2023 Workshop on Uncertain Dynamical Systems

July 4-6, Kyoto TERRSA, Kyoto, Japan

The Workshop on Uncertain Dynamical Systems (WUDS) is an international event organized by the Technical Committee on Robust Control of the International Federation of Automatic Control (IFAC). The workshop traditionally takes place the week before the IFAC World Congress, a flagship event of the IFAC witnessing the participation of about 3000 researchers working in the field of Automatic Control and coming from all over the world. The 2023 IFAC World Congress will take place in Yokohama on July 8-14, 2023, and the 2023 WUDS is then organized in the preceding week on July 4-6, 2023 at Kyoto, Japan.

The goal of the WUDS workshop is to gather a selected number of internationally renowned researchers with a robust control background in an event characterized by a friendly atmosphere, where they can share their most recent cutting-edge research results on advanced and applied control topics.

This workshop is co-sponsored by

- JSPS KAKENHI Grant Number JP21H01354 (PI: Yoshio Ebihara)
- JSPS KAKENHI Grant Number JP21K04107 (PI: Takayuki Wada)
- Japan Association of Automatic Control (JAAC)

WUDS2023

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Organizers

Scientific Organizers

Mario Sznaier

Northeastern University, Boston (MA), USA

Yoshio Ebihara

Kyushu University, Fukuoka, Japan

Constantino Lagoa

Pennsylvania State University, University Park (PA), USA

Fabrizio Dabbene

CNR-IEIIT Torino, Italy

Local Organizer

Takayuki Wada

Osaka University, Osaka, Japan

Program

Tuesday, July 4

Time	
9:00	Registration
9:30	Shinji Hara
	Phase Change Rate Maximization for Robust Instability Analysis and Minimum Norm Strong Stabilization
10:10	Li Qiu
	MIMO Small Phase Theorems
10:50	Coffee Break
11:20	Yoshito Ohta
	On the order of Hidden Markov Models Realization
12:00	Lunch Break
14:00	Yasumasa Fujisaki
	Robust Consensus of Second-Order Multi-Agent Systems via Dynamic Relative Displacement Feedback
14:40	Patrizio Colaneri
	Multi-opinion Markovian agent networks: parametrization, second order moment, social power, entropy
15:20	Coffee Break
15:50	Takayuki Wada
	Distributed Full-State Observer Design with Intermittent Communication
16:30	Ian Petersen
	A Robust Control Approach to Asymptotic Optimality of the Heavy Ball Method for Optimization of Quadratic Functions
17:10	Dimitri Peaucelle
	Exploring robust structured static output feedback design
17:50	End of Day 1

Wednesday, July 5

Time	
9:30	Yoshio Ebihara
	Lp+ Induced Norm Analysis of Linear Systems
10:10	Franco Blanchini
	Mathematics, Control and Mechanisms
10:50	Coffee Break
11:20	Giulia Giordano
	Learning from the system structure in biology and epidemiology
12:00	Lunch Break
13:00	Necmiye Ozay
	Some fundamental challenges in learning-based control
13:40	Mario Sznaier
	What can robust control do for learning?
14:20	Coffee Break
14:50	Claudio de Persis
	On data-driven control of nonlinear systems
15:30	Sze Zheng Yong
	Robust Control Barrier Functions for Uncertain Systems with Set-Membership Parameter Estimation and Learning
16:10	Dimitra Panagou
	Rate-Tunable Control Barrier Functions for Safety-Critical Multi-Agent Control under Uncertainty
16:50	End of Day 2
19:30	Banquet at Cuisine Traditonal Restraurant (Kyo Kaiseki)

Thursday, July 6

Time	
9:30	Constantino Lagoa
	Efficient Algorithms for Risk Optimization
10:10	Fabrizio Dabbene
	Probabilistic scaling: a general tool for design under uncertainty
10:50	Coffee Break
11:20	Carsten Scherer
	Convex Synthesis of Accelerated Gradient Algorithms
12:00	Enrique Mallada

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