

# **2021 SICE International Symposium on Control Systems (SICE ISCS 2021)**

**Virtual Conference  
2 – 4 March 2021**



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## Day 1: Tuesday March 2, 2021

### System Modeling and Control

Chair: Ahmet Cetinkaya (National Institute of Informatics, Japan)

10:30-12:10 JST

Schedule	No.	Title	Authors
10:30-10:50	19	SARSA(0) Reinforcement Learning Over Fully Homomorphic Encryption...1	Jihoon Suh (The University of Texas at Austin), Takashi Tanaka (The University of Texas at Austin)
10:50-11:10	4	Modeling of Flow Rate Variation of Tube Pumps...N/A	Jinhui Yang (Okayama University), Kentaro Hirata (Okayama University), Yukinori Nakamura (Okayama University), Kunihisa Okano (Okayama University), Kenichi Kato (National Institute of Technology, Matsue College)
11:10-11:30	11	Learning Dynamic Systems Using Gaussian Process Regression with Prior Information Given by Analytic Models...N/A	Shengbing Tang (Kyoto University), Kenji Fujimoto (Kyoto University), Ichiro Maruta (Kyoto University)
11:30-11:50	6	Pre-Evaluation for Experimental Verification of Attitude Control of a Spacecraft with Double-Gimbal Variable-Speed Control Moment Gyro...N/A	Futa Hayashida (Osaka Prefecture University), Sayaka Kanata (Osaka Prefecture University), Takashi Shimomura (Osaka Prefecture University)
11:50-12:10	17	Path Tracking of Non-Holonomic Mobile Robot Using Event-Triggered Control in Presence of Time and State-Dependent Uncertainties...8	Padmini Singh (Indian Institute of Technology - Kanpur), Subhash Chand Yogi (Indian Institute of Technology - Kanpur), Laxmidhar Behera (Indian Institute of Technology - Kanpur), Nishchal kumar Verma (Indian Institute of Technology - Kanpur)

### ISCS Invited Talk

Chair: Tomohisa Hayakawa (Tokyo Institute of Technology, Japan)

13:10-14:00 JST

**Insoon Yang** (Seoul National University, South Korea)

**Title: Wasserstein Distributionally Robust Control and Optimization for Ambiguous Stochastic Systems**

### Network Control Systems

Chair: Hideaki Ishii (Tokyo Institute of Technology, Japan)

14:20-16:00 JST

Schedule	No.	Title	Authors
14:20-14:40	10	Distributed Event-Triggered Control for Discrete-Time Multi-Agent Average Consensus...N/A	Rajiv Kumar Mishra (Tokyo Institute of Technology), Hideaki Ishii (Tokyo Institute of Technology)
14:40-15:00	18	Two-Player Rolling Horizon Games for Jamming Attacks on Multiagent Systems...N/A	Yurid Nugraha (Tokyo Institute of Technology), Ahmet Cetinkaya (National Institute of Informatics), Tomohisa Hayakawa (Tokyo Institute of Technology)

			Institute of Technology), Hideaki Ishii (Tokyo Institute of Technology), Quanyan Zhu (New York University)
15:00-15:20	13	Leader-Following Coordination of Heterogeneous Multi-Agent Systems Via Displacement Feedback...14	Rodolfo Pietrasanta (Politecnico di Torino), Elisa Capello (Politecnico di Torino), Yasumasa Fujisaki (Osaka Univ.)
15:20-15:40	14	Remote Fault Filtering and Control for a Networked Control System with Unreliable Sensors...N/A	Ching-Min Lee (I-Shou University), Siang Jheng (I-Shou University), Yi-Chen Lee (I-Shou University)
15:40-16:00		-	-

## Day 2: Wednesday March 3, 2021

### MSCS Plenaries: **Kimura-Award Commemorative Lecture**

9:30-10:10 JST

**Masaaki Nagahara** (The University of Kitakyushu, Japan)

**Title: Sparsity Methods for Systems and Control**

### **Nonlinear Control Systems**

Chair: Kenta Hoshino (Kyoto University, Japan)

10:30-12:30 JST

Schedule	No.	Title	Authors
10:30-10:50	8	Estimation of Fall History by Plantar Pressure During Walking Based on Auto Encoder and Principal Component Analysis...20	Midori Kawada (Ochanomizu University), Kanako Nakajima (National Institute of Advanced Industrial Science and Technology), Akio Sashima (National Institute of Advanced Industrial Science and Technology), Yuji Ohta (Ochanomizu University), Koichi Kurumatani (National Institute of Advanced Industrial Science and Technology)
10:50-11:10	9	Complex Obstacle Avoidance Control for a Mobile Robot Using Nonsmooth Control Barrier Function...N/A	Masayuki Saito (Tokyo University of Science), Issei Tezuka (Tokyo University of Science), Hisakazu Nakamura (Tokyo University of Science)
11:10-11:30	16	Human Assist Control of Electric Wheelchair by Using Control Barrier Function...N/A	Yudai Yamashita (Tokyo University of Science), Tsubasa Sano (Tokyo University of Science), Hisakazu Nakamura (Tokyo University of Science)
11:30-11:50	7	Safe Control with Control Barrier Function for Euler-Lagrange Systems Facing Position Constraint...28	Aditya Wildan Farras (Tokyo Institute of Technology), Takeshi Hatanaka (Osaka University)
11:50-12:10	3	Deep Unfolding-Based Output Feedback Control Design for Linear Systems with Input Saturation...33	Koki Kobayashi (Nara Institute of Science and Technology), Masaki Ogura (Osaka University), Taisuke Kobayashi (Nara Institute of Science and Technology), Kenji Sugimoto (Nara Institute of Science and Technology)
12:10-12:30		-	-

### **Linear Control Theory**

Chair: Yutaka Hori (Keio University, Japan)

13:30-15:30 JST

Schedule	No.	Title	Authors
13:30-13:50	15	Impossibility Results for Stochastic Constrained Control...N/AI	Ahmet Cetinkaya (National Institute of Informatics), Masako Kishida (National Institute of Informatics)
13:50-14:10	12	Robust Instability Radius for Multi-Agent Dynamical Systems with Cyclic Structure...N/A	Shinji Hara (The University of Tokyo), Tetsuya Iwasaki (UCLA), Yutaka Hori (Keio University)

14:10-14:30	5	Blade Pitch Controller Design Based on Model Reference Adaptive Control for Floating Offshore Wind Turbines...N/A	Meijiao Yu (Osaka Prefecture University), Naoyuki Hara (Osaka Prefecture University), Keiji Konishi (Osaka Prefecture University)
14:30-14:50	21	A GPS Measurement-Based Map Conversion Scheme for Railway Synchronization Control under Moving Block Signalling...N/A	Tua Agustinus Tamba (Parahyangan Catholic University), Yul Yunazwin Nazaruddin (Institut Teknologi Bandung), M. Brahma Waluya (Institut Teknologi Bandung), Ismail Faruqi (Institut Teknologi Bandung)
14:50-15:10	22	A PSO-Based Moving Target Defense Control Optimization Scheme...46	Tua Agustinus Tamba (Parahyangan Catholic University)
15:10-15:30		-	-