefecture), Asano, Junnosuke(University of Shiga Prefecture), Oura, Yasunori(University of Shiga Prefecture), Wu, Zhiqiang(University of Shiga Prefecture), Paper ID:10036

Control of plantar height by an MR fluid brake for fall prevention of patients with walking disabilities, Morimura, Kohei(Graduate School of Environment and Information Sciences), Yamamoto, Rieko(Graduate School of Environment and Information Sciences), Shiraishi, Toshihiko(Graduate School of Environment and Information Sciences), Paper ID:10067

Frequency matching of the centrifugal distance for optimizing the rotating-frequency-range by stabilizing nonlinear oscillations, Zhang, Yunshun(The University of Tokyo), Shi, Xiaoqing(Jiangsu University), Paper ID:10087

Energy and Phase Space Analyses of Response Stabilization Control for Nonlinear Wideband Vibration Energy Harvesting, Zayas, Natsuki(Division of Mechanodesign, Kyoto Institute of Technology), Masuda, Arata(Faculty of Mechanical Engineering, Kyoto Institute of Technology), Miura, Nanako(Faculty of Mechanical Engineering, Kyoto Institute of Technology), Paper ID:10131

Structure optimization of an asymmetrically conical pendulum for energy harvesting, Zhang, Yunshun(Automobile Engineering Research Institute, Jiangsu University), Wang, Wanshu(Automobile Engineering Research Institute, Jiangsu University), Paper ID:10132

## **G. Control Devices, Sensors and Actuators (6 Presentations)**

Active seismic sensor using digital control system and optimal feedback controller, Naruse, Tomohiro(Graduate school of Science and Technology, Nihon University), Watanabe, Toru(Department of Mechanical Engineering, College of Science and Technology, Nihon University), Seto, Kazuto(President, Seto Chartered Engineer Office), Paper ID:10008

Proposal of Accelerometer Using Zero-compliance Mechanism, Mizuno, Takeshi(Saitama University), Kawada, Hiroki(Saitama University), Ishino, Yuji(Saitama University), Takasaki, Masaya(Saitama University), Paper ID:10053

Improvement of Durability of Micro Tactile Sensor by Protection of Bonding-Wire with UV Curable Resin, Takahashi, Yuji(Niigata University), Takahashi, Takumi(Niigata University), Abe, Takashi(Niigata University), Noma, Haruo(Ritsumeikan University), Sohgawa, Masayuki(Niigata University), Paper ID:10072

Prototype of Cryogenic Pump Working in Liquid Nitrogen, Komori, Mochimitsu(Kyushu Institute of Technology), Paper ID:10089

Development of Magnetic Bearing Considering Temperature Drift on Displacement Sensor at Low Temperature, Kato, Hirohisa(Kyushu Institute of Technology), Komori, Mochimitsu(Kyushu Institute of Technology), Asami, Ken-ichi(Kyushu Institute of Technology), Sakai, Nobuo(Kyushu Institute of Technology), Paper ID:10095

Analysis of Deflection Behavior of Microcantilevers Embedded in Elastomer for Miniature Tactile Sensor, Kido, Jun(Niigata University), Abe, Takashi(Niigata University), Sohgawa, Masayuki(Niigata University), Paper ID:10102

## **H. Sound and Acoustics (4 Presentations)**

Noise reduction performance of active noise control with barrier using theoretical control filter, Lee, Sanghyeon(Department of Mechanical Engineering, KAIST), Park, Youngjin(Department of Mechanical Engineering, KAIST), Paper ID:10022

Coupled vibration analysis of acoustic field including flexible structures, Yamada, Keisuke(Kansai University), Paper ID:10062

Internal sound control for ultra-compact EV by using cowl, fundamental consideration on vibration characteristics of plate shaped part, Kato, Taro(Course of Science and Technology, Tokai University), Paper ID:10079

A study on interior sound design for ultra-compact EVs - fundamental consideration on quantitative evaluation by multi biological information for inside acoustic environment, Nakayama, Hiroya(Tokai University), Kato, Taro(Tokai University), Kato, Hideaki(Tokai University), Narita, Takayoshi(Tokai University), Paper ID:10091



## **I. Energy Management and Eco Systems (2 Presentations)**

Maglev vertical axis wind turbine using attractive type passive magnetic bearings and its position control, Ueno, Satoshi(Ritsumeikan University), Miyara, Yuki(Ritsumeikan University), Okamura, Kosuke(Ritsumeikan University), Jiang, Changan(Ritsumeikan University), Paper ID:10066

Development of an electrostatic induction energy harvester embedded in a mouthguard, Ichikawa, Kenta(Tokyo Institute of Technology), Matsumoto, Akira(Tokyo Institute of Technology), Hijikata, Wataru(Tokyo Institute of Technology), Paper ID:10082

## **J. Multibody Systems (4 Presentations)**

Flexible Multibody Dynamics Using Absolute Nodal Coordinate Formulation with Internal Constraint Equation, Otsuka, Keisuke(Tohoku University), Dong, Shuonan(Tohoku University), Hirotani, Shunsuke(Tohoku University), Kuzuno, Ryo(Tohoku University), Makihara, Kanjuro(Tohoku University), Paper ID:10003

Development of an efficient flexible dynamics model of a mobile crane with adaptive modal integration, Chalermpong, Kolawach(Department of Mechanical Engineering, Tokyo Institute of Technology, Japan), Hara, Kensuke(Faculty of Engineering, Division of Systems Research, Yokohama National University), Yamaura, Hiroshi(Department of Mechanical Engineering, Tokyo Institute of Technology, Japan), Paper ID:10039

Multibody Modeling Using Absolute Nodal Coordinate Plate Element for Deployable Aerospace Structures, Otsuka, Keisuke(Tohoku University), Dong, Shuonan(Tohoku University), Hirotani, Shunsuke(Tohoku University), Kuzuno, Ryo(Tohoku University), Makihara, Kanjuro(Tohoku University), Paper ID:10052

Vibration Control of Stacker Cranes utilizing Dynamic Interaction between Motion and Vibration, Iwamura, Makoto(Fukuoka University), Endo, Toru(Fukuoka University), Akahoshi, Yuta(Fukuoka University), Tabata, Kosuke(Fukuoka University), Paper ID:10117

## **K. Engineering Mechanics and Dynamics of Machinery (7 Presentations)**

Motion and Vibration Control for Suspended Stacker Crane Using Model Reference 2DOF, Murakami, Takeshi(MURATA MACHINERY, LTD), Osuka, Koichi(Osaka University), Paper ID:10011

Design of single axis pedal vibration simulators for development of equivalent comfort contours, Yoo, Junsun(Department of Mechanical Engineering, Yonsei University), Park, No-cheol(Department of Mechanical Engineering, Yonsei University), Paper ID:10044,

Application of force reconstruction based on an improved Tikhonov regularization scheme, Qiu, Yuqing(Nanjing University of Aeronautics and Astronautics), Qiu, Jinhao(Nanjing University of Aeronautics and Astronautics), Ji, Hongli(Nanjing University of Aeronautics and Astronautics), Paper ID:10047

The methodology of drop analysis for KORAD-21 spent fuel dry cask storage, Lee, Eunho(Department of Mechanical Engineering, Yonsei university), Lee, Sang-jeong(Department of Mechanical Engineering, Yonsei university), Lee, Changkyun(Department of Mechanical Engineering, Yonsei university), Park, No-cheol(Department of Mechanical Engineering, Yonsei university), Paper ID:10064

Response analysis of a system with a nonlinear spring under random excitation via complex fractional moment, Itoh, Daizoh(Department of Systems and Control Engineering, Tokyo Institute of Technology), Tsuchida, Takahiro(Department of Systems and Control Engineering, Tokyo Institute of Technology), Paper ID:10080

Basic study on collision motion control of falling weight object by using carbon fiber reinforced plastic - fundamental consideration on energy absorption performance, Narikawa, Kohei(Tokai University), Nishiyama, Kento(Tokai University), Kato, Hideaki(Tokai University), Narita, Takayoshi(Tokai University), Paper ID:10090

A study on collision energy absorption control of fast moving object - experimental consideration on deformation characteristics of energy absorption member, Nishiyama, Kento(Tokai University), Narikawa, Kohei(Tokai University), Kato, Hideaki(Tokai University), Narita, Takayoshi(Tokai University), Paper ID:10092

## **L. Rotor Dynamics and Control (2 Presentations)**

The basic control model of an active foil bearing, Brenkacz, Lukasz(Institute of Fluid Flow Machinery, Polish Academy of Sciences), Szewczuk-krypa, Natalia(Department of Ocean Engineering and Ship Technology, Gdansk University of Technology), Witanowski, Lukasz(Institute of Fluid Flow Machinery, Polish Academy of Sciences), Drosinska-komor, Marta(Department of Ocean Engineering and Ship Technology, Gdansk University of Technology), Paper ID:10033

On the effect of oil film characteristics in the starved bearing to subsynchronous vibration, Sugimura, Shojiro(Graduate School of Mechanical Engineering, Nagoya University), Inoue, Tsuyoshi(Graduate School of Mechanical Engineering, Nagoya University), Yabui, Shota(Graduate School of Mechanical Engineering, Nagoya University), Paper ID:10104

## **M. Electromagnetic Systems (7 Presentations)**

Control of magnetic suspension with elastic ferromagnetic substance for vibration isolation system, Ishino, Yuji(Saitama university), Mizuno, Takeshi(Saitama university), Takasaki, Masaya(Saitama university), Paper ID:10043

Nonlinear resonance-type electromagnetic vibration energy harvester excited by an impact ball, Sugita, Naohiro(Tokyo Institute of Technology), Kine, Makoto(Tokyo Institute of Technology), Han, Dong(Tokyo Institute of Technology), Shinshi, Tadahiko(Tokyo Institute of Technology), Kadota, Shogo(TDK Corporation), Paper ID:10065

Anti-Tilt and Zero-Power Control of A 3-DOF Magnetic Levitation System with HEMs, Zhao, Chuan(School of Mechanical Engineering, Shenyang University of Technology), Oka, Koichi(Department of Intelligent Mechanics and Aerospace Control, Kochi University of Technology), Harada, Akinori(Department of Intelligent Mechanics and Aerospace Control, Kochi University of Technology), Lin, James(Department of Intelligent Mechanics and Aerospace Control, Kochi University of Technology), Sun, Feng(School of Mechanical Engineering, Shenyang University of Technology), Paper ID:10070

Noncontact guide system for traveling continuous thin steel plate - fundamental consideration on control performance by positioning control in edge direction, Nakasuga, Ryo(Course of Science and Technology, Tokai University), Narawa, Yasuhiro(Course of Science and Technology, Tokai University), Ishihara, Sora(Course of Science and Technology, Tokai University), Yamaguchi, Ryo(Course of Science and Technology, Tokai University), Narita, Takayosi(Department of Prime Mover Engineering, Tokai University), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Paper ID:10098

Electromagnetic levitation transportation system using flexibility of thin steel plate, fundamental consideration on levitation performance, Shiina, Atsuki(Course of Mechanical Engineering, Tokai University), Bin Mohamad Kamal, Muhammad Nur Hakimi(Course of Mechanical Engineering, Tokai University), Ogawa, Kazuki(Course of Mechanical Engineering, Tokai University), Narita, Takayosi(Department of Prime Mover Engineering, Tokai University), Hideaki, Kato(Department of Prime Mover Engineering, Tokai University), Paper ID:10099

A study on dynamic performance of electromagnetically driven valve - basic consideration on thrust characteristics using electromagnetic field analysis, Suzuki, Ryo(Course of Mechanical Engineering, Tokai University), Sato, Yukinao(Course of Mechanical Engineering, Tokai University), Sugai, Kyosuke(Course of Mechanical Engineering, Tokai University), Narita, Takayoshi(Department of Prime Mover Engineering, Tokai University), Kato, Hideaki(Department of Prime Mover Engineering, Tokai University), Paper ID:10101

Proposal of electrical energy harvester using Ring-shape magnets and FeCo magnetic core, Nakai, Tomoo(Industrial Technology Institute, Miyagi Prefectural Government), Paper ID:10111

#### **N. Control Theories and Control System Design (8 Presentations)**

Updating final-state control methods taking input constraints at final time into account, Takeuchi, Shota(Nagoya University), Nakamura, Shun(Nagoya University), Hara, Susumu(Nagoya University), Miyata, Kikuko(Meijo University), Paper ID:10032

Development of periodic error suppression control in six-degrees-freedom parallel link shaking table, Matsumoto, Kento(Tokyo University of Agriculture and Technology), Matsuda, Hiroki(Tokyo University of Agriculture and Technology), Okamoto, Mineki(National Institute of Technology, Kisarazu College), Hosoda, Ryo(Solution Inc.), Omura, Tsuyoshi(Solution Inc.), Okada, Tetsuji(Central Research Institute of Electric Power Industry), Tagawa, Yasutaka(Tokyo University of Agriculture and Technology), Paper ID:10048

Semi-active vibration control of structural systems based on linear approximation of switched linear system, Sato, Kaoru(Graduate School of Niigta University), Hiramoto, Kazuhiko(Niigta University), Paper ID:10068

Semi-active vibration control for structural systems with a variable inertia damper, Yamazaki, Issei(Sanwa Tekki Corporation), Hiramoto, Kazuhiko(Niigata University), Paper ID:10074

Active vibration control based on evaluation of response spectrum for adjusting to time variation of earthquake characteristic, Ueda, Ryutaro(Kyoto Institute of Technology), Fujiwara, Ukyo(Kyoto Institute of Technology), Miura, Nanako(Kyoto Institute of Technology), Sone, Akira(Kyoto Institute of Technology), Paper ID:10078

Reinforcement learning based on backstepping approach for a wheeled mobile robot, Fuse, Ikuya(Graduate School of Science and Technology, Niigata University), Maruyama, Ibuki(Graduate School of Science and Technology, Niigata University), Yokoyama, Makoto(Faculty of Engineering, Niigata University), Paper ID:10113

Active seat suspension for ultra-compact vehicles - experimental consideration on vibration control system using feedback of acceleration, Endo, Ayato(Tokai University), Ikeda, Keigo(Tokai University), Ohta, Takahiro(Tokai University), Kato, Hideaki(Tokai University), Narita, Takayoshi(Tokai University), Paper ID:10116

An active steering system for motorcycles, Kuida, Akari(Graduate School of Science and Technology, Niigata University), Yokoyama, Makoto(Faculty of Engineering, Niigata University), Paper ID:10121

## **P. Other Topics related to Motion, Vibration and/or Control (12 Presentations)**

An Experimental Study of Stochastic Resonance Performance of Horizontal Large-Scale Bistable Model, Zhao, Wei(Weichai Global Axis Technology Co., Ltd), Zheng, Rencheng(Tianjin University), Zhao, Xilu(Saitama Institute of Technology), Nakano, Kimihiko(The University of Tokyo), Paper ID:10012

Vibration control of seismically excited structures using an inerter system device, Blandon-valencia, John(Department of Civil Engineering, Universidad Nacional de Colombia (Medellin)), Caicedo, Daniel(Department of Civil Engineering, Universidad Nacional de Colombia (Medellin)), Lara-valencia, Luis(Department of Civil Engineering, Universidad Nacional de Colombia (Medellin)), Farbiarz-farbiarz, Yosef(Department of Civil Engineering, Universidad Nacional de Colombia (Medellin)), Paper ID:10017

Vibration characteristics of carbon fiber reinforced composites fabricated by electrodeposition molding method, Takisawa, Hiraku(Hokkaido University), Hashimoto, Naoki(Hokkaido University), Honda, Shinya(Hokkaido University), Katagiri, Kazuaki(Osaka Research Institute of Industrial Science and Technology), Sasaki, Katsuhiko(Hokkaido University), Takeda, Ryo(Hokkaido University), Paper ID:10018

Effect of phase fluctuation and distance of smart gear on return loss of receiver antenna, Mac, Tung Thanh(Kyoto Institute of Technology), Paper ID:10020

Study on the Self-excited Vibration in Cylindrical Grinding Process., Yamaguchi, Yushi(Yamagata University), Onodera, Takimi(Yamagata University), Langthjem, Mikael A(Yamagata University), Kosawada, Tadashi(Yamagata University), Paper ID:10021

Vibration-based early detection of plastic gear faults using Fourier decomposition and deep learning, Bui, Kien Huy(Kyoto Institute of Technology), Iba, Daisuke(Kyoto Institute of Technology), Tsutsui, Yusuke(Kyoto Institute of Technology), Kajihata, Aoto(Kyoto Institute of Technology), Lei, Yue(Kyoto Institute of Technology), Miura, Nanako(Kyoto Institute of Technology), Iizuka, Takashi(Kyoto Institute of Technology), Masuda, Arata(Kyoto Institute of Technology), Sone, Akira(Kyoto Institute of Technology), Moriwaki, Ichiro(Kyoto Institute of Technology), Paper ID:10027

Vibration attenuation band transition in plate with different placements of 2D acoustic black holes, Han, Bing(State Key Laboratory of Mechanics and Control of Mechanical Structures, Nanjing University of Aeronautics and Astronautics), Ji, Hongli(State Key Laboratory of Mechanics and Control of Mechanical Structures, Nanjing University of Aeronautics and Astronautics), Qiu, Jinhao(State Key Laboratory of Mechanics and Control of Mechanical Structures, Nanjing University of Aeronautics and Astronautics), Cheng, Li(Department of Mechanical Engineering, Hong Kong Polytechnic University), Paper ID:10029

Modification of Vibration Power Generation System utilizing Lever Mechanism, Ichinose, Masato(Nihon University), Ube, Yoichiro(Nihon University), Numano, Takumi(Nihon University), Watanabe, Toru(Nihon University), Paper ID:10046

Parameter Estimation via Fokker-Planck Type Residual: Application to Linear Stationary Random Vibration, Yoshida, Katsutoshi(Department of Mechanical Systems Engineering, Utsunomiya University), Yamanaka, Yoshikazu(Department of Mechanical Systems Engineering, Utsunomiya University), Paper ID:10055

Acceleration and Spin Control System for In-Car Crib with Joint Application of Regular and Inverted Pendulum Mechanisms, Kawashima, Takeshi(Department of Mechanical Engineering, Kanagawa Institute of Technology), Matsui, Hiroyuki(Department of Mechanical Engineering, Graduate School of Engineering, Kanagawa Institute of Technology), Paper ID:10077

Deep neural network can give contributions of input: a feasibility study of transfer path analysis, Lee, Dooho(Donggeui University), Park, Youn-young(Donggeui University), Lee, Jin Woo(Ajou University), Paper ID:10088

Design of an active mass damper to simultaneously mitigate seismic acceleration in superstructures and substructures of a mid-story isolation building, Tomiyoshi, Yuta(School of Science for Open and Environmental Systems, Faculty of Science and Technology, Keio University), Takahashi, Masaki(System Design Engineering, Faculty of Science and Technology, Keio University), Kotsuki, Sachie(Center for Safety and Reliability Engineering, Institute of Technology, Shimizu Corporation), Kambara, Hiroshi(Center for Safety and Reliability Engineering, Institute of Technology, Shimizu Corporation), Fukukita, Akira(Center for Safety and Reliability Engineering, Institute of Technology, Shimizu Corporation), Paper ID:10103