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**Virtual Conference
8 – 10 March 2022**



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Day 1: Tuesday March 8, 2022

ISCS Plenary Talk

Chair: Toshiyuki Ohtsuka (Kyoto University)

9:30-10:20 (JST), Zoom Webinar

Francesco Borrelli (University of California, Berkeley)

Title: Learning and Forecasts in Autonomous Systems

Optimal Control

Chair: Takeshi Hatanaka (Tokyo Institute of Technology)

10:40-12:20 (JST), Zoom Meeting Room A

Schedule	No.	Title	Authors
10:40-11:00	22	Hybrid Hierarchical Statistical Control of Robotic Manipulators...1	Stephen Lash (Temple University), Firdous Saleheen (EDDA Technology Inc.), Chang-Hee Won (Temple University)
11:00-11:20	19	Development of Support Programs for Solving BMI Problems by Overbounding Approximation Method...9	Jiulin Zhu (Kyushu Institute of Technology), Noboru Sebe (Kyushu Institute of Technology)
11:20-11:40	10	Persistent Environmental Monitoring with Distributed Online Assignment of Charging Stations...16	Zhiyuan Lu (Tokyo Institute of Technology), Shunya Yamashita (Tokyo Institute of Technology), Takeshi Hatanaka (Tokyo Institute of Technology)
11:40-12:00	21	A Thermal Model-Based Engine On-Off Control in HEVs...23	Wei Wang (Tongji University), Kai Zhao (Sophia University), Fuguo Xu (Tokyo City University), Tielong Shen (Sophia University)
12:00-12:20	16	Real Time Energy Management of HEVs with On-Board Parameter Identification...N/A	Bo Zhang (Sophia University), Fuguo Xu (Tokyo City University), Tielong Shen (Sophia University)

Model Predictive Control

Chair: Tsuyoshi Yuno (Kyushu University)

13:40-15:00 (JST), Zoom Meeting Room A

Schedule	No.	Title	Authors
13:40-14:00	25	Douglas-Peucker Piecewise Affine Approximation of an Optimal Fuel Consumption Problem to Apply PANOC...34	Hongjia Ou (Kyushu University), Andreas Themelis (Kyushu University), Tsuyoshi Yuno (Kyushu University), Taketoshi Kawabe (Kyushu University)
14:00-14:20	27	PCA-based Model Reduction of Diffusion Process and its Application to MPC Problem...N/A	Weiqi Zhang (Okayama University), Kentaro Hirata (Okayama University), Yukinori Nakamura (Okayama University), Kunihisa Okano (Okayama University)
14:20-14:40	28	LMI-based Model Predictive Control for Leg/wheel Mobile Robot...45	Daiki Kanai (Tokyo City University), Kenichiro Nonaka (Tokyo City University), Kazuma Sekiguchi (Tokyo City University)
14:40-15:00	15	Application of Nonlinear Model Predictive Control to Quadcopter Equipped with	Takeo Kimura (Kyoto University), Kenta Hoshino (Kyoto University), Yuta Asano (Mitsubishi)

		Internal Control System...51	Electric Corporation), Akihiko Honda (Mitsubishi Electric Corporation), Norizumi Motooka (Mitsubishi Electric Corporation), Toshiyuki Ohtsuka (Kyoto University)
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Day 2: Wednesday March 9, 2022

Pioneer Award Commemorative Lecture

Chair: Takeshi Hatanaka (Tokyo Institute of Technology)

9:30-10:10 (JST), Zoom Webinar

Kai Cai (Osaka City University)

Title: Congruences and Quotients: Understanding Structural Reduction and Decomposition

Intelligent Control

Chair: Kazumune Hashimoto (Osaka University)

10:30-12:30 (JST), Zoom Meeting Room A

Schedule	No.	Title	Authors
10:30-10:50	14	Traffic Flow Control at Signalized Intersections using Signal Spatio-Temporal Logic...N/A	Sagar Patil (National Institute of Informatics), Kazumune Hashimoto (Osaka University), Masako Kishida (National Institute of Informatics)
10:50-11:10	26	Adaptive Control for H-Infinity Tracking of Uncertain Dynamical Systems...62	Atsede G. Gebremedhin (Osaka University), Yasumasa Fujisaki (Osaka University)
11:10-11:30	6	Robust Fixed-Time Synchronization of Uncertain Fractional-Order Quaternion-Valued Neural Networks...68	Zhongwen Wu (Southeast University)
11:30-11:50	9	Bone Surface Extraction and Dynamic Tracking from Ultrasound Images by Semantic Segmentation...74	Taiga Haba (Aoyamagakuin University), Taku Itami (Mie University), Jun Yoneyama (Aoyamagakuin University)
11:50-12:10	12	Unsupervised Domain Adaptation for Environmental Recognition in Crane Operations...80	Keigo Watanabe (Okayama University), Maierdan Maimaitimin (TADANO Ltd), Yuta Takashima (Mitsubishi Electric Corporation), Isaku Nagai (Okayama University)
12:10-12:30	13	A Gesture Recognition System for Cranes Using Deep Learning with a Self-Attention Mechanism...87	Keigo Watanabe (Okayama University), Maierdan Maimaitimin (TADANO Ltd), Kazuki Yamamoto (Panasonic Corporation), Isaku Nagai (Okayama University)

Nonlinear Systems

Chair: Masaya Tanemura (Shinshu University)

13:30-15:30 (JST), Zoom Meeting Room A

Schedule	No.	Title	Authors
13:30-13:50	20	A Nonlinear Discrete-Time Model for Controlled Moment Gyroscope...95	Ryotaro Sakata (University of Tsukuba), Shin Kawai (University of Tsukuba), Triet Nguyen-Van (University of Tsukuba)
13:50-14:10	24	Experimental Verification of the Feedback Linearization Plant-Input-Mapping Discretization...102	Ryuya Tsuchida (Ibaraki University), Keisuke Yagi (Ibaraki University), Yoshikazu Mori (Ibaraki University)
14:10-14:30	18	Undershoot Response Analysis for Circular	Ryo Nakata (Shinshu University), Masaya

		Path-Following Vehicle Control Based on Zeros in the Time-State Control Form...108	Tanemura (Shinshu University), Yuichi Chida (Shinshu University)
14:30-14:50	17	A Safety Problem of the Nonlinear Impedance Control for Collaborative Hydraulic Arms with Reachable Manifold...N/A	Ryo Arai (Shinshu University), Satoru Sakai (Shinshu University)
14:50-15:10	23	Aggressive Nonlinear Regulators for Nominally Linear Systems with Uncertainties and Nonlinearities...121	Leonidas Dritsas (ASPETE)
15:10-15:30	11	Dynamic Pricing in an Intraday Market with Application to Peer-to-Peer Trading...N/A	Fiona Weiß (University of Stuttgart), Yuto Fujimaki (Keio University), Toru Namerikawa (Keio University)