58th IEEE Conference on Decision and Control

Final Program

CDC 2019
NICE is nice

Palais des Congrès et des Expositions
Nice, France
December 11 – 13, 2019

IEEE CSS

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Welcome from the President of the IEEE Control Systems Society

Je vous souhaite la bienvenue sur la Côte d'Azur.

The IEEE Conference on Decision and Control, CDC, is the Control Systems Society's largest and longest running conference; 58 years strong and the premier broad-spectrum annual event in the control calendar. This is CDC's first visit to France and promises an extraordinary location and stellar programs: technical, social, students and workshops. I am truly excited and delighted to be in Nice – about 25 years ago I lived in Antibes, roughly 20 km up the road on the opposite side of Baie des Anges. General Chair Carlos Canudas de Wit and Program Chair Rodolphe Sepulchre lead a super team of high-performance researchers and organizers. So I am even more enthralled to witness the conference content and events. CDC provides a splendid opportunity to refresh both friendships and technical skills. It also allows one to meet new people especially the up-and-comer wizards.

For all of CDC's professionalism and intellectual clout, it relies on a volunteer base of individuals who each has a day-job. This welcome message also allows me to proffer sincere thanks to every one of them for their sterling efforts operating under deadlines to put together the event in all its complexity and color. Being part of IEEE, the Control Systems Society and therefore CDC are run by volunteers for the benefit of the members, conference attendees and publications audience. The multi-layered and sophisticated organization of CDC has been honed from years of experience of these volunteers but definitely leaving sufficient room for local innovation and imagination. Naturally, the leaders of CDC 2019 have a great background and knowledge of prior events. But so too they have personal views and values which they bring to the planning and execution. This helps make CDC a rewarding experience for all. Clicking on the *Committees* link from the main website brings up the first tranche of the organization. There are many others at the next level, such as the Conference Editorial Board which garners reviews for every submission. The reviews are created by another group of volunteers – even including your President, who reviewed five papers. I think that they keep the really tough ones for me. Local arrangements are another multi-faceted endeavor. To some extent, good conference organizers are like control systems; nobody notices them when they work well. So, please make a concerted effort to track down and congratulate some of the volunteers.

I was pressganged by then CSS History Committee Chair, Mike Polis, into making an historical review of the first fifty CDCs in 2011. David Castañon, General Chair of CDC number 46 in Cancun, and I, from CDC 39 in Sydney, had the unique opportunity to scan the written and oral histories of CDC for the memorable activities, technical and social. It was a difficult proposition to squeeze this into a fifty-minute presentation. It is with this tremendous fondness for CDC and hindsight of so many events that I truly welcome you to CDC 58 in Nice. I am certain that our hardworking organizers and French hosts have a remarkable conference in store for us. I have every expectation that we all will gain new friends, new expertise and new stories, each of which augurs well for our future growth. Allons-y!

Robert Bitmead

President, IEEE Control Systems Society

Welcome from the 2019 CDC General Chair

Welcome to the 58th IEEE Conference on Decision and Control at Nice!

It is more than an honor to be the General Chair of the first CDC conference organized in France. We have selected Nice among others great locations because of its weather, luminosity and radiant beauty. Although the current Nice area has been populated since prehistoric times, the starting point of Belle Nice traces back to 350 BC, when the Greeks established a place on the shores of the Mediterranean Sea, called Nikaia, according to Nike, the Greek goddess of victory. The history of Nice is essentially characterized by being a border city, which has frequently changed its sovereignty. It was successively Ligurian, Greek and Roman, before becoming part of the Ostrogothic Kingdom of Italy, then of the Eastern Roman Empire and the Kingdom of Italy (888-1024), then becoming Genoese, Provençal, Savoyard, Piedmontese and finally definitively French in 1860. Nice is today a capital of the art of living as it is attested by its typical streets, the "piazzettas", the beaches bathed in light, the shade of the wooded parks, the effervescence of the markets, the colorful gastronomy, the drinks on the terrace, and a walk on the harbor. We are confident that you will have a productive and enjoyable stay.

The genesis of the CDC organization in France goes back to one of those distracted days when some colleagues distractly asked: "did the CDC ever happen in France? …" Then they fixed their eyes on you and you end up being GC. Together with Dominique Sauter (Financial Chair), we formed a force group supported by the CNRS to explore different possible locations and build a proposal that eventually got accepted. Dominique has been a pillar in the organization since the very earliest times. Besides his dedicated skills on financial aspects, he dedicated many efforts in setting the main pieces of the whole conference organization.

Rodolphe Sepulchre (Program Chair), together with Christophe Prieur (Program Vice-Chair), Karl Johansson (Tutorial Chair), Ilya Kolmanovsky (Workshop Chair), and Moritz Diehl (Invited Sessions Chair), with the help of Amir Aghdam (Conference Editorial Board Chair) made an extraordinary job in building a great scientific program that you will surely enjoy. Their dedication and rigor in setting the program were highly appreciated. Edouard Laroche, together with Alessandro Giua and Tarek Hamel, took care of the local arrangements. They carefully select the food for the Banquet and receptions. Their previous experience in organizing large conferences (CDC, ECC and IFAC) was very much welcome. Alessandro's skills in mastering Excel files for room allocations made our life easy.

Antonella Ferrara (Publication Chair) did an extraordinary work in setting the Final Program Booklet and dealing with publication aspects of the conference. Her rigor and enthusiasm were a continuum. Laura Menini (Registration Chair) was extremely proactive and efficient in taking care of the registration process in a timely manner. Thanks to her for this great effort. Isabelle Queinnec was responsible for the Exhibits and Sponsorship. She and the MCI (PCO) were able to bring new sponsors to our conferences. Antoine Chaillet took care with a lot of efficiency of the student activities. He did a great job in coordinating student travel awards and organizing the newcomers' reception. Francesco Rossi puts a lot of enthusiasm in his job of publicity chair. He set the webpage and took care of the conference advertisement and news. Bob Judd did a great job in helping us during the negotiation phase with the Congress Palace.

Thanks also to Randy Beard and Edwin Chong for supporting the conference as part of the Conference Operation Chair. I wish to express my gratitude to Jeoffrey Roussey from the MCI company acting as our PCO, for the professional support and dedication during the whole organization process, and all other

volunteers that helped in the organization. Finally, a great thanks to Julie Perrin who assisted me during the whole organization process.

Enjoy the conference, Enjoy Nice!

As John Baillieul said: *"It is nice to be in Nice"*

Carlos Canudas de Wit

General Chair

Welcome from the 2019 CDC Program Chair

Welcome to the 58th IEEE Conference on Decision and Control at Nice!

The quality of the CDC program is before everything else the result of your own work as an author, and I would like to thank you all for contributing so generously to the research presented at this conference. The CDC is the prime annual conference of our field and strikes an exceptional balance between the theory and applications of control, that keep spanning broader and broader horizons. I also want to offer a special thank to the organizers of invited sessions who play a key role in highlighting special topics of importance and inspiring new research directions in a coherent manner. A total of 2320 papers were submitted this year, out of which 1340 papers were accepted. The program features 25 parallel sessions, four semi-plenary lectures, our distinguished Bode lecture, and 14 pre-conference workshops. Additionally, the program includes four tutorial sessions and five special sessions.

A number of people have worked tirelessly on putting together the program and managing the submission and review process. It was a great pleasure to work with the three Program Vice-Chairs, Christophe Prieur (contributed papers), Kalle Johansson (tutorial papers), and Moritz Diehl (invited sessions). The program was mostly completed during the ECC in Naples. Of course the experience and professionalism of the Conference Editorial Board (CEB) Chair Amir Aghdam was key to assembling the program. His help and kindness were deeply appreciated throughout the process. Ilya Kolmanovsky did an outstanding job managing and organizing the pre-conference workshops. I also wish to thank the outstanding international program committee, who worked hard in June auditing all papers and reviews, and all the CEB members who volunteered so many hours to manage the review process. Finally, you also must be thanked as well as all reviewers who ultimately ensure the quality and fairness in the selection of papers.

It was a pleasure from the very start to work on the program of a conference organized by Carlos Canudas de Wit. Carlos has been a personal friend and a key European control figure for many years. We owe him this wonderful CDC in Nice with a guaranteed Mexican touch. I would also like to thank all the previous CDC general chairs and program chairs for facilitating the task of their followers. Magnus Engerstedt's help and tips proved as efficient as you expect them to be from Magnus ... And last but not least, thanks to Antonella Ferrara for working so smoothly on the final program booklet and other publication related activities.

I hope that you will all find this year's CDC program rich, attractive, and inspiring. I wish you a productive and enjoyable 2019 IEEE Conference on Decision and Control in Nice!

Rodolphe Sepulchre

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Coordinated by Joao Hespanha in his capacities of CSS Vice-President for Technical Activities, the Control System Society Technical Committees (TC) organizes focused events around a selected technical area. Typical activities include organizing invited sessions for conferences, special issues in journals, technical meetings (workshops and conferences), maintaining web sites for technical resources, and publishing electronic newsletters that focus on various technical areas.
The current list of technical committees is shown below. For more information, please consult the TC web sites

http://ieeecss.org/activities/css-technical-activities

and contact the TC Chairs directly for additional information. All technical committee meetings are open. It is our hope that you will find the collaborations and resources useful.

Technical Committees	**TC Chair**
Aerospace Controls	Hull, Richard A.
Automotive Controls	Siegel, Jason
Control Education	Rossiter, J. Anthony
Discrete Event Systems	Kai Cai
Distributed Parameter Systems	Le Gorrec, Yann
Health and Medical Systems	Medvedev, Alexander
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Manufacturing Automation and Robotic Control	Wang, Yue
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Nonlinear Systems and Control	Ito, Hiroshi
Power Generation	Bentsman, Joseph
Process Control	Findeisen, Rolf
Robust and Complex Systems	Lagoa, Constantino
Smart Cities	Su, Rong
Smart Grids	Hiskens, Ian
Systems and Synthetic Biology	Waldherr, Steffen
Systems Identification and Adaptive Control	Mercere, Guillaume
Variable Structure and Sliding Mode Control	Edwards, Christopher

Semi-Plenary Lectures and CSS Bode Lecture

Semi-Plenary Lectures

Title: Genetic Circuit Engineering Meets Control Theory
Speaker: Domitilla Del Vecchio, Massachusetts Institute of Technology, USA
Time and Location: Wednesday December 11, 2019, 8:30-9:30 am, Apollon (WeSP1)

Abstract. Genetic circuits control every aspect of life and thus the ability to engineer them de-novo opens exciting possibilities, from revolutionary drugs and green energy, to bugs that recognize and kill cancer cells. The robustness of natural gene networks is the result of million years of evolution and is in contrast with the fragility of today's engineered circuits. A genetic module's input/output behavior changes in unpredictable ways upon inclusion into a larger system. Therefore, each component of a system is usually redesigned every time a new piece is added. Rather than relying on such ad-hoc design procedures, control theoretic approaches may be used to engineer "insulation" of circuit components from context, thus enabling modular composition through specified input/output connections. In this talk, I will give an overview of modularity failures in genetic circuits, focusing on problems of loads, and introduce a control-theoretic framework, founded on the concept of retroactivity, to address the insulation question. Within this framework, insulation can be mathematically formulated as a disturbance rejection problem; however, classical solutions are not directly applicable due to bio-physical constraints. I will thus introduce solutions relying on time-scale separation, a key property of biomolecular systems, which we used to build two devices: the load driver and the resource decoupler. These devices aid modularity, facilitate predictable composition of genetic circuits, and show that control theoretic approaches may be suitable to address pressing challenges in engineering biology.

Biography. Domitilla Del Vecchio received the Ph. D. degree in Control and Dynamical Systems from the California Institute of Technology, Pasadena, and the Laurea degree in Electrical Engineering (Automation) from the University of Rome at Tor Vergata in 2005 and 1999, respectively. From 2006 to 2010, she was an Assistant Professor in the Department of Electrical Engineering and Computer Science and in the Center for Computational Medicine and Bioinformatics at the University of Michigan, Ann Arbor. In 2010, she joined Department of Mechanical Engineering at the Massachusetts Institute of Technology (MIT), where she is currently Professor and member of the Synthetic Biology Center. She is a recipient of the 2016 Bose Research Award (MIT), the Donald P. Eckman Award from the American Automatic Control Council (2010), the NSF Career Award (2007), the American Control Conference Best Student Paper Award (2004), and the Bank of Italy Fellowship (2000).

Title: Equivariant Observers: Robust Nonlinear State Estimation for Robotic Systems
Speaker: Robert Mahony, Australian National University, Australia
Time and Location: Wednesday December 11, 2019, 8:30-9:30 am, Athéna (WeSP2)

Abstract. The physical state of a robotic system naturally carries structure; the pose of rigid links can be written as elements of the Special Euclidean group, images taken by a camera of a planar scene can be related by homographies and mapped to elements of the special linear group, etc. Recent work has demonstrated that there is a rich collection of symmetry groups for different robotic problems above and beyond the classical Lie-groups. This talks shows how this structure can be exploited to design robust nonlinear observers for state estimation. The earliest results in this direction were nonlinear attitude estimators (2005-2010) that were an enabling technology in the aerial robotic vehicle industry. Pose estimation algorithms based on these ideas are built into the augmented reality headsets that are now ubiquitous in gaming. Recent symmetries have opened the door to new solutions for classical robotics problems such as visual odometry, visual inertial odometry, simultaneous localisation and mapping.

Biography. Robert Mahony is a Professor in the Research School of Engineering at the Australian National University. He received his BSc in 1989 (applied mathematics and geology) and his PhD in 1995 (systems engineering) both from the Australian National University. He is a fellow of the IEEE and was president of the Australian Robotics Association from 2008-2011. He was Director of the Research School of Engineering at the Australian National University 2014-2016. His research interests are in non-linear systems theory with applications in robotics and computer vision. He is known for his work in aerial robotics, equivariant observer design, matrix subspace optimisation and image based visual servo control.

Title: The Curse of Linearity and Time-Invariance
Speaker: Alessandro Astolfi, Imperial College, UK and Univ. Rome Tor Vergata, Italy
Time and Location: Thursday December 12, 2019, 8:30-9:30 am, Athéna (ThSP2)

Abstract. The study of linear systems theory without exploiting linearity and time-invariance may pose challenges, yet it is highly rewarding. In truth, linearity and time-invariance, albeit powerful, are a curse: they are not conducive to an abstract understanding of concepts, tools and ideas and may often be misleading. On the other hand, notions such as manifold invariance, interconnection, coordinates transformations, decomposition, and the principle of optimality facilitate the enhancement of linear, time-invariant, systems theory methods and tools to far more general classes of systems. We illustrate this perspective by providing abstract and geometric definitions for eigenvalues, poles, moments, Loewner operators and derivative, and persistence of excitation; and by solving interpolation problems, adaptive and robust control problems, and optimal control and game theory problems, for general classes of nonlinear systems.

Biography. Alessandro Astolfi was born in Rome, Italy, in 1967. He graduated in electrical engineering from the University of Rome in 1991. In 1992 he joined ETH-Zurich where he obtained a M.Sc. in Information Theory in 1995 and the Ph.D. degree with Medal of Honor in 1995 with a thesis on discontinuous stabilisation of nonholonomic systems. In 1996 he was awarded a Ph.D. from the University of Rome "La Sapienza" for his work on nonlinear robust control. Since 1996 he has been with the Electrical and Electronic Engineering Department of Imperial College London, London (UK), where he is currently Professor of Nonlinear Control Theory and Head of the Control and Power Group. From 1998 to 2003 he was also an Associate Professor at the Dept. of Electronics and Information of the Politecnico of Milano. Since 2005 he has also been a Professor at Dipartimento di Ingegneria Civile e Ingegneria Informatica, University of Rome Tor Vergata. His research interests are focussed on mathematical control theory and control applications, with special emphasis for the problems of discontinuous stabilisation, robust and adaptive control, observer design and model reduction.

Title: Distributed Machine Learning Over Networks
Speaker: Francis Bach, INRIA, France
Time and Location: Thursday December 12, 2019, 8:30-9:30 am, Apollon (ThSP1)

Abstract. The success of machine learning models is in part due to their capacity to train on large amounts of data. Distributed systems are the common way to process more data than one computer can store, but they can also be used to increase the pace at which models are trained by splitting the work among many computing nodes. In this talk, I will study the corresponding problem of minimizing a sum of functions which are respectively accessible by separate nodes in a network. New centralized and decentralized algorithms will be presented, together with their convergence guarantees in deterministic and stochastic convex settings, leading to optimal algorithms for this particular class of distributed optimization problems.

Biography. Francis Bach is a researcher at INRIA, leading since 2011 the SIERRA project-team, which is part of the Computer Science Department at Ecole Normale Supérieure, and a joint team between CNRS, ENS and INRIA. Since 2016, he is an adjunct Professor at Ecole Normale Supérieure. He completed his Ph.D. in Computer Science at U.C. Berkeley, working with Professor Michael Jordan, and spent two years in the Mathematical Morphology group at Ecole des Mines de Paris, he then joined the WILLOW project-team at INRIA/Ecole Normale Superieure/CNRS from 2007 to 2010. He obtained in 2009 a Starting Grant and in 2016 a Consolidator Grant from the European Research Council, and received the Inria young researcher prize in 2012, the ICML test-of-time award in 2014, as well as the Lagrange prize in continuous optimization in 2018. In 2015, he was program co-chair of the International Conference in Machine learning (ICML), and general chair in 2018; he is now co-editor-in-chief of the Journal of Machine Learning Research. Francis Bach is primarily interested in machine learning, and especially in graphical models, sparse methods, kernel-based learning, large-scale convex optimization, computer vision and signal processing.

The CSS Bode Lecture

Title: Feedback and Uncertainty: Some Basic Problems and Theorems
Speaker: Lei Guo, Chinese Academy of Sciences, China
Time and Location: Friday December 13, 2019, 8:30-9:30 am, Apollon (FrP1)

Abstract. Feedback is a core concept of automatic control, a fundamental principle of systems and an indispensable mechanism in intelligent systems, which makes it possible for a dynamical system to perform well in the presence of various uncertainties. Although it is widely recognized that a comprehensive investigation of the quantitative relationship between feedback and uncertainty is a challenging task, considerable progress has been made in both theory and practice on the design and analysis of feedback systems. In this lecture, we will present some findings and theorems in the understanding of several basic problems. First, we will consider adaptive control of linear stochastic systems and explain the difficulties and techniques in establishing the global stability and optimality of the well-known self-tuning regulators (STR), designed by combining the least-squares estimator with the minimum variance controller. This natural and seemingly simple case had actually been a basic longstanding open problem in adaptive control, and its solution offers valuable insights necessary for more complicated problems. Next, we will discuss the theoretical foundation of the classical proportional-integral-derivative (PID) control, to understand the rationale behind its widespread successful applications in control practice where almost all of the systems are nonlinear with uncertainty, by presenting some theorems on the global (semi-global) stability and asymptotic optimality of the closed-loop systems, and by providing a concrete design method for the PID parameters. Finally, we will consider more fundamental problems on the maximum capability and limitations of the feedback mechanism in dealing with uncertain nonlinear systems, where the feedback mechanism is defined as the class of all possible feedback laws (which are not restricted to a certain particular subclass). We will present some "critical values" and "impossibility theorems" about the maximum capability of the feedback mechanism for several basic classes of uncertain nonlinear systems. Experiences, extensions and expectations will also be shared during the lecture.

Biography. Lei Guo received his B.S. degree in mathematics from Shandong University in 1982, and Ph.D. degree in control theory from the Chinese Academy of Sciences in 1987. He was a postdoctoral fellow at the Australian National University (1987-1989). Since 1992, he has been a Professor of the Institute of Systems Science at the Chinese Academy of Sciences (CAS). From 2002 to 2012， he was the President of the Academy of Mathematics and Systems Science, CAS. He is currently the Director of the National Center for Mathematics and Interdisciplinary Sciences, CAS. He has worked on problems in adaptive control, system identification, adaptive signal processing, and stochastic systems. His current research interests include control of nonlinear uncertain systems, PID control theory, distributed filtering and estimation, capability of feedback, multi-agent systems, game-based control systems, and complex systems, among others.

Special Sessions

There will be five special sessions at the conference on the following topics:

- **NASK Special Session**
- **MERL Special Session**
- **Meet the Faculty Candidates Poster Session**
- **ERC Session: ERC Funding Opportunities**
- **MathWorks Special Session**

Title: NASK Special Session: Secure and efficient with adaptive control - a story of one equation that brought new perspectives for Linux servers and cybersecurity systems
Speaker: Michał Karpowicz (National Research Institute for Cybersecurity & AI)
Time and Location: Wednesday, December 11, 12:15 – 1:15 pm, Galliéni 5

Abstract: As a National Research Institute executing governmental cybersecurity tasks on one hand and providing commercial IT services on the other, NASK is in constant need of technological solutions that prove to be both secure and efficient. Rapidly changing patterns of cyberattacks and ever-growing demand for computing capacity result in excessive costs of network services. Therefore, we are focused on developing solutions for cybersecurity and energy-efficient data center management.
Our recent findings show that challenges arising in these areas call for the application of adaptive control theory. And it all started with one equation…

Michał Karpowicz is assistant Professor of Computer Science and Head of IT Systems Engineering Department at NASK National Research Institute for Cybersecurity & AI. He received his B.S., M.S., and Ph.D. from the Institute of Control and Computation Engineering at the Warsaw University of Technology. His research interests include control theory, signal processing, and game theory.

Title: MERL Special Session: An overview of research activities at MERL (Mitsubishi Electric Research Laboratories), Control and Dynamical Systems Group
Speakers: Karl Berntorp (MERL), Uroš Kalabić (MERL), Rien Quirynen (MERL)
Time and Location: Wednesday, December 11, 12:15-1:30 pm, Risso 8

Abstract: Mitsubishi Electric Research Laboratories (MERL) is a leading research organization located in Cambridge, Massachusetts, USA that conducts fundamental research for industrially-motivated problems. In this talk, we will present an overview of research activities at MERL, including fundamental controls research and the application of state-of-the-art control techniques to a variety of products. We will focus on fundamental research topics including model predictive control and the control of constrained systems, estimation and motion planning for autonomous systems, and learning for control. In addition, we will describe how these fundamental research areas have impacted applications such as autonomous vehicles, energy-efficient HVAC systems, high-precision manufacturing, traffic control, and spacecraft guidance and control.

Karl's Berntorp research is on statistical signal processing, motion planning, sensor fusion, and optimization-based control, with applications to automotive, aerospace, transportation, and

communication systems. His work includes design and implementation of nonlinear estimation, constrained control, and motion-planning algorithms.

Uroš Kalabić works on advancements in the theory of predictive control and constrained control, as well as its applications to the control of automotive and aerospace systems. His dissertation dealt with theoretical developments and practical applications of reference governors. Prior to joining MERL, Uroš interned at MERL and at Ford Motor Company.

Rien's Quirynen research interests are in model predictive control and moving horizon estimation, numerical algorithms for (nonlinear) dynamic optimization and real-time control applications. His doctoral research was focused on numerical simulation methods with efficient sensitivity propagation for real-time optimal control algorithms.

Title: Meet the Faculty Candidates Poster Session
Organizer and moderator: Antoine Chaillet (Centrale Supelec)
Time and Location: Wednesday, December 11, 6:30-8:30 pm, Rhodes Exhibition Area

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Abstract: Building on the success of the past several events, the 2019 CDC will feature the "Meet the Faculty Candidates" poster session. This poster session provides a great opportunity for faculty, search committee members, and recruiters to speak directly with current graduate students and postdoctoral researchers who are seeking faculty positions. The session will be held on Wednesday, December 11th, from 6:30pm to 8:30pm at the Acropolis Convention and Exhibition Center. Space will be available on a first-come first-serve basis. Presenters are asked to bring a poster no larger than 3ft x 4ft (A0 format) along with pushpins to attach the poster. Presenters will likely be more successful providing high-level discussions of their work such as motivation, strategies, unique insights, rather than narrow mathematical detailed discussions, unless asked specifically for those details. Presenters are also encouraged to bring copies of their CV for distribution.

Title: ERC Session: ERC Funding Opportunities
Speakers: Marios Polycarpou (University of Cyprus), Sandra Hirche (TUM Munich, Germany), Telma Carvalho (ERC Executive Agency)
Time and Location: Thursday, December 12, 12:15 – 1:15 pm, Galliéni 5

Abstract: ERC grants support individual researchers of any nationality and age who wish to pursue frontier research in any field of science. The ERC encourages in particular proposals that cross the disciplinary boundaries, pioneer ideas that address new and emerging fields and applications that introduce unconventional and/or innovative approaches. The ERC Session presents the current funding opportunities and discusses the evaluation and submission process from the perspective of a grantee and panel member. In particular, grantee experiences on writing an ERC proposal and implementing the ERC project will be shared. Furthermore, a panel member will report the experiences on common mistakes and faults in the proposal and the interview.

Title: MathWorks Special Session
Speaker: Craig Buhr (MathWorks)
Time and Location: Thursday, December 12, 12:15-1:45 pm, Hermès

Abstract: Reinforcement learning is getting a lot of attention lately. People are excited about its potential to solve complex problems in areas such as robotics and automated driving, where traditional control methods can be challenging to use. In addition to deep neural nets to represent the policy, and algorithms to train them, reinforcement learning requires repeated exploration of the environment. As such exploration is time consuming and potentially dangerous when done with the hardware, a simulation model is often used to represent the environment, at least for the initial training.

In this talk, we will discuss reinforcement learning and contrast it with traditional control methods. We will go through the steps needed to set up and solve a reinforcement leaning problem. We will then talk about relevant MathWorks capabilities and resources and will show an example of developing a robot controller using reinforcement learning. Topics include:

- Creating MATLAB and Simulink environment models and provide observation and reward signals for training policies
- Training of policies using various reinforcement learning algorithms
- Parameterizing policy and value functions using deep neural networks, linear basis functions, and look-up tables
- Parallelizing environment simulations and gradient calculations on GPUs and multicore CPUs for policy training
- Deploying trained policies to embedded devices through automatic code generation for CPUs and GPUs
- Implementing controllers using reinforcement learning for automated driving and robotics applications.

Tutorial Sessions

There will be four tutorial sessions at the conference on the following topics:

- **Cybergenetics: Control of Living Cells**
- **Self-Tuning and Reinforcement Learning**
- **Autonomous Vehicles and Traffic Control in Mixed Autonomy Environments**
- **Payoff Dynamics and Higher-Order Learning in Population Games**

Title: Cybergenetics: Control of Living Cells
Organizers: Mustafa Khammash (ETH Zurich), Mario Di Bernardo (University of Naples Federico II), Diego Di Bernardo (Telethon Institute of Genetics and Medicine)
Speakers: Mustafa Khammash (ETH Zurich), Diego Di Bernardo (Telethon Institute of Genetics and Medicine), Mario Di Bernardo (University of Naples Federico II), Filippo Menolascina (University of Edinburgh)
Time and Location: Wednesday, December 11, 10:00-12:00, Apollon

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Abstract: This tutorial session presents an overview of the theory and design tools for the real-time control of living cells. The theoretical, computational, and experimental tools and technologies utilized for achieving such control make up a new and exciting area of study at the interface between control theory and synthetic biology—one we refer to as Cybergenetics. The session is intended to introduce control scientists and engineers to the different ways living cells can be controlled, and to the many opportunities for future developments, both theoretical and practical, that such control brings about.

Title: Self-Tuning and Reinforcement Learning
Organizers: Nikolai Matni (University of Pennsylvania) and Anders Rantzer (Lund University)
Speakers: Anders Rantzer (Lund University), Nikolai Matni (University of Pennsylvania), Alexandre Proutiere (KTH Royal Institute of Technology), Stephen Tu (University of California, Berkeley)
Time and Location: Thursday, December 12, 10:00-12:00, Apollon

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Abstract: Machine and reinforcement learning are increasingly being applied to plan and control the behavior of autonomous systems interacting with the physical world. Examples include self-driving vehicles, distributed sensor networks, and agile robots. However, when machine learning is to be applied in these new settings, the algorithms had better come with the same type of reliability, robustness, and safety bounds that are hallmarks of control theory, or failures could be catastrophic. Thus, as learning algorithms are increasingly and more aggressively deployed in safety critical settings, it is imperative that control theorists join the conversation. The goal of this tutorial session is to provide a starting point for control theorists wishing to work on learning related problems, by covering recent advances bridging learning and control theory, and by placing these results within an appropriate historical context of system identification and adaptive control.

Title: Autonomous Vehicles and Traffic Control in Mixed Autonomy Environments
Organizers: Maria Laura Delle Monache (Inria Grenoble Rhône – Alpes), Jonathan Sprinkle (University of Arizona), Ramanarayan Vasudevan (University of Michigan), Daniel B. Work (Vanderbilt University)
Speakers: Daniel B. Work (Vanderbilt University)**,** Ramanarayan Vasudevan (University of Michigan), Jonathan Sprinkle (University of Arizona), Maria Laura Delle Monache (Inria Grenoble Rhône – Alpes)
Time and Location: Thursday, December 12, 16:30-18:30, Apollon

Abstract: This tutorial session provides an overview of the converging areas of control for autonomous vehicles, and control of the larger transportation system in which a small number of autonomous vehicles serve as actuators of traffic flow. The overview begins by describing the verification techniques and realistic sensor and control interfaces for safe real-time control of autonomous vehicles. Shifting towards a period when autonomous vehicles are present in large numbers, the session reviews classical traffic modeling, estimation, and control techniques, and then considers new methods available to model and use these autonomous vehicles to actuate bulk traffic flow composed primarily of human-piloted vehicles.

Title: Payoff Dynamics and Higher-Order Learning in Population Games
Organizers: Shinkyu Park (Princeton University), Nuno C. Martins (University of Maryland), Jeff S. Shamma (KAUST)
Speakers: Jeff S. Shamma (KAUST), Nuno C. Martins (University of Maryland), Shinkyu Park (Princeton University)
Time and Location: Friday, December 13, 10:00-12:00, Apollon

Abstract: Population games model the strategic interactions among vast numbers of decision-making agents. In this context, the evolutionary dynamics of a population describes how the proportions of agents adopting each available strategy evolve in response to the payoff (or fitness) ascribed to each strategy by the game. This session begins with a review of the basic tenets of population games and evolutionary dynamics. Subsequently, it overviews recent methods that hinge on passivity-based techniques to characterize the stability of the evolutionary dynamics when a dynamical system (more general than a population game or a dynamically modified version thereof) governs the payoff.

Pre-Conference Workshops

The CDC 2019 is offering 11 full-day and 3 half-day pre-conference workshops on Tuesday, December 10, 2019. The workshops address topics of current and future interest in control theory and applications, and are delivered by renowned experts from academia, research institutions, and industry.

Half-day Workshops (8:30 am - 12:30 pm, except Half-Day Workshop no. 3: 1:00 - 5:30 pm)

1. **Uncertainty Synthesis**
2. **Learning, Decision and Control over Networks**
3. **Computational Optimal Transport for Applications in Control and Estimation**

Workshop Title: Uncertainty Synthesis
Organizers and Speakers: Efstathios Bakolas (Univ. of Texas at Austin), Yongxin Chen (Georgia Institute of Technology), Tryphon Georgiou (Univ. of California, Irvine), and Panagiotis Tsiotras (Georgia Institute of Technology)
Time and Location: 8:30 am - 12:30 pm, Galliéni 6

Abstract: All dynamical systems are prone to exogenous disturbances, and the uncertainty introduced by these exogenous disturbances propagates along with the system states. More often, the amount of uncertainty in the system grows with time as the system evolves and, consequently, controlling the uncertainty is of paramount interest to maintain a certain level of performance. This is especially true when one needs to design optimal controllers, which are known to be susceptible to modelling errors. Recent advances have it possible to directly quantify and control the uncertainty of a dynamical system. Controlling the uncertainty of a dynamical system implies the ability to control the state distribution over time, a problem that has many applications, including image segmentation, ensemble and swarm control, control of particle beams, neuronal ensembles, and many others — in addition to just reducing the uncertainty in a feedback system. The objective of this workshop is twofold: the first objective is to report on current advances in the area of uncertainty quantification and control to enable resilient and robust operation of dynamical systems and swarms of robots; the second objective is to bring together - in the same room - outstanding researchers from leading institutions who have contributed on this topic over the years. Please see http://uncertainty-synthesis-workshop.ae.gatech.edu/ for additional information.

Workshop Title: Learning, Decision and Control over Networks
Organizers: Vaibhav Srivastava (Michigan State University) and Fabio Pasqualetti (Univ. of California, Riverside)
Additional Speakers: Jorge Cortes (Univ. of California at San Diego), Sonia Martinez (Univ. of California at San Diego), Giuseppe Notarstefano (Univ. of Bologna), Ketan Savla (Univ. of Southern California), Stephen L. Smith (Univ. of Waterloo), and Shaunak D. Bopardikar (Michigan State University)
Time and Location: 8:30 am - 12:30 pm, Méditerranée A3

Abstract: From electric power grid to biological systems to massive transportation systems, socio-technological networked multi-agents systems are ubiquitous across scientific disciplines. In the era of big data, understanding the interplay of learning, decision-making, and control in distributed control of such network systems in vital. Such understanding will empower the future technology to leverage the plethora of data in a systematic and efficient fashion. To this end, a half day workshop is organized that will bring together experts in this area to present the state-of-the-art and discuss future research directions. Space permitting, the workshop will also feature an interactive poster session to facilitate

deeper discussions on the topics. This half-day workshop will feature presentations and discussions from experts in the areas of networked multiagent systems.
Please see https://www.egr.msu.edu/~vaibhav/cdc2019workshop.html for more information.

Workshop Title: Computational Optimal Transport for Applications in Control and Estimation
Organizers and Speakers: Yongxin Chen (Georgia Institute of Technology), Tryphon Georgiou (Univ. of California, Irvine), Johan Karlsson (KTH Royal Institute of Technology), Axel Ringh (Hong Kong University of Science and Technology), and François-Xavier Vialard (University Paris-Est Marne la Vallée)
Time and Location: 1:00 pm - 5:30 pm, Méditerranée A3

Abstract: The optimal mass transport problem is a classical problem in mathematics, and dates back to 1781 and work by Gaspard Monge where he formulated an optimization problem for minimizing the cost of transporting soil for construction of forts and roads. Historically the optimal mass transport problem has been widely used in economics in, e.g., planning and logistics, and was at the heart of the 1975 Nobel Memorial Prize in Economic Sciences. In the last two decades there has been a rapid development of theory and methods for optimal mass transport and the ideas have attracted considerable attention in several economic and engineering fields. These developments have lead to a mature framework for optimal mass transport with computationally efficient algorithms that can be used to address problems in the areas of systems, control, and estimation. This workshop is being organized in order to introduce optimal transport to a larger audience in the CDC community. The main goal of this workshop is to give a tutorial of it, regarding both theoretical and computational aspects, and to present some applications in the areas of control and estimation. Please see https://people.kth.se/~johan79/Workshops/OMT_CDC_2019/ for more information.

Full-day Workshops (8:30 am - 5:30 pm)

1. **Verifiable Adaptive Control Systems and Learning Algorithms**
2. **Mathematical Theory of Control and Signal Processing in the Digital World: A workshop dedicated to Yutaka Yamamoto's 70th birthday**
3. **Model Predictive Control: From the Basics to Reinforcement Learning**
4. **Learning, Games and Control for Security of Cyber-physical Systems**
5. **Resilience and Controllability of Large Scale Systems: A Network-theoretic Approach**
6. **Spatio-Temporal Reasoning for Control of Cyber-Physical Systems**
7. **Neuroscience and Control: the Emerging Intersection**
8. **Model Predictive Control of Hybrid Dynamical Systems**
9. **Lagrangian Control for Traffic Flow Smoothing in Mixed Autonomy Settings**
10. **Finite-, Fixed-, and Prescribed-Time Stabilization and Estimation**
11. **Systems and Control for Smart Society and Cyber-Physical and Human Systems**

Workshop Title: Verifiable Adaptive Control Systems and Learning Algorithms
Organizers and Speakers: Tansel Yucelen (Univ. of South Florida), Anuradha Annaswamy (Massachusetts Institute of Technology), Warren Dixon (Univ. of Florida), K. Merve Dogan (Univ. of South Florida), Jonathan A. Muse (Air Force Research Lab), and Frank Lewis (Univ. of Texas at Arlington)
Time and Location: 8:30 am - 5:30 pm, Galliéni 4

Abstract: A fundamental problem in the design of feedback control architectures is to achieve closed-loop system stability, performance, and robustness against exogenous disturbances and system uncertainties. Unlike fixed-gain control architectures, adaptive control systems offer the capability to deal with exogenous disturbances and system uncertainties, in an online fashion, through learning. This implies that they are not tuned to a worst-case scenario and they continuously improve their performance in real-time. These two appealing aspects make adaptive control systems and learning algorithms important candidates for a wide array of physical systems. Although government and industry agree on their potential in providing vehicle safety and reducing vehicle development costs, a major issue is the lack of system-theoretic methods for their verification, due to their nonlinear nature. Motivated by this standpoint, the objective of this full-day workshop is to cover the state-of-the-art verifiable system-theoretic approaches in adaptive control systems and learning algorithms for their safe and reliable real-world applications. Specifically, the presenters of this workshop will cover topics addressing how to implement adaptive control systems with verifiable transient and steady-state performance guarantees, how to address the presence of actuator and unmodeled dynamics when adaptive control systems are in feedback loops, how to design and analyze adaptive control systems for physical plants with switching modes, and how to advance adaptive control systems with system-theoretic guarantees using tools and methods from machine and reinforcement learning. This workshop will be relevant to practicing professionals from electrical, mechanical, and aerospace industries. It also intends to cultivate new future research directions under a panel discussion involving organizers and expected workshop attendees. Finally, this workshop is expected to be a great value to experts and students in the adaptive control systems and learning algorithms fields.
Please see http://lacis.eng.usf.edu/page6/index.html for additional information.

Workshop Title: Mathematical Theory of Control and Signal Processing in the Digital World: A workshop dedicated to Yutaka Yamamoto's 70th birthday
Organizers: Masaaki Nagahara (The Univ. of Kitakyushu), Hideaki Ishii (Tokyo Institute of Technology), Kenji Kashima (Kyoto University), Kenji Sugimoto (Nara Institute of Science and Technology)
Additional Speakers: Please see http://www.sc.dis.titech.ac.jp/yy_workshop_cdc19/
Time and Location: 8:30 am - 5:30 pm, Méditerranée A1

Abstract: This workshop is organized to celebrate Professor Yutaka Yamamoto's 70th birthday and honor his long-lasting contributions to mathematical theory of control and signal processing. This workshop will bring together his colleagues who will present a broad range of topics related to control and signal processing for the digital world. In particular, the speakers will present talks on robust control, stochastic systems, signal processing, and system identification. The goal of this workshop is to inspire a future generation of researchers.
Please see http://www.sc.dis.titech.ac.jp/yy_workshop_cdc19/ for additional information.

Workshop Title: Model Predictive Control: From the Basics to Reinforcement Learning
Organizers and Speakers: Alberto Bemporad (IMT Lucca) and Mario Zanon (IMT Lucca)
Time and Location: 8:30 am - 5:30 pm, Galliéni 7

Abstract: In spite of its long tradition of success as a very powerful and versatile advanced control technique, the interest of industry and academia in model predictive control (MPC) is strongly growing, and MPC is spreading to a large variety of application domains. While most of the attention has been focused so far on computational efficiency and closed-loop performance, as the use of MPC in industrial production is increasing the time required to develop an MPC solution has also become of strong importance. Development time is mainly due to constructing suitable prediction models and to

calibrating the resulting controller. Reinforcement learning, and more generally data-driven synthesis of MPC laws, has recently attracted a lot of attention to possibly reduce such development time. This workshop aims at providing an overview of several techniques for practical use of MPC, covering linear, hybrid, and nonlinear MPC formulations and various computational methods that can be used to effectively compute the MPC action in real-time. The workshop also aims at bringing the attendees towards understanding emerging reinforcement learning and policy search methods for tuning MPC controllers directly from data for reduced design and calibration effort. Emphasis will be given to understanding the necessary theoretical background that leads to the successful implementation of MPC in practice, addressing advantages and potential difficulties. During the workshop pointers towards dedicated software will be given, so that the attendees will be able to not only properly formulate the problem, but also to solve it using state-of-the-art tools. The workshop is organized as a tour, starting from the most basic and standard formulations based on deterministic linear systems with quadratic costs, and following the road towards more advanced formulations, including hybrid, stochastic, nonlinear, and economic MPC. The last part of the workshop will be dedicated to presenting promising results in data-driven learning of control laws that have a great potential of use in MPC, with the intention of also triggering further research ideas in the audience. A few practical case studies will be described so as to also motivate the practical and industry-oriented flavor of the workshop. Please see http://dysco.imtlucca.it/mpc-cdc19 for additional information.

Workshop Title: Learning, Games and Control for Security of Cyber-physical Systems
Organizers: Quanyan Zhu (New York University) and Radha Poovendran (University of Washington)
Additional Speakers: Tamer Basar (UIUC), Joao Hespanha (UCSB), Linda Bushnell (Univ. of Washington), Hideaki Ishii (Tokyo Institute of Technology), Karl Johannsson (KTH), and others.
Time and Location: 8:30 am - 5:30 pm, Méditerranée 1

Abstract: The topic of this workshop is the control and secure operation of cyber-physical systems (CPSs) using perspectives from game theory and machine learning. Cyber-physical systems are complex entities where the working of a physical system is governed by its interactions with computing devices and algorithms. These systems are ubiquitous. Examples range from medical devices and robots on a small scale, to power systems and connected communities on a large scale. CPSs are expected to operate in dynamically changing environments, which could result in them being the target of malicious attacks that aim to prevent them from accomplishing a goal. Strategies to mitigate the effect of an attack must take into consideration the fact that adversaries are often stealthy, intelligent, and persistent. This workshop will feature talks by leading experts whose recent work uses game theory and data-driven approaches to model and analyze the security of CPSs. The workshop also plans to feature a presentation by a representative from a funding agency, and a panel discussion in order to identify open research problems that will be of interest to the broader community.
Please see https://wp.nyu.edu/quanyan/cdc-2019-workshop/ for additional information.

Workshop Title: Resilience and Controllability of Large Scale Systems: A Network-theoretic Approach
Organizers: Mohammad Pirani (Univ. of Toronto), Shreyas Sundaram (Purdue University), and Victor Preciado (Univ. of Pennsylvania)
Additional Speakers: Sonia Martinez (Univ. of California, San Diego), Nader Motee (Lehigh University), Stacy Patterson (Rensselaer Polytechnic Institute), Sergio Pequito (Rensselaer Polytechnic Institute), Iman Shames (Univ. of Melbourne), Shreyas Sundaram (Purdue University), Joshua Taylor (Univ. of Toronto), and Daniel Zelazo (Technion-Israel Institute of Technology)
Time and Location: 8:30 am - 5:30 pm, Méditerranée 2

Abstract: Large-scale systems play a central role in a multitude of applications, from power grids and smart buildings to aerospace systems, swarm robotics, social networks, and intelligent transportation systems. As the scale of networked control systems increases and interactions between different subsystems become more sophisticated, questions of controllability, observability, and resilience of such networks increase in importance. The need to redefine classical system and control theoretic notions into the language of networks has recently started to gain attention as a fertile and important area of research. A key challenge for the controls community is thus to understand how to leverage network theory along with systems and control to analyze the controllability, observability, and resilience of large-scale interconnected systems. The IEEE Conference on Decision and Control, as one of the premier annual gatherings of researchers in the field of systems and control, is a perfect venue for a workshop on network-theoretic approaches to controlling large scale systems. The goal of this workshop is to present the challenges in this area, together with tools and approaches that have been recently developed to address this problem. In particular, the key emphasis of this workshop will be on the use of graph-theoretic approaches to large-scale systems analysis, which will differentiate it from other workshops on control and security of centralized systems. The target audience is students, researchers and practitioners from academia and industry who are interested in learning about (and contributing to) the emerging field of network control systems. The workshop will be highly interactive and will feature tutorial-style talks by leading experts in the field, giving the audience a perspective of how network theory plays a role in the resilience and control of large scale systems, and how to best combine different perspectives to develop efficient, reliable and resilient systems.
Please see https://cdc2019.ieeecss.org/workshops.php#w2430 for additional information.

Workshop Title: Spatio-Temporal Reasoning for Control of Cyber-Physical Systems
Organizers: André de Matos Pedro and Laura Nenzi
Additional Speakers: Calin Belta (Boston University), Michel Loreti (Univ. of Camerino), Ezio Bartocci (TU Wien), Jane Hillston (Univ. of Edinburgh), Roman Kontchakov (Univ. of London), Jana Tumova (KTH Royal Institute of Technology), Necmiye Ozay (Univ. of Michigan), Christos Tsigkanos (TU Wien), and Martin Leucker (Univ. of Lübeck)
Time and Location: 8:30 am - 5:30 pm, Méditerranée C4

Abstract: This workshop aims to present the most recent advances in the development of logic-based procedures for the analysis and control of spatially distributed Cyber Physical Systems (CPS), with particular emphasis on the combination of temporal and spatial behaviors. Spatially distributed CPS, such as robotic swarms and smart environments, often exhibit multiple and unpredictable behaviors that increase the efforts needed in their analysis. Studying and controlling such systems requires a growing demand for efficient tools capable of dealing with such complex behavioral patterns. Spatio-temporal logic is an innovative way to reason and face such challenges. This workshop has the dual objective: (1) showing the usefulness of spatio-temporal logic to the control community in the context of spatially distributed CPS and (2) highlighting what are the main important challenges in the analysis of such systems that logic community can help to solve in the near future. Several case studies will be considered to discuss the real usefulness of these methodologies. This will lay the foundations for a verification framework of spatially distributed CPS as well as fill the gap between theory and practice of CPS design, deployment and testing, with particular emphasis in the decision procedures and monitoring mechanisms. Please see http://strcc.isp.uni-luebeck.de for additional information.

Workshop Title: Neuroscience and Control: the Emerging Intersection
Organizers: Sergio Pequito (Rensselaer Polytechnic Institute) and Alexander Medvedev (Uppsala University)
Additional Speakers: Erfan Nozari (Univ. of California, San Diego), John Doyle (CalTech), Arian Ashourvan (Univ. of Pennsylvania), Tim Denison (Oxford University), and Miroslav Pajic (Duke University).
Time and Location: 8:30 am - 5:30 pm, Méditerranée A2

Abstract: The last years have witnessed a fast development of models, tools, and experiments aimed at understanding neural circuitry and brain dynamics. This workshop brings together researchers from different backgrounds to demonstrate how the theory of dynamical systems and control engineering successfully enable new insights into neuroscience and emerging neural technology. More specifically, the scope of the talks covers such topics as mathematical modeling and analysis of neural populations, intracranial electrical stimulation in rehabilitation technology and prosthetics, brain-machine interfaces, and uncovering the drivers of brain activity. We propose to not only present and address some of the fundamental problems in this research area but also to raise more questions for future research within the controls community. Subsequently, we believe that these sessions will have a profound effect on our understanding of brain dynamics and actuation mechanism. A healthy mixture of theoretically oriented talks with more applied ones will take place, thus maximizing the relevant audience, and attracting new researchers in these exciting problems, creating a larger yet focused community. Please see https://sites.google.com/site/neurocontrolcdc19/home for additional information.

Workshop Title: Model Predictive Control of Hybrid Dynamical Systems
Organizers: Berk Altın (Univ. of California, Santa Cruz) and Ricardo G. Sanfelice (Univ. of California, Santa Cruz)
Additional Speakers: Francesco Ferrante (Univ. Grenoble Alpes), Mohamed A. Maghenem (Univ. of California, Santa Cruz), and Sean Phillips (Air Force Research Laboratory)
Time and Location: 8:30 am - 5:30 pm, Galliéni 1

Abstract: Hybrid systems model the behavior of dynamical systems where the states can evolve continuously as well as instantaneously. Such systems arise when control algorithms that involve digital devices are applied to continuous-time systems, or due to the intrinsic dynamics (e.g. mechanical systems with impacts, switching electrical circuits). Hybrid control may be used for improved performance and robustness properties compared to conventional control, and hybrid dynamics may be unavoidable due to the interplay between digital and analog components of a system. This workshop is a complete course on the analysis and design of model predictive control (MPC) schemes for hybrid systems. It presents recently developed results on asymptotically stabilizing MPC for hybrid systems based on control Lyapunov functions. The workshop provides a detailed overview of the state of the art on hybrid MPC, and a short tutorial on a powerful hybrid systems framework (hybrid inclusions) that can model hybrid dynamics described in other frameworks (e.g. switched systems, hybrid automata, impulsive systems). Key analysis tools in this setting are demonstrated, along with several advantages over other frameworks. This background is then used to lay the theoretical foundations of a general MPC framework for hybrid systems, with guaranteed stability and feasibility. The ideas are illustrated in several applications. The workshop targets a broad audience in academia and industry, including graduate students, looking for an introduction to an active area of research and some modern mathematical analysis tools; control practitioners interested in novel design techniques; researchers in dynamical systems in pursuit of relevant applications; and researchers in industry and labs applying hybrid predictive control methods to engineering systems. The required background is basic familiarity

with continuous- and discrete-time nonlinear systems. The lectures are closely related to each other and not meant to be independent research presentations.
Please see https://hybrid.soe.ucsc.edu/hybridmpccdc19 for additional information.

Workshop Title: Lagrangian Control for Traffic Flow Smoothing in Mixed Autonomy Settings
Organizers: **A**lexandre Bayen (UC Berkeley), George J. Pappas (Univ. of Pennsylvania), Benedetto Piccoli (Rutgers University), Daniel B. Work (Vanderbilt University), Jonathan Sprinkle (University of Arizona), Maria Laura Delle Monache (INRIA), Benjamin Seibold (Temple University), Cathy Wu (MIT), Abdul Rahman Kreidieh (UC Berkeley), Eugene Vinitsky (UC Berkeley), Yashar Farid (UC Berkeley)
Time and Location: 8:30 am - 5:30 pm, Galliéni 2

Abstract: The field of transportation is undergoing profound and rapid disruptions, led in part by revolutions in automation, electrification, and data science / machine learning. In particular, the rapid emergence of autonomous vehicle (AV) technology and its potential as a means of Lagrangian control has led many to ask the question: How can AVs in the presence of human-driven vehicles improve the flow of traffic? In order to shed some light on this topic, this workshop discusses the mathematical, engineering, and technological advances in a group of fields that are steadily enabling vehicle automation as a viable means of traffic flow control:

1. Means Field Models and Traffic Aggregation: The complexity of the traffic flow dynamics (e.g. multi-lane dynamics, merges, ramps, non-FIFO assumptions) necessitates the use of abstraction models to overcome the complexity of the dynamics of single agents (vehicles), which make full analytical approaches nearly intractable. We present advances in systematic approaches to aggregate (human-driven) traffic flow actuated by Lagrangian controllers (AVs), via mean field equations and coupled PDE-ODE systems.
2. Deep Reinforcement Learning (RL): Recent years have seen RL emerge as a promising framework for control of complex dynamical systems. This is particularly appealing in the context of traffic, which itself exhibits the rich, complex behaviors. We present techniques for applying scalable RL techniques to mixed-autonomy traffic. This includes topics such as decentralization, and methods for generating policies that are transferable to actual networks.
3. Verification of Deep Neural Networks (DNNs): The rise of deep RL as a means of control has been treated with some skepticism, attributed in part to the black-box nature of DNNs. In a setting where humans and actuated devices are expected to interact with one another, this serves as a significant barrier to deployment. In response to this, we present techniques for verifying the safety properties of DNNs using algorithms for satisfiability modulo convex optimization.

Please see https://flow-project.github.io/tutorial.html#cdc2019 for additional information.

Workshop Title: Finite-, Fixed-, and Prescribed-Time Stabilization and Estimation
Organizers: Denis Efimov (INRIA), Miroslav Krstic (UC San Diego), Wilfrid Perruquetti (Centrale Lille), Andrey Polyakov (INRIA), and Drew Steeves (UC San Diego)
Time and Location: 8:30 am - 5:30 pm, Galliéni 3

Abstract: The goal of this workshop is to present recent advances in the design and analysis of control and estimation algorithms with accelerated convergence rates. The focus is to exhibit algorithms which ensure finite-, fixed- or prescribed-time convergence. The associated approaches and related properties that will be covered include: homogeneity, the implicit Lyapunov function method, time-varying

damping, and discretization tools for highly nonlinear systems. Recent interest in these more demanding types of stability is due to emerging applications (e.g., flying robots, cyber-physical systems) which have strict performance requirements regarding convergence rate, robustness and scalability. Conventional control and estimation methods fail to meet these demands. As such, the aforementioned approaches have been developed or extended to meet these strict targets and will be at the forefront of this workshop. Please see https://team.inria.fr/valse/fr/full-day-workshop-finite-fixed-prescribed-time-stabilization-and-estimation-ieee-cdc-2019/ for additional information.

Workshop Title: Systems and Control for Smart Society and Cyber-Physical and Human Systems
Organizers: Toru Namerikawa (Keio University), Masaaki Nagahara (The University of Kitakyushu), Takeshi Hatanaka (Osaka University)
Additional Speakers: Pramod Khargonekar (UC Irvine), Anuradha Annaswamy (MIT), Rong Su (Nanyang Technological University), Dario Bauso (Univ. of Groningen), and Scott J. Moura (UC Berkeley)
Time and Location: 8:30 am - 5:30 pm, Méditerranée 5

Abstract: Many nations are promoting projects to realize smart society through tight intertwinement between cyber and real-physical components. To this end, the framework of Cyber-Physical Systems (CPS) has successfully enabled multidisciplinary research that involves control systems, communications, networking, sensing and computing to develop new theoretical foundations/tools as well as major technological applications, including transportation, aerospace, health and medicine, robotics, manufacturing, energy management, and environment and sustainability. Construction of smart society requires not only to design these individual smart systems but also to coordinate these systems in a stable, optimal, and economically enabled fashion. A goal of this workshop is to discuss how the global perspective inherent in systems and control could contribute to designing such smart systems. Another main issue of this workshop is how to design Cyber-Physical & Human Systems (CPHS). In smart society, human factors must be naturally involved in the overall system and they must interact with the CPS in various ways at various levels. It is thus evident that the ultimate societal outcomes of future CPHS technologies will depend crucially on deeper understanding of the interactions between cyber-physical systems and humans, and on how to integrate the human factors and their models into the CPS design in order to bring the best outcomes for individuals, organizations, and the society. Revolutionary advances in data science, machine learning, and artificial intelligence technology have opened up new possibilities of rigorously analyzing/modeling humans, not necessarily obeying any physical law, under interaction with CPS. We believe that now is an opportune time to discuss how to best consider human factors in the control loop. This workshop presents state-of-the-art research outcomes on CPHS in some key application fields including intelligent transportation, aerospace systems and robotics. Please see http://is.eei.eng.osaka-u.ac.jp/hatanaka/CDC/index.php for additional information.

Social Program

Welcome Reception:	Tuesday, December 10th, 6:30-8:30 pm	Agora 3
Women in Control Luncheon Meeting:	Wednesday, December 11th, 12:00-1:30 pm	Agora 3
Newcomers' Reception:	Wednesday, December 11th, 6:30-8:30 pm	Lounge Bar Mikonos
CSS Awards Ceremony:	Thursday, December 12th, 6:45-8:15 pm	Hermès
Conference Banquet:	Thursday, December 12th, 8:15-11 pm	Muses
Farewell Reception:	Friday, December 13th, 6:30-8:30 pm	Agora 3
Coffee Breaks:	Wednesday-Friday, December 11-13 9:30-10 am and 4:00-4:30 pm	Rhodes Exhibition Area

Women in Control Luncheon Meeting

Time and Location: Wednesday, December 11th, 12:00-1:30 pm, Agora 3

The IEEE CSS Women in Control committee is responsible for, but not limited to, promoting membership, gathering and disseminating appropriate information about women in IEEE CSS and the profession, and facilitating the development of mentoring and programs to promote the retention, recruitment, and growth of women IEEE CSS members. The IEEE WiC invites all CDC women to join us for our traditional luncheon on the first day of the conference, Wednesday, December 11th, 2019.

Conference Information

Registration

All conference attendees must register. Personal badges are provided to identify registered participants. Packet pick-up for advanced registrants and on-site registration are available at the Welcome Desk, which will be open from the afternoon of Monday, December 9 through the morning of Friday, December 13. Hours of operation of the Welcome Desk are as follows:

Monday, December 9	16:30 – 18:30
Tuesday, December 10	7:30 – 20:00
Wednesday, December 11	7:30 – 18:30
Thursday, December 12	7:30 – 18:30
Friday, December 13	7:30 – 15:00

All registered participants receive full access to the technical sessions, coffee breaks, opening and closing receptions, and one set of conference proceedings on a USB flash drive. Full rate registrations (Member or Non-member) also include one banquet ticket.

Registration fees are shown in the table below. Please note that only conference attendees who have registered for the conference can register for the workshops.

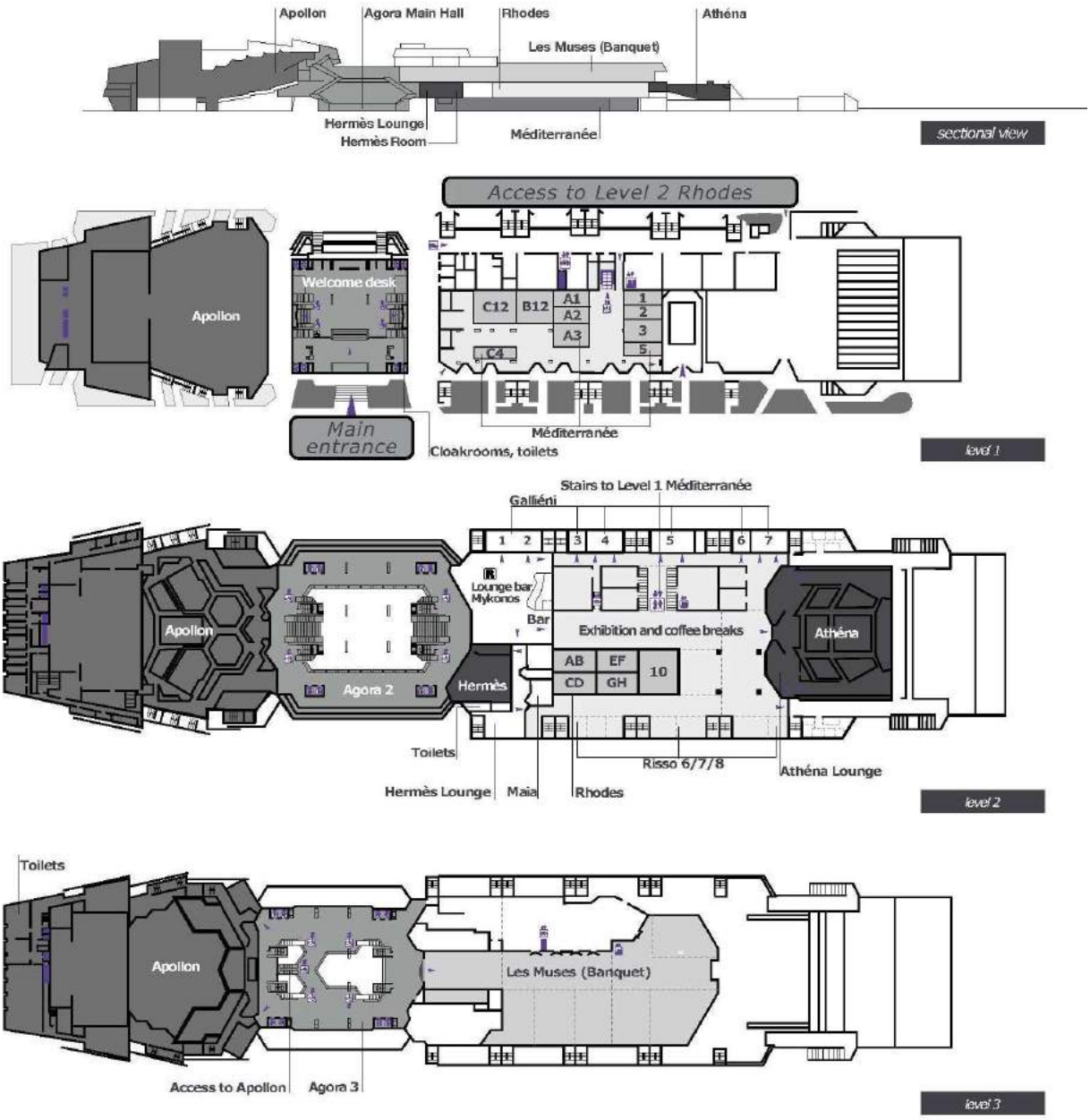
Category	Till Oct. 1	From Oct. 2	Number of paper uploads	Conference Banquet	Electronic Proceedings	Workshop Registration Fee			
						Full-day		Half-day	
	Advance Rate	Standard Rate				Till Oct. 1	From Oct. 2	Till Oct. 1	From Oct. 2
Member	550 EUR	700 EUR	3 Included	1 Included	1 Included	170 EUR	250 EUR	90 EUR	130 EUR
Non-member	700 EUR	850 EUR	3 Included	1 Included	1 Included	170 EUR	250 EUR	90 EUR	130 EUR
Life member	300 EUR	400 EUR	3 Included	Not Included	1 Included	85 EUR	100 EUR	45 EUR	55 EUR
Student/Retiree Member	275 EUR	350 EUR	1 Included	Not Included	1 Included	85 EUR	100 EUR	45 EUR	55 EUR
Student/Retiree Non-member	350 EUR	400 EUR	1 Included	Not Included	1 Included	85 EUR	100 EUR	45 EUR	55 EUR

For all categories, the cost of extra paper uploads is 200 EUR per paper. The cost of an additional 7th or 8th page in the final paper is 200 EUR per page. Extra banquet tickets can be purchased for 120 EUR. Extra proceedings (USB) can be purchased for 50 EUR.

Conference Venue

The conference will be held at the Acropolis Convention centre located in the city-centre of Nice. Conference activities are spread over the three levels of the building.

Room Plan



Important Information

- Conference rooms are located on first, second and third floor.
- Workshops will be held in Méditerranée (Level 1) and Galliéni (Level 2) rooms.
- Plenary Sessions will be held on the second level (Athéna and Apollon rooms).
- Coffee Breaks will take place in the Rhodes Exhibition Area (Level 2).
- The building will be open from 7:30 am.
- The Registration Desk is located in front of the main entrance.
- Cloakrooms are available at the entrance.
- Security checks at the entrance may cause delays. Please, come early to be sure to be on time.

Meetings at Novotel

Some technical meetings will be held in “Novotel Nice Centre Vieux Nice”, which is reachable on foot in about 8 minutes from the congress venue Acropolis (see map). The Novotel rooms are Chagall, Cheret, Matisse and Garibaldi and are all located on the first floor of the hotel. See the access map on the right.

Local Attractions

With the sun present 300 days a year, its historical and cultural richness, the changing reflections of the sea, the peaks that dominate it, its brilliant beauty, its colourful accent, Nice is one the most beautiful city in France. With its special light, all those who have approached Nice keep in them the memory of a rare and precious moment.

In the “piazzettas” which are the typical streets, on the beaches and the wooded parks, with the markets and the colourful gastronomy, for a drink on the terrace or a walk around the harbour, you will love this city... Nice to be in Nice, which is also the capital of the art of living.

The history of Nice dates back to 350 BC, when the Greeks established a place on the shores of the Mediterranean Sea, called Nikaia, according to Nike, the Greek goddess of victory. On the other hand, in order to obtain an adequate image of the site's historical past, it should be mentioned that the current Nice area has been populated since prehistoric times. Also, thanks to its luminosity and its beauty, Nice have always inspired the greatest masters in different fields as architecture, painting, music and cinema. To attest, there is of course the old Nice, ambassador of Sardinian architecture, the palaces and castles with Baroque style, the concentration of museums and art galleries. But beyond the visible, there is this little extra soul, this particular atmosphere, capable of inspiring you with authentic emotions, and at the crossroads of cultures.

Walk through the old part of town is very pleasant and has a good vibe both by day and night. By strolling through the little lanes, walkers discover the city’s history and a lot of small boutiques and restaurants. On the street corner, you can hear Nissart being spoken, a dialect derived from the Oc language. The City of Nice has several parks and gardens, such as the Jardin Albert 1er, the Hanging Gardens of Paillon, the Cimiez Monastery Gardens and the gardens at the Cimiez Arenas… You can also walk in the park at the Château de Nice and the Mont-Boron forest park. Finally, you mustn’t miss Parc Phoenix. This area is home to one of the largest tropical greenhouses in the world. There are also botanical gardens and temporary exhibitions.

In addition to the Old Nice District, a place where you absolutely must visit the small regional stores; Rue Jean Médecin also has many boutiques of all kinds. Halfway down the road, one comes across the large «Nice Etoile» shopping center. Near Place Masséna, next to Rue Jean Médecin, there is a pedestrian precinct: Rue de France has several shops and some restaurants. Other "musts" to visit are the "Marché aux Fleurs" (flower market) and the Cours Saleya (fruit, vegetable and fish market).

Nice is also a capital of gastronomy. In addition to its delicate dishes based on olive oil, garlic, and vegetables, Nice is famed as the home of socca, a small pancake made with chick pea flour, not forgetting the famous ratatouille, the little Farci Niçois or stuffed vegetables, pissaladière (a savoury tart), tourte de blettes (sweet or savoury pies), zucchini flower fritters, and the famous «salade niçoise». On the sandwich side, the Pan Bagnat is the king. As for dessert, apart from ice-cream from Old Nice, there are whole candied fruits, specialities from certain confectioneries, such as Florian and Auer, which can also be found at the Cours Saleya Market.

Nice offers more than fifteen museums, with rich collections. Nice is an exceptional city, featuring a rich cultural and artistic heritage. The pace of cultural life is regulated by the exhibitions in the museums and galleries, events in the theatres and shows at the Nice Opera House.

Nice is distinguished by a wide variety of architectural styles, originating from different periods. Over the centuries of its history, Nice has retained the imprint of each age. More information at www.nicetourisme.com.

TRANSPORTATION. Looking for a fast, easy and affordable way to check out Nice's amazing attractions? Mobil'azur offers several public transportation options. With the two lines of the tramways, you can easily cross Nice. T2 "Ouest-Est" crosses the city from east to west, to connect the city center to the airport (via the future eco-valley station) in 20 minutes.

Nice offers a dense and very extensive bus network (get a map), with frequent connections! You can reach all the districts of Nice by bus, up to the hills. Buses from Nice operate every day. For night trips, 5 Nocbus lines are available: tram line T1 until 1:35 am and from 4:25 am and 5 bus lines from Jean-Claude-Bermond station, to Cimiez, Madeleine, Nice-East, West and North, run from 21:10 to 1:10 am.

VéloBleu also operate to discover Nice by bicycles. 1 750 self-service bicycles available every day at 175 stations throughout the city.

To learn more about public transportation options, visit https://www.lignesdazur.com/en
HOP-ON HOP-OFF BUSES TRANSPORTATION. Nice Le Grand Tour https://www.nicelegrandtour.fr/en/

NATURE, PARKS & GARDENS. Visit stunning botanical gardens, greens areas or explore our parks.

Monastère de Cimiez Garden
Place du Monastère de Cimiez
en.nicetourisme.com/parks-and-gardens

Phoenix Park
405 Promenade des Anglais, Nice
+33 4 92 29 77 00

MONUMENTS AND CHURCHES. Baroque-style palaces and churches, colourful facades and narrow streets.

Cadran Solaire
Quai Rauba Capeu
en.nicetourisme.com/nice/75-le-cadran-solaire

Sainte-Jeanne d'Arc Church
11 rue Grammont, Nice
+33 4 93 86 33 07

https://parc-phoenix.org

Botanical Garden
78 Avenue de la Corniche-Fleurie
+33 4 92 29 41 80
https://en.nicetourisme.com/nice/104-jardin-botanique

Colline du Château Park
Rue des Ponchettes – Rue de Foreta
en.nicetourisme.com/nice/92-parc-de-la-colline-du-chateau

Albert 1er Garden
1 Promenade des Anglais
en.nicetourisme.com/nice/91-jardin-albert-1er

Le Mont Boron
Route du Mont-Boron, Nice
en.nicetourisme.com/nice/101-parc-forestier-du-mont-boron

HISTORIC LANDMARKS. From Pre-Neanderthal to now, discover the historic landmarks which built Nice.

Cours Saleya
Rue Saint-François-de-Paule, Nice
en.nicetourisme.com/nice/45-cours-saleya

Place Masséna
City Center
en.nicetourisme.com/nice/63-la-place-massena

Place Rossetti
City Center
en.nicetourisme.com/nice/57-la-place-rossetti

Promenade des Anglais
Nice
en.nicetourisme.com/nice/64-la-promenade-des-anglais

Old Nice
City Center
en.nicetourisme.com/nice/82-eglise-sainte-jeanne-d-arc

Lascaris Palace
15 rue Droite, Nice
+33 4 93 62 72 40
en.nicetourisme.com/nice/53-palais-lascaris

Centenaire Monument
Albert 1er Garden, Nice
en.nicetourisme.com/nice/65-monument-du-centenaire

Saint-Nicolas Cathedral
Avenue Nicolas II
+ 33 9 81 09 53 45
https://www.sobor.fr

Méditerranean Palace
11 Promenade des Anglais, Nice
en.nicetourisme.com/nice/66-le-palais-de-la-mediterranee

MUSEUMS. Nice offers more than fifteen museums with an exceptional collection through a universal museum route.

Masséna Museum
65 rue de France, Nice
+33 4 93 91 19 10
en.nicetourisme.com/nice/186-musee-massena

National Marc Chagall Museum
Avenue Dr Ménard, Nice
+33 4 93 53 87 20
https://it.musees-nationaux-alpesmaritimes.fr/chagall/

Matisse Museum
164 Avenue des Arènes de Cimiez, Nice
+33 4 93 81 08 08
musee-matisse-nice.org/?_locale=en

MAMAC Museum
1 Place Yves Klein, Nice
+33 4 97 13 42 01

Flower Market
Cours Saleya, Nice

Fruit and Vegetables Market
Avenue Malausséna, Place du Général de Gaulle

Book Market
Place du Palais de Justice, Nice

Art-filled Market by Night
Cours Saleya, Nice

Fish Market
Place Yoja, Nice

http://www.mamac-nice.org

Archeologic Museum
160 Avenue des Arènes de Cimiez, Nice
+33 4 93 81 59 57
en.nicetourisme.com/nice/185-musee-d-archeologie-de-nice-cimiez

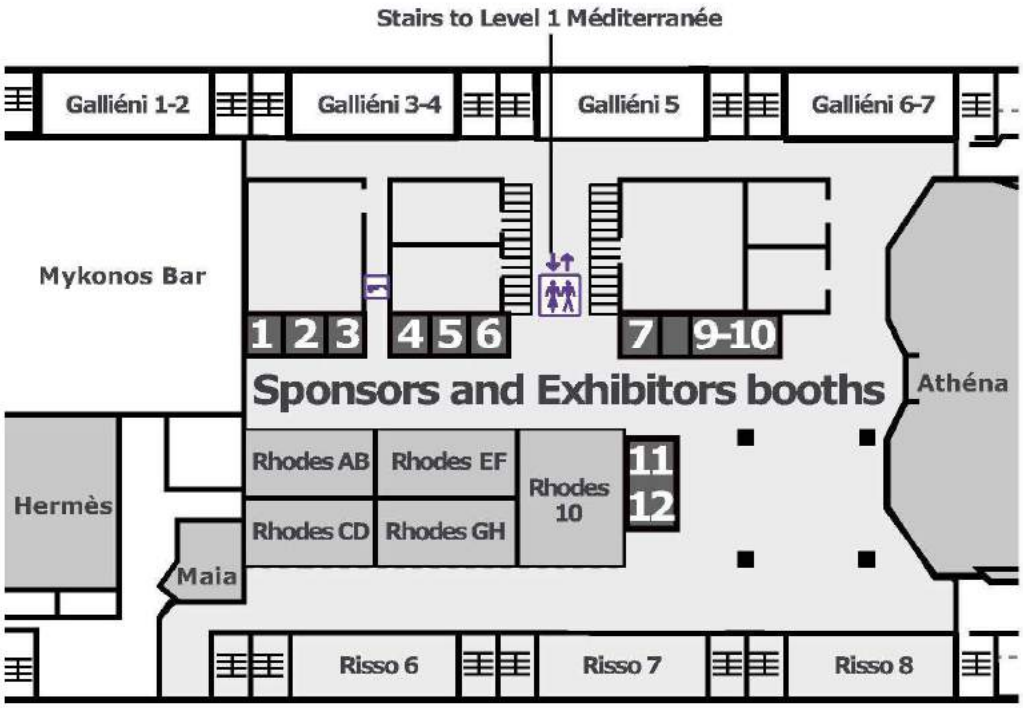
History Natural Museum
60 Boulevard Risso, Nice
+33 4 97 13 46 80
http://mhnnice.org

Sponsors and Exhibitors

Exhibition Hours:

	Wednesday, December 11:	8:30 am - 6:30 pm
	Thursday, December 12:	8:30 am - 6:30 pm
	Friday, December 13:	8:30 am - 4:00 pm

Exhibition Location: Rhodes Exhibition Area



Booth occupation

D-ICE ENGINEERING	Booth n° 6
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the Internet to Poland, and today is offering innovative ICT solutions for research institutions, as well as financial, business and administration clients. NASK also keeps the .pl domain name registry. See more on: eng.nask.pl.

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Copper sponsor

ANT-X provides a complete laboratory facility for research and education in multi-agent systems, flight robotics, flight control and aerospace control in order to satisfy the need for a ready to use and customizable platform for research and education. The ANT-X laboratory will enable academic researchers to achieve a fast transition to practice of advanced design methods for GNC systems and enrich the students' experience in flight robotics and UAV control through hands-on experimental activities. See more at https://antx.it.

Check the conference app and webpage for an updated list of sponsors and exhibitors.

2019 IEEE CSS Awards

Every year the IEEE and the Control Systems Society recognize the outstanding contributions of individuals belonging to our technical community by giving a number of awards. The Society is very appreciative of the work each corresponding committee or subcommittee devotes to the selection process.

The 2019 IEEE CSS Awards Chair is Tryphon T. Georgiou, and the subcommittee Chairs are:

- Kirsten Morris — George S. Axelby Outstanding Paper Award
- Alessandro Astolfi — Antonio Ruberti Young Researcher Prize
- Jan Tommy Gravdahl — IEEE Trans. on Control Systems Technology Outstanding Paper Award
- Sonia Martinez — IEEE Control Systems Magazine Outstanding Paper Award
- Reza Moheimani — Control Systems Technology Award
- Shah Shirish — Control Systems Society Transition to Practice Award
- Paulo Tabuada — Transactions on Control of Network Systems Outstanding Paper Award
- Graziano Chesi — Conference on Decision and Control Best Student Paper Award
- George Pappas — IEEE Control Systems Letters Outstanding Paper Award
- Thomas Parisini — Roberto Tempo Best CDC Paper Award
- Kevin Wise — Technical Excellence in Aerospace Control Award

More details about the IEEE CSS awards, the nomination process and past winners can be found on the IEEE CSS web site http://ieeecss.org/awards/awards-program.

CSS Distinguished Member Awards

CSS also annually confers Distinguished Member Awards to selected members of our community who have made significant technical contributions as well as having provided outstanding long-term service to the Control Systems Society. The 2019 award went to Daniel Eduardo Rivera “for outstanding long-term service to the Control Systems Society most notably for leadership of the CSS Outreach Program” and Venkataramanan Balakrishnan “for outstanding long-term service to the Control Systems Society through governance and leadership in the CSS Board of Governors and Executive Committee”.

Outstanding Chapter Award

The Outstanding Chapter Award recognizes a chapter for demonstrating a high level of activity, innovation, or growth. The Vice-President of Member Activities, Magnus Egerstedt, was responsible for this award. The 2019 Award went to the Chile Section Chapter, chaired by Gaston Lefranc, “for its technical events focused on the promotion and advancement of Control Systems during 2018”.

CDC Outstanding Student Paper and Best Student Paper Awards

The CDC Outstanding Student Paper and Best Student Paper Awards recognize excellence in a paper presented at the IEEE Conference on Decision and Control whose primary author is a student member of the IEEE. One of the Outstanding Student Paper awardees will be selected as the winner of the Best Student Paper award and will receive that award in lieu of the Outstanding Student Paper award. The awards are based on the paper’s originality, clarity, and potential impact on practical applications or

theoretical foundations of control. The CDC Outstanding Student Paper Award winners and finalists for the Best Student Paper Award are:

Finalist: Lars Lindemann (llindem@kth.se)
Advisor: Dimos V. Dimarogonas (dimos@kth.se)
Paper title: Control Barrier Functions for Multi-Agent Systems under Conflicting Local Signal Temporal Logic Tasks
Paper authors: Lars Lindemann, Dimos V. Dimarogonas
Session: ThA25.3

Finalist: Jin-Won Kim (jkim684@illinois.edu)
Advisor: Prashant G. Mehta (mehtapg@illinois.edu)
Paper title: What is the Lagrangian for Nonlinear Filtering?
Paper authors: Jin-Won Kim, Prashant G. Mehta, Sean P. Meyn
Session: WeB19.1

Finalist: Michael W. Fisher (fishermw@umich.edu)
Advisor: Ian A. Hiskens (hiskensg@umich.edu)
Paper title: Numerical Computation of Critical System Recovery Parameter Values by Trajectory Sensitivity Maximization
Paper authors: Michael W. Fisher, Ian A. Hiskens
Session: FrC14.1

Finalist: Shiba Biswal (sbiswal@asu.edu)
Advisor: Spring Berman (spring.berman@asu.edu)
Paper title: Fastest Mixing Markov Chain on a Compact Manifold
Paper authors: Shiba Biswal, Karthik Elamvazhuthi, Spring Berman
Session: WeA16.2

The winner of the IEEE 2019 CDC Best Student Paper award will be announced at the Award Ceremony.

CSM Outstanding Paper Award

The IEEE Control Systems Magazine Outstanding Paper Award is given for an article or column published during the two calendar years prior to the year of the award and is based on impact and benefit to CSS members. The 2019 Award was not assigned.

TCNS Outstanding Paper Award

The IEEE Transactions on Control of Network Systems is given for a paper published during the two calendar years prior to the year of the award and is based on originality, potential impact on the foundations on network systems, importance and practical significance in applications, and clarity. The 2019 Award was given to Erfan Nozari, Pavankumar Tallapragada, and Jorge Cortés for the paper "Differentially Private Distributed Convex Optimization via Functional Perturbation", IEEE Transactions on Control of Network Systems, Vol. 5, No. 1, pages 395-408, 2018.

TCST Outstanding Paper Award

The IEEE Transactions on Control Systems Technology Outstanding Paper Award is given for an outstanding paper published during the two calendar years prior to the year of the award, and is based on originality, relevance of the application, clarity of exposition, and demonstrated impact on control systems technology. The 2019 Award was given to Alberto Leva, Federico Terraneo, Irene Giacomello, and William Fornaciari for the paper "Event-Based Power/Performance-Aware Thermal Management for High-Density Microprocessors", IEEE Transactions on Control Systems Technology, Vol. 26, No. 2, pages 535-550, 2018.

George S. Axelby Outstanding Paper Award

The George S. Axelby Outstanding Paper Award is given for an outstanding paper published in the IEEE Transactions on Automatic Control during the two calendar years prior to the year of the award, and is based on originality, clarity, potential impact on the theoretical foundations of control, and practical significance in applications. The 2019 award was given to Gunther Reissig, Alexander Weber, Matthias Rungger for the paper "Feedback Refinement Relations for the Synthesis of Symbolic Controllers," IEEE Transactions on Automatic Control, Vol. 62, No. 4, pages 1781-1796, 2017.

Control Systems Letters Outstanding Paper Award

The Control Systems Letters Outstanding Paper Award is given for an outstanding paper published in the IEEE Control Systems Letters during the two calendar years preceding the year of the award, based on originality, potential impact on the theoretical foundations of control, importance and practical significance in applications, and clarity. The 2019 award was given to B. Asadi Khashooei, D. J. Antunes, W. P. M. H. Heemels for the paper "A Consistent Threshold-Based Policy for Event-Triggered Control", IEEE Control Systems Letters, Vol. 2, No. 3, pages 447-452, 2018.

Roberto Tempo Best CDC Paper Award

This award is given in honor of Roberto Tempo, 44th President of CSS. The Tempo Award Committee selects the best paper from the previous year's CDC based on originality, potential impact on any aspect of control theory, technology, or implementation, and for the clarity of writing. The 2019 award was given to Takuya Ikeda and Kenji Kashima for the paper "Sparsity-constrained controllability maximization with application to time-varying control node selection", published in IEEE Control Systems Letters, Volume 2, No. 3, pages 321-325, 2018.

Award for Technical Excellence in Aerospace Control

The Award for Technical Excellence in Aerospace Control recognizes an outstanding paper or patented idea based on originality of technical innovation, significance/relevance to the aerospace community, aerospace application and potential impact on the practice of aerospace engineering. The award can be conferred on an individual or a team. The winner of the 2019 Award for Technical Excellence in Aerospace Control is Behçet Açikmeşe "for outstanding contributions to convex optimization-based control and its transitions and applications to aerospace applications".

Control Systems Technology Award

The Control Systems Technology Award recognizes outstanding contributions to control systems technology either in design and implementation, or in project management. This award can be conferred on an individual or a team. The 2019 Award was given to the team formed by: Warren Dixon, Nitin Sharma, Matthew J. Bellman, Alan Hamlet, Christian Cousin, Courtney Rouse, Ryan Downey, Victor Duenas “for closed-loop functional electrical stimulation control methods leading to successful commercialization and personalized rehabilitative treatment options”.

Transition to Practice Award

The Transition to Practice Award recognizes outstanding collaborative scientific interactions between industry or research laboratories and academic communities that transition basic controls and system theory to practical systems for the benefit of society at large**.** The winner of the 2019 CSS Transition to Practice Award is Alberto Bemporad “for lasting contributions to theory and advanced applications of Model Predictive Control (MPC) culminating in mass production introduction of MPC for powertrain control in the automotive industry”. The Transition to Practice Award comes with an invitation to deliver a plenary lecture at the IEEE Conference on Control Technology and Applications CCTA 2020.

Antonio Ruberti Young Researcher Prize

The Antonio Ruberti Young Researcher Prize recognizes distinguished cutting-edge contributions by a young researcher to the theory or application of systems and control. The 2019 Ruberti prize was given to Aaron Ames, California Institute of Technology, “for fundamental contributions to the nonlinear control of hybrid and safety-critical systems, with application to walking robots and robotic assistive devices that restore mobility”.

Aaron D. Ames is the Bren Professor of Mechanical and Civil Engineering and Control and Dynamical Systems at the California Institute of Technology. He received a B.S. in Mechanical Engineering and a B.A. in Mathematics from the University of St. Thomas in 2001, and he received a M.A. in Mathematics and a Ph.D. in Electrical Engineering and Computer Sciences from UC Berkeley in 2006. Dr. Ames served as a Postdoctoral Scholar in Control and Dynamical Systems at Caltech from 2006 to 2008, and began his faculty career at Texas A&M University in 2008. Prior to joining Caltech, he was an Associate Professor in Mechanical Engineering and Electrical & Computer Engineering at the Georgia Institute of Technology. At UC Berkeley, he was the recipient of the 2005 Leon O. Chua Award for achievement in nonlinear science and the 2006 Bernard Friedman Memorial Prize in Applied Mathematics. Dr. Ames received the NSF CAREER award in 2010, and is the recipient of the 2015 Donald P. Eckman Award recognizing an outstanding young engineer in the field of automatic control. His research interests span the areas of nonlinear, safety-critical and hybrid control systems, with a special focus on dynamic robotic systems—both formally and through experimental validation. His lab designs, builds and tests novel bipedal robots, prostheses, and exoskeletons with the goal of achieving human-like legged locomotion and translating these capabilities to robotic assistive devices. The application of these ideas range from increased autonomy in robots to improving the locomotion capabilities of the mobility impaired.

Hendrik W. Bode Lecture Prize

The Hendrik W. Bode Lecture Prize recognizes distinguished contributions to control systems science or engineering. The recipient delivers a plenary lecture at the CDC, evaluating a significant contribution to control systems science or engineering. The 2019 Bode Lecture prize was awarded to Lei Guo, Institute of Systems Science, Chinese Academy of Sciences, “for contributions to the field of adaptive control, system identification, adaptive signal processing, stochastic systems, and applied mathematics”.

Lei Guo received his B.S. degree in mathematics from Shandong University in 1982, and Ph.D. degree in control theory from the Chinese Academy of Sciences in 1987. He was a postdoctoral fellow at the Australian National University (1987-1989). Since 1992, he has been a Professor of the Institute of Systems Science at the Chinese Academy of Sciences (CAS). From 2002 to 2012， he was the President of the Academy of Mathematics and Systems Science, CAS. He is currently the Director of the National Center for Mathematics and Interdisciplinary Sciences, CAS. He has worked on problems in adaptive control, system identification, adaptive signal processing, and stochastic systems. His current research interests include control of nonlinear uncertain systems, PID control theory, distributed filtering and estimation, capability of feedback, multi-agent systems, game-based control systems, and complex systems, among others.

IEEE Control Systems Award

The IEEE Control Systems Award is given for outstanding contributions to control systems engineering, science or technology. The 2019 Control Systems Award was given to Pramod P. Khargonekar, University of California, Irvine, “for contributions to robust and optimal control theory”.

Pramod Khargonekar received B. Tech. in electrical engineering in 1977 from the Indian Institute of Technology, Bombay and M.S. in mathematics in 1980 and Ph.D. in electrical engineering in 1981 from the University of Florida. He was been on faculty at the University of Minnesota from 1984 to 2989. He was Chairman of the Department of Electrical Engineering and Computer Science from 1997 to 2001 and also held the position of Claude Shannon Professor at the University of Michigan. From 2001 to 2009, he was Dean of Engineering and Eckis Professor of Electrical and Computer Engineering at the University of Florida till 2016. After a brief role as Deputy Director of Technology at ARPA-E, he served as Assistant Director of the National Science Foundation from 2013 to 2016. He is currently Vice Chancellor for Research and Distinguished Professor of Electrical Engineering and Computer Science at the University of California, Irvine. His research has spanned robust and H-infinity control, control of manufacturing processes/systems, smart electric grids. He is currently exploring the confluence of machine learning and control. He is a recipient of the IEEE W. R. G. Baker Prize Award, the CSS Axelby Best Paper Award, the Hugo Schuck ACC Best Paper Award, NSF Presidential Young Investigator Award, the AAAC Donald Eckman Award, Web of Science Highly Cited Researcher, and the Distinguished Alumnus and Distinguished Service Awards from IIT Bombay. He is a Fellow of IEEE, IFAC, and AAAS.

IEEE Fellows

The grade of Fellow recognizes unusual distinction in the profession and is conferred only by invitation of the IEEE Board of Directors on a person with an extraordinary record of accomplishments in any of the IEEE fields of interest. The accomplishments honored by the grade of Fellow contribute significantly to the advancement of engineering science and technology. In 2019, the following individuals were elected Fellows as evaluated by the Control Systems Society:

- **David Castanon**, for contributions to discrete time stochastic control and information fusion
- **Bart de Schutter,** for contributions to optimization-based control of discrete-event systems, hybrid systems, transportation networks, and infrastructure networks
- **Santosh Devasia,** for contributions to feedforward control of non-minimum-phase systems
- **Nicola Elia,** for fundamental contributions to Networked Control Systems
- **Emilia Fridman,** for contributions to time-delay systems and sampled-data control
- **Keum-shik Hong,** for contributions to adaptive estimation and brain-computer interface techniques using near-infrared light
- **Mihailo Jovanovic,** for contributions to modeling, optimization, and control of large-scale and distributed systems
- **Antonis Papachristodoulou,** for fundamental contributions to theory and applications of Sum of Squares Programing and networked control systems
- **Maurizio Porfiri,** for contributions to networked control systems and biomimetic robotics
- **Murti Salapaka,** for enabling nano-science using control and systems technology for enabling nano-science using control and systems technology
- **Maarten Steinbuch,** for contributions to Advanced Motion Control, Mechatronics, Medical Robotics, and Electric Driving
- **Mario Sznaier,** for outstanding contributions to Multiobjective Robust Control, Robust Identification, and Dynamic Vision
- **Panagiotis Tsiotras,** for fundamental contributions to the application of nonlinear and optimal control to aerospace systems
- **Benjamin Van Roy,** for contributions to the theory and practice of reinforcement learning and approximate dynamic programming
- **Min Wu***,* for contribution to the field of advanced control and intelligent automation for complex systems

In addition, the following members of the Control Systems Society were evaluated by other societies and elected fellows of IEEE in 2019: Bassam Bamieh, Jiming Chen, Jie Chen, Dimitar Filev, Emilio Frazzoli, Qing-Long Han, Zeng-Guang Hou, Mark Lantz, Brett Ninness, Evangelos Papadopoulos, Fuchun Sun, Donghua Zhou.

CDCs: Past, Present and Future

The annual IEEE Conference on Decision and Control (CDC) is internationally recognized as the premiere scientific and engineering conference dedicated to the advancement of the theory and practice of systems and control. It brings together an international community of experts to discuss the state-of-the-art, new research results, perspectives of future developments, and innovative applications relevant to decision making, control, automation, and related areas. The CDC is hosted by the IEEE Control Systems Society (CSS) and is organized in cooperation with the Society for Industrial and Applied Mathematics (SIAM), the Institute for Operations Research and the Management Sciences (INFORMS), the Japanese Society for Instrument and Control Engineers (SICE), and the European Control Association (EUCA). Below is the complete list of CDCs (including the next one) with titles, chairs and locations. The proceedings of all past conferences can be found at the IEEE Library, 345 47th Street, New York, NY 10017.

59th IEEE Conference on Decision and Control
GC: Richard D. Braatz and Chung Choo Chung, PC: Jay H. Lee, International Convention Center, Jeju Island, Republic of Korea, December 8-11, 2020

58th IEEE Conference on Decision and Control
GC: Carlos Canudas-de-Wit, PC: Rodolphe Sepulchre, Palais des Congrès et des Expositions Nice Acropolis, Nice, France, 11-13 December, 2019

57th IEEE Conference on Decision and Control
GC: Andrew R. Teel, PC: Magnus Egerstedt, Fontainebleau Miami Beach, Miami, FL, 17-19 December, 2018

56th IEEE Conference on Decision and Control
GC: Rick Middleton and Dragan Nesic, PC: Mario Sznaier, Melbourne Convention Center, Melbourne, Australia, 12-15 December, 2017

55th IEEE Conference on Decision and Control
GC: Alessandro Giua, PC: Francesco Bullo, ARIA Resort & Casino, Las Vegas, NV, USA, 12-14 December, 2016

54th IEEE Conference on Decision and Control
GC: Yoshito Ohta, PC: Mitsuji Sampei, Osaka International Convention Center, Osaka, Japan, 15-18 December, 2015

53rd IEEE Conference on Decision and Control
GC: Faryar Jabbari, PC: Andy Teel, J.W. Marriott Hotel, Los Angeles, CA, 15-17 December, 2014

52nd IEEE Conference on Decision and Control
GC: Thomas Parisini and Roberto Tempo, PC: André L. Tits, Palazzo dei Congressi, Firenze, Italy, 10-13 December, 2013

51st IEEE Conference on Decision and Control
GC: Jay Farrell, PC: Maria Elena Valcher, Grand Wailea, Maui, HI, 11-14 December, 2012

50th IEEE Conference on Decision and Control and Joint European Control Conference
GC: Edwin Chong, GVC: Jay Farrell, Eduardo Camacho, PC: Marios Polycarpou, Hilton Bonnet Creek, Orlando, FL, 12-15 December, 2011

49th IEEE Conference on Decision and Control
GC: Mark W. Spong, PC: Fathi Ghorbel, Hilton Atlanta, Atlanta, GA, 15-17 December, 2010

Joint 48th IEEE Conference on Decision and Control Chinese Control Conference
GC: John Bailieul and Lei Guo, PC: Faryar Jabbari and Daizhan Cheng, Shanghai International Convention Center, Shanghai, China, 16-18 December, 2009

47th IEEE Conference on Decision and Control
GC: Chaouki Abdallah, PC: Thomas Parisini Fiesta American Grand Coral, Cancun, Mexico, 9-12 December, 2008

46th IEEE Conference on Decision and Control
GC: David Castanon, PC: James Spall, Hilton New Orleans Riverside, New Orleans, LA, 12-14 December, 2007

45th IEEE Conference on Decision and Control
GC: Pradeep Misra, PC: Rick Middleton, Manchester Grand Hyatt, San Diego, CA, 13-15 December, 2006

Joint 44th Conference on Decision and Control, and 2005 European Control Conference
GC: Eduardo Camacho, GVC: Peter Fleming, Steve Yurkovich, PC: Roberto Tempo, Melia Seville, Seville, Spain, 12-15 December, 2005

43rd IEEE Conference on Decision and Control
GC: Christos Cassandras, PC: Wei-bo Gong, The Atlantis, Paradise Islands, The Bahamas, 14-17 December, 2004

42nd IEEE Conference on Decision and Control
GC: Frank Lewis, PC: Chaouki Abdallah, Hyatt Regency Maui, Maui, HI, 9-12 December, 2003

41st IEEE Conference on Decision and Control
GC: Umit Ozguner, PC: Kenneth Loparo, The Venetian Hotel, Las Vegas, NV, 10-13 December, 2002

40th IEEE Conference on Decision and Control
GC: Theodore E. Djaferis, PC: Kevin M. Passino, Hyatt Regency Grand Cypress, Orlando, FL, 4-7 December, 2001

39th IEEE Conference on Decision and Control
GC: Robert R. Bitmead, PC: Cheryl B. Schrader, Sydney Convention and Exhibition Centre, Sydney, NSW Australia; 12-15 December, 2000

38th IEEE Conference on Decision and Control
GC: Edward W. Kamen, PC: Christos Cassandras, Crowne Plaza Hotel and Resort, Phoenix, AZ, 7-10 December, 1999

37th IEEE Conference on Decision and Control
GC: J. Douglas Birdwell, PC: David Castanon, Hyatt Regency Westshore, Tampa FL, 16-18 December, 1998

36th IEEE Conference on Decision and Control GC: Anthony Michel, PC: Theodore E. Djaferis Hyatt Regency San Diego, San Diego, CA, 10-12 December, 1997

35th IEEE Conference on Decision and Control GC: Hidenori Kimura, Co-PCs: Katsuhisa Furuta, J. Douglas Birdwell, Portopia Hotel and International Conference Center, Kobe, Japan, 11-13 December, 1996

34th IEEE Conference on Decision and Control GC: Panos J. Antsaklis, PC: Edward W. Kamen, New Orleans Hilton Riverside, New Orleans, LA, 13-15 December 1995

33rd IEEE Conference on Decision and Control GC: Michael K. Masten, PC: N. Harris McClamroch, Buena Vista Palace, Lake Buena Vista, FL, 14-16 December, 1994

32nd IEEE Conference on Decision and Control GC: Raymond A. DeCarlo, PC: Peter Ramadge, Marriott River Center, San Antonio, TX, 15-17 December, 1993

31st IEEE Conference on Decision and Control GC: Tamer Basar, PC: Sergio Verdu, Westin La Paloma, Tucson, AZ, 16-18 December, 1992

30th IEEE Conference on Decision and Control GC: Derek Atherton, PC: Panos J. Antsaklis, Metropole Hotel, Brighton, ENGLAND, 11-13 December, 1991

29th IEEE Conference on Decision and Control GC: Charles J. Herget, PC: Raymond A. DeCarlo, Hilton Hawaiian Village, Honolulu, HI, 5-7 December, 1990

28th IEEE Conference on Decision and Control GC: Leonard Shaw, PC: Tamer Basar, Hyatt Regency Tampa Hotel, Tampa, FL, 13-15 December, 1989

27th IEEE Conference on Decision and Control GC: Michael P. Polis, PC: William E. Schmitendorf, Hyatt Regency Austin on Town Lake, Austin, TX, 7-9 December, 1988

26th IEEE Conference on Decision and Control GC: William S. Levine, PC: John Baillieul, Westin Century-Plaza Hotel, Los Angeles, CA, 9-11 December, 1987

25th IEEE Conference on Decision and Control GC: Anthony Ephremides, Spyros Tzafestas, PC: H. Vincent Poor, Atheneum Intercontinental Athens, Greece; 10-12 December, 1986

24th IEEE Conference on Decision and Control GC: Gene F. Franklin, PC: Anthony N. Michel, Bonaventure Hotel & Spa, Ft. Lauderdale, FL, 11-13 December, 1985

23rd IEEE Conference on Decision and Control GC: Abraham H. Haddad, PC: Michael P. Polis, Las Vegas Hilton, Las Vegas, NV, 12-14 December, 1984

22nd IEEE Conference on Decision and Control GC: James L. Melsa, PC: Steven I. Marcus, Marriott Hotel, San Antonio, TX, 14-16 December, 1983

21st IEEE Conference on Decision and Control GC: Alexander H. Levis, PC: William S. Levine, Holiday Inn - International Drive, Orlando, FL, 8-10 December, 1982

20th IEEE Conference on Decision and Control including the **20th Symposium on Adaptive Processes,** GC: William R. Perkins, PC: Abraham H. Haddad, SC: Kumpati S. Narendra, Vacation Village Hotel, San Diego, CA; 16-18 December, 1981

19th IEEE Conference on Decision and Control including the **19th Symposium on Adaptive Processes,** GC: Pierre R. Belanger, PC: David L. Kleinman, SC: Richard V. Monopoli, The Regent Hotel, Albuquerque, NM; 10-12 December, 1980

18th IEEE Conference on Decision and Control including the **18th Symposium on Adaptive Processes**, GC: Stephen Kahne, PC: Alexander H. Levis, SC: Yaakov Bar-Shalom, Galt Ocean Mile Hotel, Ft. Lauderdale, FL, 12-14 December, 1979

1978 IEEE Conference on Decision and Control including the **17th Symposium on Adaptive Processes**, GC: Robert E. Larson, PC: Alan S. Willsky, SC: Jerry M. Mendel, Islandia Hyatt House Hotel, San Diego, CA, 10-12 January, 1979

1977 IEEE Conference on Decision and Control including the **16th Symposium on Adaptive Processes**, GC: K. S. Fu, PC: H. Sorenson, SC: T. Pavlidis, Fairmont Hotel, New Orleans, LA, 7-9 December, 1977

1976 IEEE Conference on Decision and Control including the **15th Symposium on Adaptive Processes**, GC: M. Athans, PC: E. R. Barnes, SC: T. Pavlidis, Sheraton-Sand Key Hotel, Clearwater, FL, 1-3 December, 1976

1975 IEEE Conference on Decision and Control including the **14th Symposium on Adaptive**

Processes, GC: J. B. Cruz, Jr., PC: J. B. Pearson, SC: G. Stein, Hyatt Regency, Houston, TX, 10-12 December, 1975

1974 IEEE Conference on Decision and Control including the **13th Symposium on Adaptive Processes**, GC: Elliot Axelband, PC: Stephen Kahne, SC: David P. Lindorff , Del Webb's Towne House, Phoenix, AZ; 20-22 November, 1974

1973 IEEE Conference on Decision and Control including the **12th Symposium on Adaptive Processes**, GC: J. S. Meditch, PC: D. G. Luenberger, SC: L. A. Gerhardt, Sheraton-Harbor Island Hotel, San Diego, CA; 5-7 December, 1973

1972 IEEE Conference on Decision and Control including the **11th Symposium on Adaptive Processes**, GC: J. M. Mendel, PC: Y. C. Ho, SC: G. N. Saridis, Fontainebleau Motor Hotel, New Orleans, LA; 13-15 December, 1972

1971 IEEE Conference on Decision and Control including the **10th Symposium on Adaptive Processes**, GC: J. T. Tou, PC: S. K. Mitter, SC: J. M. Mendel, Americana Hotel, Miami Beach, FL, 15-17 December, 1971

1970 Symposium on Adaptive Processes (9th) Decision and Control, GC, PC: D. J. Lainiotis University of Texas at Austin, Austin, TX, 7-9 December, 1970

IEEE Symposium on Adaptive Processes GC: J. B. Lewis, PC: G. J. McMurty, Pennsylvania State University, PA; 17-19 November, 1969

IEEE Symposium on Adaptive Processes GC, PC: J. M. Mendel, UCLA, Los Angeles, CA, 16-18 December, 1968

Symposium on Adaptive Processes; part of NEC GC: F. M. Waltz, PC: P. E. Mayes, International Amphitheater, Chicago, IL, 23-25 October, 1967

Symposium on Adaptive Processes; part of NEC GC: F. N. Bailey, PC: J. C. Hancock, McCormick Place, Chicago, IL, 3-5 October, 1966

Symposium on Adaptive Processes; part of NEC GC: E. C. Jones, Jr., PC: G. Brown, McCormick Place Chicago, IL, 25-27 October, 1965

Symposium on Adaptive Processes; part of NEC GC: F. J. Mullin, McCormick Place, Chicago, IL, 19-21 October, 1964

Symposium on Adaptive Processes; part of NEC GC: L. Kanal, McCormick Place, Chicago, IL, 28-29 October, 1963

Discrete Adaptive Processes Symposium and Panel Discussion (IEEE); part of **3rd JACC** GC: J. Sklansky New York University, New York City, NY, 29 June, 196

PROGRAM AT A GLANCE

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Track 15	Track 16	Track 17	Track 18	Track 19	Track 20	Track 21	Track 22	Track 23	Track 24	Track 25	Track 26
08:30-09:30 WeSP1 Apollon Genetic Circuit Engineering Meets Control Theory													08:30-09:30 WeSP2 Athena Equivariant Observers: Robust Nonlinear State Estimation for Robotic Systems													
10:00-12:00 WeA01 Méditerranée 1 Biological Systems I	10:00-12:00 WeA02 Méditerranée 2 Delay Systems I	10:00-12:00 WeA03 Méditerranée 5 Adaptive Control I	10:00-12:00 WeA04 Méditerranée A2 Boolean Control Networks	10:00-12:00 WeA05 Méditerranée C4 Control of Systems Subject to Constraints	10:00-12:00 WeA06 Méditerranée A3 Sampled-Data Control	10:00-12:00 WeA07 Méditerranée A1 Robotics I	10:00-12:00 WeA08 Méditerranée 3 Estimation and Control of PDE Systems I	10:00-12:00 WeA09 Méditerranée B12 Mean-Field Games I	10:00-12:00 WeA10 Méditerranée C12 Models and Control Methods Tor Traffic Networks	10:00-12:00 WeA11 Gallieni 1 Observers for Linear Systems	10:00-12:00 WeA12 Gallieni 2 Dynamics, Control and Information Processing of Quantum Systems	10:00-12:00 WeA13 Gallieni 4 Predictive Control for Linear Systems I	10:00-12:00 WeA14 Gallieni 7 Lyapunov Methods I	10:00-12:00 WeA15 Rhodes GH Geometric Optimal Control Theory and Applications	10:00-12:00 WeA16 Rhodes AB Optimization I	10:00-12:00 WeA17 Rhodes CD Switched Systems I	10:00-12:00 WeA18 Rhodes EF Observers for Nonlinear Systems I	10:00-12:00 WeA19 Gallieni 5 Advances in Nonlinear Filtering and Stochastic Control with Partial Information I	10:00-12:00 WeA20 Rhodes 10 Event-Triggered and Self-Triggered Control Based on Optimization Methods	10:00-12:00 WeA21 Risso 6 Network Analysis and Control I	10:00-12:00 WeA22 Risso 7 Identification I	10:00-12:00 WeA23 Risso 8 Learning-Based Controller Synthesis	10:00-12:00 WeA24 Hermes Learning I	10:00-12:00 WeA25 Athena Multi-Agent Systems I	10:00-12:00 WeA26 Apollon Cybergenetics: Control of Living Cells
14:00-16:00 WeB01 Méditerranée 1 Control Systems for Biology: Methodologies and Applications	14:00-16:00 WeB02 Méditerranée 2 Delay Systems II	14:00-16:00 WeB03 Méditerranée 5 Adaptive Control II	14:00-16:00 WeB04 Méditerranée A2 Supervisory Control	14:00-16:00 WeB05 Méditerranée C4 Flexible Control and Estimation Methods	14:00-16:00 WeB06 Méditerranée A3 Control of Networks I	14:00-16:00 WeB07 Méditerranée A1 Robotics II	14:00-16:00 WeB08 Méditerranée 3 Estimation and Control of PDE Systems II	14:00-16:00 WeB09 Méditerranée B12 Mean Field Games II	14:00-16:00 WeB10 Méditerranée C12 Orchestrating Movement of Smart Vehicles in Smart Cities	14:00-16:00 WeB11 Gallieni 1 Markov Processes I	14:00-16:00 WeB12 Gallieni 2 Quantum Information and Control	14:00-16:00 WeB13 Gallieni 4 Predictive Control for Linear Systems II	14:00-16:00 WeB14 Gallieni 7 Lyapunov Methods II	14:00-16:00 WeB15 Rhodes GH Optimality Conditions for Control Problems I	14:00-16:00 WeB16 Rhodes AB Optimization II	14:00-16:00 WeB17 Rhodes CD Switched Systems II	14:00-16:00 WeB18 Rhodes EF Observers for Nonlinear Systems II	14:00-16:00 WeB19 Gallieni 5 Advances in Nonlinear Filtering and Stochastic Control with Partial Informatio	14:00-16:00 WeB20 Rhodes 10 Event-Triggered Control Based on Lyapunov Methods	14:00-16:00 WeB21 Risso 6 Network Analysis and Control II	14:00-16:00 WeB22 Risso 7 Identification II	14:00-16:00 WeB23 Risso 8 Model Learning for Control	14:00-16:00 WeB24 Hermes Learning II	14:00-16:00 WeB25 Athena Multi-Agent Systems II	

																		n II						

16:30-18:30 WeC01 Méditerranée 1 Biological Rhythms and Oscillators	16:30-18:30 WeC02 Méditerranée 2 Power Systems Applications	16:30-18:30 WeC03 Méditerranée 5 Adaptive Control III	16:30-18:30 WeC04 Méditerranée A2 Discrete Event Systems	16:30-18:30 WeC05 Méditerranée C4 Constrained Control	16:30-18:30 WeC06 Méditerranée A3 Control of Networks II	16:30-18:30 WeC07 Méditerranée A1 Robotics III	16:30-18:30 WeC08 Méditerranée 3 Estimation and Control of PDE Systems III	16:30-18:30 WeC09 Méditerranée B12 Game Theory I	16:30-18:30 WeC10 Méditerranée C12 New Mobility Systems	16:30-18:30 WeC11 Gallieni 1 Markov Processes II	16:30-18:30 WeC12 Gallieni 2 Analytic and Geometric Tools in Quantum Control	16:30-18:30 WeC13 Gallieni 4 Predictive Control for Nonlinear Systems	16:30-18:30 WeC14 Gallieni 7 Lyapunov Methods III	16:30-18:30 WeC15 Rhodes GH Optimality Conditions for Control Problems II	16:30-18:30 WeC16 Rhodes AB Optimization III	16:30-18:30 WeC17 Rhodes CD Switched Systems III	16:30-18:30 WeC18 Rhodes EF Observers for Nonlinear Systems III	16:30-18:30 WeC19 Gallieni 5 Stochastic Systems I	16:30-18:30 WeC20 Rhodes 10 Event-Triggered and Self-Triggered Control for Distributed Systems	16:30-18:30 WeC21 Risso 6 Sensor and Control Networks	16:30-18:30 WeC22 Risso 7 Identification III	16:30-18:30 WeC23 Risso 8 Learning-Based Model Predictive Control	16:30-18:30 WeC24 Hermes Learning III	16:30-18:30 WeC25 Athena Multi-Agent Systems III

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08:30-09:30 ThSP1 Apollon Distributed Machine Learning Over Networks													08:30-09:30 ThSP2 Athena The Curse of Linearity and Time-Invariance												
10:00-12:00 ThA01 Méditerranée 1 Control Methods for Biology and Bioprocesses	10:00-12:00 ThA02 Méditerranée 2 Linear Matrix Inequalities	10:00-12:00 ThA03 Méditerranée 5 Adaptive Control IV	10:00-12:00 ThA04 Méditerranée A2 Fault Detection and Diagnosis	10:00-12:00 ThA05 Méditerranée C4 Building Automation	10:00-12:00 ThA06 Méditerranée A3 Optimization Algorithms I	10:00-12:00 ThA07 Méditerranée A1 Robotics IV	10:00-12:00 ThA08 Méditerranée 3 Estimation and Control of PDE Systems IV	10:00-12:00 ThA09 Méditerranée B12 Game Theory II	10:00-12:00 ThA10 Méditerranée C12 Novel Approaches to Traffic Estimation and Control Using Automated Vehicles	10:00-12:00 ThA11 Galilei 1 Estimation I	10:00-12:00 ThA12 Galilei 2 Research and Development on Control for Fusion Facilities	10:00-12:00 ThA13 Galilei 4 Smart Grid I	10:00-12:00 ThA14 Galilei 7 Lyapunov Methods IV	10:00-12:00 ThA15 Rhodes GH Optimal Control I	10:00-12:00 ThA16 Rhodes AB Optimization IV	10:00-12:00 ThA17 Rhodes CD Switched Systems IV	10:00-12:00 ThA18 Rhodes EF Estimation and Observer Design in Nonlinear Systems	10:00-12:00 ThA19 Galilei 5 Stochastic Systems II	10:00-12:00 ThA20 Rhodes 10 Distributed Control I	10:00-12:00 ThA21 Risso 6 Networked Control Systems I	10:00-12:00 ThA22 Risso 7 Identification IV	10:00-12:00 ThA23 Risso 8 Machine Learning in Control, Theory and Applications I	10:00-12:00 ThA24 Hermes Machine Learning I	10:00-12:00 ThA25 Athena Multi-Agent Systems IV	10:00-12:00 ThA26 Apollon Self-Tuning and Reinforcement Learning
14:00-16:00 ThB01 Méditerranée 1 Biological Applications	14:00-16:00 ThB02 Méditerranée 2 Linear Parameter-Varying Systems	14:00-16:00 ThB03 Méditerranée 5 Autonomous Systems I	14:00-16:00 ThB04 Méditerranée A2 Fault Tolerant Systems	14:00-16:00 ThB05 Méditerranée C4 Distributed Sensing, Control and Automation	14:00-16:00 ThB06 Méditerranée A3 Optimization Algorithms II	14:00-16:00 ThB07 Méditerranée A1 Robotics V	14:00-16:00 ThB08 Méditerranée 3 Estimation and Control of PDE Systems V	14:00-16:00 ThB09 Méditerranée B12 Game Theory III	14:00-16:00 ThB10 Méditerranée C12 Control for Large Scale Traffic Networks	14:00-16:00 ThB11 Galilei 1 Estimation II	14:00-16:00 ThB12 Galilei 2 Communication Networks	14:00-16:00 ThB13 Galilei 4 Control and Demand Response in Smart Grids	14:00-16:00 ThB14 Galilei 7 Nonlinear Feedback	14:00-16:00 ThB15 Rhodes GH Optimal Control II	14:00-16:00 ThB16 Rhodes AB Numerical Methods for Real-Time Model Predictive Control I	14:00-16:00 ThB17 Rhodes CD Formal Verification and Synthesis I	14:00-16:00 ThB18 Rhodes EF Security in Cyber-Physical Systems I	14:00-16:00 ThB19 Galilei 5 Stochastic Systems III	14:00-16:00 ThB20 Rhodes 10 Distributed Control II	14:00-16:00 ThB21 Risso 6 Networked Control Systems II	14:00-16:00 ThB22 Risso 7 Theoretical Foundations for the Representation and Identification of Dynamic Networks I	14:00-16:00 ThB23 Risso 8 Machine Learning in Control, Theory and Applications II	14:00-16:00 ThB24 Hermes Machine Learning II	14:00-16:00 ThB25 Athena Decentralized Control

16:30-18:30 ThC01 Méditerranée 1 Control Theory in Neuroscience	16:30-18:30 ThC02 Méditerranée 2 Control Applications	16:30-18:30 ThC03 Méditerranée 5 Autonomous Systems II	16:30-18:30 ThC04 Méditerranée A2 Fuzzy Systems and Evolutionary Computing	16:30-18:30 ThC05 Méditerranée C4 Energy Systems	16:30-18:30 ThC06 Méditerranée A3 Optimization Algorithms III	16:30-18:30 ThC07 Méditerranée A1 Aerospace	16:30-18:30 ThC08 Méditerranée 3 Distributed Parameter Systems I	16:30-18:30 ThC09 Méditerranée B12 Game Theory IV	16:30-18:30 ThC10 Méditerranée C12 Modeling, Estimation, and Control of Large-Scale Network Systems	16:30-18:30 ThC11 Galilei 1 Estimation III	16:30-18:30 ThC12 Galilei 2 Networks	16:30-18:30 ThC13 Galilei 4 Smart Grid II	16:30-18:30 ThC14 Galilei 7 Time-Varying Systems	16:30-18:30 ThC15 Rhodes GH Optimal Control III	16:30-18:30 ThC16 Rhodes AB Numerical Methods for Real-Time Model Predictive Control II	16:30-18:30 ThC17 Rhodes CD Formal Verification and Synthesis II	16:30-18:30 ThC18 Rhodes EF Security in Cyber-Physical Systems II	16:30-18:30 ThC19 Galilei 5 Stochastic Systems IV	16:30-18:30 ThC20 Rhodes 10 Distributed Control III	16:30-18:30 ThC21 Risso 6 Networked Control Systems III	16:30-18:30 ThC22 Risso 7 Theoretical Foundations for the Representation and Identification of Dynamic Networks II	16:30-18:30 ThC23 Risso 8 Machine Learning in Complex Networks I	16:30-18:30 ThC24 Hermes Recent Advances in Iterative Learning Control and Repetitive Learning Control: From Theory to Applications	16:30-18:30 ThC25 Athena Large-Scale Systems	16:30-18:30 ThB26 Apollon Autonomous Vehicles and Traffic Control in Mixed Autonomy Environments

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Track 15	Track 16	Track 17	Track 18	Track 19	Track 20	Track 21	Track 22	Track 23	Track 24	Track 25	Track 26
08:30-09:30 FrP1 Apollon Feedback and Uncertainty: Some Basic Problems and Theorems																									
10:00-12:00 FrA01 Méditerranée 1 Nonlinear Modeling and Estimation in Biomedical Systems	10:00-12:00 FrA02 Méditerranée 2 Linear Systems I	10:00-12:00 FrA03 Méditerranée 5 Autonomous Vehicles	10:00-12:00 FrA04 Méditerranée A2 Modern Computational and Algorithmic Challenges on Switched Systems	10:00-12:00 FrA05 Méditerranée C4 Robust Control I	10:00-12:00 FrA06 Méditerranée A3 Optimization Algorithms IV	10:00-12:00 FrA07 Méditerranée A1 Flight Control	10:00-12:00 FrA08 Méditerranée 3 Distributed Parameter Systems II	10:00-12:00 FrA09 Méditerranée B12 Game Theory V	10:00-12:00 FrA10 Méditerranée C12 Sliding-Mode Control I	10:00-12:00 FrA11 Galleria 1 Estimation IV	10:00-12:00 FrA12 Galleria 2 System Cones and Phase Bounded Systems	10:00-12:00 FrA13 Galleria 4 Uncertain Systems I	10:00-12:00 FrA14 Galleria 7 Stability of Nonlinear Systems I	10:00-12:00 FrA15 Rhodes GH Optimal Control IV	10:00-12:00 FrA16 Rhodes AB Real-Time Optimization Methods for Power Systems	10:00-12:00 FrA17 Rhodes CD Formal Methods in Control	10:00-12:00 FrA18 Rhodes EF Hybrid Systems I	10:00-12:00 FrA19 Galleria 5 Stochastic Optimal Control I	10:00-12:00 FrA20 Rhodes 10 Distributed Control IV	10:00-12:00 FrA21 Risso 6 Networked Control Systems IV	10:00-12:00 FrA22 Risso 7 Nonlinear Systems Identification I	10:00-12:00 FrA23 Risso 8 Machine Learning in Complex Networks II	10:00-12:00 FrA24 Hermes Iterative Learning Control I	10:00-12:00 FrA25 Athena Power Systems I	10:00-12:00 FrA26 Apollon Payoff Dynamics and Higher-Order Learning in Population Games
14:00-16:00 FrB01 Méditerranée 1 Biomolecular Systems	14:00-16:00 FrB02 Méditerranée 2 Linear Systems II	14:00-16:00 FrB03 Méditerranée 5 Automotive Control I	14:00-16:00 FrB04 Méditerranée A2 Analysis and Control Methods to Improve Resilience of Discrete-Event Systems	14:00-16:00 FrB05 Méditerranée C4 Robust Control II	14:00-16:00 FrB06 Méditerranée A3 Neural Networks	14:00-16:00 FrB07 Méditerranée A1 Methodologies for the Design and for the Control of Miniaturized Mechatronic Systems	14:00-16:00 FrB08 Méditerranée 3 Structure Preserving Discretization of PDEs for Control and Applications	14:00-16:00 FrB09 Méditerranée B12 Game Theory VI	14:00-16:00 FrB10 Méditerranée C12 Sliding-Mode Control II	14:00-16:00 FrB11 Galleria 1 Estimation V	14:00-16:00 FrB12 Galleria 2 Advances in Constructive Techniques and Use of Lyapunov Functions	14:00-16:00 FrB13 Galleria 4 Uncertain Systems II	14:00-16:00 FrB14 Galleria 7 Stability of Nonlinear Systems II	14:00-16:00 FrB15 Rhodes GH Optimal Control V	14:00-16:00 FrB16 Rhodes AB Low-Rank Approximation	14:00-16:00 FrB17 Rhodes CD Encrypted Control and Optimization	14:00-16:00 FrB18 Rhodes EF Hybrid Systems II	14:00-16:00 FrB19 Galleria 5 Stochastic Optimal Control II	14:00-16:00 FrB20 Rhodes 10 Cooperative Control I	14:00-16:00 FrB21 Risso 6 Networked Control Systems V	14:00-16:00 FrB22 Risso 7 Nonlinear Systems Identification II	14:00-16:00 FrB23 Risso 8 Large-Scale Distributed Optimization and Decentralized Control I	14:00-16:00 FrB24 Hermes Iterative Learning Control II	14:00-16:00 FrB25 Athena Power Systems II	

16:30-18:30 FrC01 Méditerranée 1 Biological Systems II	16:30-18:30 FrC02 Méditerranée 2 Linear Systems III	16:30-18:30 FrC03 Méditerranée 5 Automotive Control II	16:30-18:30 FrC04 Méditerranée A2 Cyber-Security of Discrete-Event Systems	16:30-18:30 FrC05 Méditerranée C4 Robust Control III	16:30-18:30 FrC06 Méditerranée A3 Computational Methods	16:30-18:30 FrC07 Méditerranée A1 Mechatronics	16:30-18:30 FrC08 Méditerranée 3 Model Reduction	16:30-18:30 FrC09 Méditerranée B12 Sensor Networks	16:30-18:30 FrC10 Méditerranée C12 Sliding-Mode Control III	16:30-18:30 FrC11 Gallieni 1 Multi-Sensor Fusion Techniques for State Estimation in Navigation	16:30-18:30 FrC12 Gallieni 2 Analysis and Control of Systems with Hysteresis	16:30-18:30 FrC13 Gallieni 4 Uncertain Systems III	16:30-18:30 FrC14 Gallieni 7 Stability of Nonlinear Systems III	16:30-18:30 FrC15 Rhodes GH Geometric Methods	16:30-18:30 FrC16 Rhodes AB Numerical Algorithms	16:30-18:30 FrC17 Rhodes CD Power Electronics	16:30-18:30 FrC18 Rhodes EF Stability of Hybrid and Nonlinear Systems	16:30-18:30 FrC19 Gallieni 5 Stochastic Optimal Control III	16:30-18:30 FrC20 Rhodes 10 Cooperative Control II	16:30-18:30 FrC21 Risso 6 Networked Control Systems VI	16:30-18:30 FrC22 Risso 7 Maritime Control and Autonomous Vehicles	16:30-18:30 FrC23 Risso 8 Large-Scale Distributed Optimization and Decentralized Control II	16:30-18:30 FrC24 Hermes PID Control	16:30-18:30 FrC25 Athena Power Systems III

TECHNICAL PROGRAM

Technical Program for Wednesday December 11, 2019

WeSP1 Apollon

Genetic Circuit Engineering Meets Control Theory (Semiplenary Session)

Chair: Khammash, Mustafa H. ETH Zurich

08:30-09:30 WeSP1.1

*Genetic Circuit Engineering Meets Control Theory**.

Del Vecchio, Domitilla — Massachusetts Institute of Technology

WeSP2 Athéna

Equivariant Observers: Robust Nonlinear State Estimation for Robotic Systems (Semiplenary Session)

Chair: Johansson, Karl H. KTH Royal Institute of Technology

08:30-09:30 WeSP2.1

*Equivariant Observers: Robust Nonlinear State Estimation for Robotic Systems**.

Mahony, Robert — Australian National University

WeA01 Méditerranée 1

Biological Systems I (Regular Session)

Chair: Gouze, Jean-Luc INRIA

Co-Chair: Margaliot, Michael Tel Aviv University

10:00-10:20 WeA01.1

Projection-Based Order Reduction of a Nonlinear Biophysical Neuronal Network Model, pp. 1-6.

Lehtimäki, Mikko — Tampere University

Paunonen, Lassi — Tampere University

Linne, Marja-Leena — Tampere University

10:20-10:40 WeA01.2

Productivity Analysis and Non-Linear Gain Scheduling Approach for Multi-Species Bioprocesses with Product Inhibition, pp. 7-12.

Skupin, Piotr — Silesian University of Technology

Rapaport, Alain — University of Montpellier, INRA, Montpellier SupAgro

10:40-11:00 WeA01.3

Robust Control of a Competitive Environment in the Chemostat Using Discontinuous Control Laws, pp. 13-18.

dos Reis de Souza, Alex — INRIA Lille Nord Europe

Efimov, Denis — INRIA

Polyakov, Andrey — INRIA Lille Nord-Europe

Gouze, Jean-Luc — INRIA

11:00-11:20 WeA01.4

Optimal Reporter Placement in Sparsely Measured Genetic Networks Using the Koopman Operator, pp. 19-24.

Hasnain, Aqib — University of California, Santa Barbara

Boddupalli, Nibodh — University of California, Santa Barbara

Yeung, Enoch — University of California, Santa Barbara

11:20-11:40 WeA01.5

Ribosome Flow Model with Nonhomogeneous Site Sizes, pp. 25-30.

Bar-Shalom, Eyal — Tel Aviv University

Ovseevich, Alexander — Russian Academy of Sciences

Margaliot, Michael — Tel Aviv University

11:40-12:00 WeA01.6

Singular Regimes for the Maximization of Metabolite Production, pp. 31-36.

Yabo, Agustín Gabriel — INRIA

Caillau, Jean-Baptiste — Université Côte d'Azur, CNRS, INRIA, LJAD

Gouze, Jean-Luc — INRIA

WeA02 Méditerranée 2

Delay Systems I (Regular Session)

Chair: Pepe, Pierdomenico University of L'Aquila

Co-Chair: De Iuliis, Vittorio University of L'Aquila

10:00-10:20 WeA02.1

On the Stability of Coupled Differential-Difference Systems with Multiple Time-Varying Delays: A Positivity-Based Approach, pp. 37-42.

De Iuliis, Vittorio — University of L'Aquila

D'Innocenzo, Alessandro — University of L'Aquila

Germani, Alfredo — University of L'Aquila

Manes, Costanzo — University of L'Aquila

10:20-10:40 WeA02.2

A Relaxed Lyapunov-Krasovskii Condition for Global Exponential Stability of Lipschitz Time-Delay Systems, pp. 43-48.

Chaillet, Antoine — CentraleSupélec

Orlowski, Jakub — CentraleSupélec, Université Paris-Saclay

Pepe, Pierdomenico — University of L'Aquila

10:40-11:00 WeA02.3

Pseudo Predictor Feedback Stabilization of Linear Systems with Both State and Input Delays, pp. 49-53.

Zhang, Zhe — Harbin Institute of Technology

Zhou, Bin — Harbin Institute of Technology

Michiels, Wim — Katholieke Universiteit Leuven

11:00-11:20 WeA02.4

Exact Delay Consensus Margin of First-Order Agents under PID Protocol, pp. 54-59.

Ma, Dan — Northeastern University

Chen, Jianqi — City University of Hong Kong

Lu, Renquan — Guangdong University of Technology

Chen, Jie — City University of Hong Kong

11:20-11:40 WeA02.5

Cadence Tracking for Switched FES Cycling with Unknown Input Delay, pp. 60-65.

Allen, Brendon C. — University of Florida

Cousin, Christian — University of Florida

Rouse, Courtney — University of Florida

Dixon, Warren E. — University of Florida

11:40-12:00 WeA02.6

Derivative-Dependent Control of Stochastic Systems Via Delayed Feedback Implementation, pp. 66-71.

Zhang, Jin — Tel Aviv University
Fridman, Emilia — Tel Aviv University

WeA03 Méditerranée 5

Adaptive Control I (Regular Session)

Chair: Baldi, Simone — Delft University of Technology
Co-Chair: Dugard, Luc — CNRS-Grenoble INP

10:00-10:20 WeA03.1

The Role of Uncertainty in Adaptive Control of Switched Euler-Lagrange Systems, pp. 72-77.

Roy, Spadan — Delft University of Technology
Baldi, Simone — School of Mathematics

10:20-10:40 WeA03.2

Why One Should Use Youla-Kucera Parametrization in Adaptive Feedforward Noise Attenuation?, pp. 78-83.

Landau, Ioan Dore — GIPSA-LAB, Control Dept
Airimitoaie, Tudor-Bogdan — University of Bordeaux
Melendez, Raul — GIPSA-LAB
Dugard, Luc — CNRS

10:40-11:00 WeA03.3

Adaptive Set-Point Regulation Using Multiple Estimators, pp. 84-89.

Shahab, Mohamad T. — University of Waterloo
Miller, Daniel E. — University of Waterloo

11:00-11:20 WeA03.4

Passivity-Based Adaptive Control of Quadrotors with Mass and Moment of Inertia Uncertainties, pp. 90-95.

Song, Jeyoung — DGIST
Chang, Dong Eui — Korea Advanced Institute of Science and Technology
Eun, Yongsoon — DGIST

11:20-11:40 WeA03.5

A Model Reference Adaptive Continuous Sliding-Mode Control, pp. 96-101.

Franco Jaramillo, José Roberto — Tecnológico Nacional de México/ I.T. La Laguna
Ríos, Héctor — CONACYT-Tecnológico Nacional de México/I.T. La Laguna
Ferreira de Loza, Alejandra — Universidad Nacional Autónoma de Mexico

11:40-12:00 WeA03.6

Youla-Kucera Adaptive Feedback Disturbance Rejection in the Presence of Plant Uncertainties, pp. 102-107.

Vau, Bernard — ENS Paris-Saclay
Landau, Ioan Dore — GIPSA-LAB

WeA04 Méditerranée A2

Boolean Control Networks (Regular Session)

Chair: Valcher, Maria Elena — University of Padova
Co-Chair: Glielmo, Luigi — University of Sannio

10:00-10:20 WeA04.1

Synthesis for Controllability and Observability of Logical Control Networks, pp. 108-113.

Zhang, Kuize — KTH Royal Institute of Technology
Johansson, Karl H. — KTH Royal Institute of Technology

10:20-10:40 WeA04.2

An Improved Algorithm for Stabilization of Boolean Networks Via Pinning Control, pp. 114-119.

Zhang, Zhihua — Technische Universität Kaiserslautern
Leifeld, Thomas — Technische Universität Kaiserslautern
Zhang, Ping — Technische Universität Kaiserslautern

10:40-11:00 WeA04.3

Output Tracking Control Design of Switched Boolean Control Networks, pp. 120-125.

Yerudkar, Amol — University of Sannio
Del Vecchio, Carmen — University of Sannio
Glielmo, Luigi — University of Sannio

11:00-11:20 WeA04.4

Observability and Reconstructibility of Probabilistic Boolean Networks, pp. 126-131.

Fornasini, Ettore — University of Padova
Valcher, Maria Elena — University of Padova

11:20-11:40 WeA04.5

Idle Vehicle Rebalancing in Semiconductor Fabrication Using Factorized Graph Neural Network Reinforcement Learning, pp. 132-138.

Ahn, Kyuree — Korea Advanced Institute of Science and Technology
Park, Jinkyoo — Korea Advanced Institute of Science and Technology

11:40-12:00 WeA04.6

Detection and Mitigation of Attacks in Nonlinear Stochastic System Using Modified Chi-Square Detector, pp. 139-144.

Bhowmick, Chandreyee — Missouri University of Science and Technology
Jagannathan, Sarangapani — Missouri University of Science and Technology

WeA05 Méditerranée C4

Control of Systems Subject to Constraints (Invited Session)

Chair: Turner, Matthew C. — University of Leicester
Co-Chair: Gomes da Silva Jr, Joao Manoel — Universidade Federal do Rio Grande do Sul (UFRGS)
Organizer: Tarbouriech, Sophie — LAAS-CNRS
Organizer: Gomes da Silva Jr, Joao Manoel — Universidade Federal do Rio Grande do Sul (UFRGS)

10:00-10:20 WeA05.1

Model-Free Global Stabilization of Continuous-Time Linear Systems with Saturating Actuators Using Adaptive Dynamic Programming (I), pp. 145-150.

Rizvi, Syed Ali Asad — University of Virginia
Lin, Zongli — University of Virginia

10:20-10:40 WeA05.2

Single Harmonic Based Model Predictive Control for Tracking (I), pp. 151-156.

Krupa, Pablo — University of Seville

Pereira, Mario	University of Seville
Limon, Daniel	University of Seville
Alamo, Teodoro	University of Seville

10:40-11:00 WeA05.3

Economic Model-Predictive Control Strategies for Aircraft Deep-Stall Recovery with Stability Guarantees (I), pp. 157-162.

Cunis, Torbjørn	ONERA - French Aerospace Lab
Liao-McPherson, Dominic	University of Michigan
Condomines, Jean-Philippe	ENAC
Burlion, Laurent	Rutgers, State University of New Jersey
Kolmanovsky, Ilya V.	University of Michigan

11:00-11:20 WeA05.4

Analysis of MIMO Lurie Systems with Slope Restricted Nonlinearities Using Concepts of External Positivity (I), pp. 163-168.

Turner, Matthew C.	University of Leicester
Drummond, Ross	University of Oxford

11:20-11:40 WeA05.5

Regional Stability of Discrete-Time Linear Systems Subject to Asymmetric Input Saturation (I), pp. 169-174.

Broering Groff, Leonardo	Universidade Federal do Rio Grande do Sul (UFRGS)
Gomes da Silva Jr, Joao Manoel	Universidade Federal do Rio Grande do Sul (UFRGS)
Valmorbida, Giorgio	L2S, CentraleSupelec

11:40-12:00 WeA05.6

Closed-Form Barrier Functions for Multi-Agent Ellipsoidal Systems with Uncertain Lagrangian Dynamics, pp. 175-180.

Verginis, Christos	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

WeA06 Méditerranée A3

Sampled-Data Control (Regular Session)

Chair: Fiter, Christophe	Université de Lille
Co-Chair: Bradley, Justin	University of Nebraska

10:00-10:20 WeA06.1

Investigating New Classes of Sampling Sequences: Application to the Stability Analysis of Decentralized Sampled-Data Systems, pp. 181-186.

Etienne, Lucien	Institut Mine Télécom Lille Douai
Motchon, Koffi M. Djidula	Université de Reims
Fiter, Christophe	Université de Lille- CRIStAL (UMR CNRS 9189)

10:20-10:40 WeA06.2

H-Inf Event-Triggered Control with Performance Guarantees Vis-à-Vis Optimal Periodic Control, pp. 187-192.

Mi, La	Technion-IIT
Mirkin, Leonid	Technion-IIT

10:40-11:00 WeA06.3

Stability Analysis for a Class of Resource-Aware, Co-Regulated Systems, pp. 193-200.

Zhang, Xinkai	University of Nebraska
Bradley, Justin	University of Nebraska

11:00-11:20 WeA06.4

Generalized Framework for Gridding Approximation Approach to yet Another H2 Norm of Sampled-Data Systems, pp. 201-206.

Kim, Jung Hoon	Pohang Univeristy of Science and Technology
Hagiwara, Tomomichi	Kyoto Univeristy

11:20-11:40 WeA06.5

H_inf Optimal Sampled-Data Controller Synthesis with Generalised Disturbance and Performance Channels, pp. 207-212.

Dreef, H.J.	Eindhoven University of Technology
Donkers, M.C.F.	Eindhoven University of Technology

11:40-12:00 WeA06.6

Sampled-Data Extremum-Seeking Control for Optimization of Constrained Dynamical Systems Using Barrier Function Methods, pp. 213-219.

Hazeleger, Leroy	Eindhoven University of Technology
Nesic, Dragan	University of Melbourne
Van De Wouw, Nathan	Eindhoven University of Technology

WeA07 Méditerranée A1

Robotics I (Regular Session)

Chair: Kyriakopoulos, Kostas J.	National Tech. Univ. of Athens
Co-Chair: Matveev, Alexey S.	Saint Petersburg University

10:00-10:20 WeA07.1

Provable Reactive Navigation of Mobile Robots to a Moving Target in Unpredictable Dynamic Scenes, pp. 220-225.

Matveev, Alexey S.	Saint Petersburg University
Nikolaev, Maksim S.	Saint Petersburg University

10:20-10:40 WeA07.2

Scalable Distributed Algorithms for Multi-Robot Near-Optimal Motion Planning, pp. 226-231.

Zhao, Guoxiang	Pennsylvania State University
Zhu, Minghui	Pennsylvania State University

10:40-11:00 WeA07.3

Robot Navigation under MITL Constraints Using Time-Dependent Vector Field Based Control, pp. 232-237.

Mavridis, Christos	University of Maryland
Vrohidis, Constantinos	National Tech. Univ. of Athens
Baras, John S.	University of Maryland
Kyriakopoulos, Kostas J.	National Tech. Univ. of Athens

11:00-11:20 WeA07.4

Safe Control Algorithms Using Energy Functions: A Unified Framework, Benchmark, and New Directions, pp. 238-243.

Wei, Tianhao	Carnegie Mellon University
Liu, Changliu	Carnegie Mellon University

11:20-11:40 WeA07.5

Drive-Based Motivation for Coordination of Limit Cycle Behaviors, pp. 244-249.

Thompson, Craig	University of Arizona
Reverdy, Paul	University of Arizona

11:40-12:00 WeA07.6

Integrated Path Following and Collision Avoidance Using a Composite Vector Field, pp. 250-255.

Yao, Weijia	University of Groningen
Lin, Bohuan	University of Groningen
Cao, Ming	University of Groningen

WeA08 Méditerranée 3

Estimation and Control of PDE Systems I (Invited Session)

Chair: Fahroo, Fariba	AFOSR
Co-Chair: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Fahroo, Fariba	AFOSR
Organizer: Le Gorrec, Yann	Ensmm, Femto-St / As2m

10:00-10:20 WeA08.1

Network-Based Control of Damped Beam Equation under Point and Pointlike Measurements (I), pp. 256-261.

Terushkin, Maria	Tel Aviv University
Fridman, Emilia	Tel Aviv University

10:20-10:40 WeA08.2

H_∞ Optimal Estimation for Linear Coupled PDE Systems (I), pp. 262-267.

Das, Amritam	Eindhoven University of Technology
Shivakumar, Sachin	Arizona State University
Weiland, Siep	Eindhoven University of Technology
Peet, Matthew M.	Arizona State University

10:40-11:00 WeA08.3

Sampled-Data Control of 2D Kuramoto-Sivashinsky Equation under the Averaged Measurements (I), pp. 268-273.

Kang, Wen	University of Science and Technology Beijing
Fridman, Emilia	Tel-Aviv University

11:00-11:20 WeA08.4

A Path Planning Algorithm for Human Evacuations with an Environment Dependent Motion (I), pp. 274-279.

Demetriou, Michael A.	Worcester Polytechnic Institute
Kontopyrgos, Marios	Worcester Polytechnic Institute

11:20-11:40 WeA08.5

A Generalized LMI Formulation for Input-Output Analysis of Linear Systems of ODEs Coupled with PDEs (I), pp. 280-285.

Shivakumar, Sachin	Arizona State University
Das, Amritam	Eindhoven University of Technology
Weiland, Siep	Eindhoven University of Technology
Peet, Matthew M.	Arizona State University

WeA09 Méditerranée B12

Mean-Field Games I (Invited Session)

Chair: Tembine, Hamidou	New York University (NYU)
Co-Chair: Gomes, Diogo	King Abdullah University of Science and Technology
Organizer: Tembine, Hamidou	New York University (NYU)
Organizer: Gomes, Diogo	King Abdullah University of Science and Technology

10:00-10:20 WeA09.1

Graphon Mean Field Games and the GMFG Equations: ε-Nash Equilibria (I), pp. 286-292.

Caines, Peter E.	McGill University
Huang, Minyi	Carleton University

10:20-10:40 WeA09.2

Fractional Mean-Field-Type Games under Non-Quadratic Costs: A Direct Method (I), pp. 293-298.

Barreiro-Gomez, Julian	New York University Abu Dhabi (NYUAD)
Djehiche, Boualem	KTH Royal Institute of Technology
Duncan, Tyrone E.	University of Kansas
Pasik-Duncan, Bozenna	University of Kansas
Tembine, Hamidou	New York University

10:40-11:00 WeA09.3

A Quantilized Mean Field Game Approach to Energy Pricing with Application to Fleets of Plug-In Electric Vehicles (I), pp. 299-304.

Foguen Tchuendom, Rinel	Ecole Poly. de Montreal
Malhame, Roland P.	Ecole Poly. de Montreal
Caines, Peter E.	McGill University

11:00-11:20 WeA09.4

The Current Method for Stationary Mean-Field Games on Networks (I), pp. 305-310.

Farias, Diego Marcon	Universidade Federal do Rio Grande do Sul
Gomes, Diogo	King Abdullah University of Science and Technology
Fatimah, Al Saleh	King Abdullah University of Science and Technology

11:20-11:40 WeA09.5

Mean Field Games on Prosumers (I), pp. 311-316.

Baar, Wouter	University of Groningen
Bauso, Dario	University of Groningen

11:40-12:00 WeA09.6

Partially-Observed Discrete-Time Risk-Sensitive Mean-Field Games (I), pp. 317-322.

Saldi, Naci	Ozyegin University
Basar, Tamer	University of Illinois, Urbana Champaign
Raginsky, Maxim	University of Illinois, Urbana Champaign

WeA10 Méditerranée C12

Models and Control Methods Tor Traffic Networks (Invited Session)

Chair: Como, Giacomo	Politecnico di Torino
Co-Chair: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Organizer: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Organizer: Pasquale, Cecilia	University of Genova
Organizer: Siri, Silvia	University of Genova

10:00-10:20 WeA10.1

Modeling the Impact of On-Line Navigation Devices in Traffic Flows (I), pp. 323-328.

Festa, Adriano	Austrian Academy of Science
Goatin, Paola	INRIA

10:20-10:40 WeA10.2

Joint Time and Energy-Optimal Control of Connected Automated Vehicles at Signal-Free Intersections with Speed-Dependent Safety Guarantees (I), pp. 329-334.

Zhang, Yue	Boston University
Cassandras, Christos G.	Boston University

10:40-11:00 WeA10.3

On a Weaker Notion of Ring Stability for Mixed Traffic with Human-Driven and Autonomous Vehicles (I), pp. 335-340.

Giammarino, Vittorio	Delft University of Technology
Lyu, Maolong	Delft University of Technology
Baldi, Simone	School of Mathematics
Frasca, Paolo	CNRS, GIPSA-Lab, University Grenoble Alpes
Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes

11:00-11:20 WeA10.4

Linear-Parameter-Varying Approximation of Nonlinear Dynamics for Model Predictive Flow Control of Urban Multi-Region Systems (I), pp. 341-346.

Kouvelas, Anastasios	ETH Zurich
Saeedmanesh, Mohammadreza	EPFL
Geroliminis, Nikolas	Urban Transport Systems Laboratory, EPFL

11:20-11:40 WeA10.5

The Green Choice: Learning and Influencing Human Decisions on Shared Roads, pp. 347-354.

BIYIK, Erdem	Stanford University
Lazar, Daniel	University of California, Santa Barbara
Sadigh, Dorsa	Stanford University
Pedarsani, Ramtin	University of California, Santa Barbara

11:40-12:00 WeA10.6

On Stability of Users Equilibria in Heterogeneous Routing Games, pp. 355-360.

Cianfanelli, Leonardo	Politecnico di Torino
Como, Giacomo	Politecnico di Torino

WeA11 Galliéni 1

Observers for Linear Systems (Regular Session)

Chair: Silvestre, Carlos	Instituo Superior Técnico
Co-Chair: Sassano, Mario	University of Rome, Tor Vergata

10:00-10:20 WeA11.1

Sensitivity Analysis for Linear Systems Based on Reachability Sets, pp. 361-366.

Silvestre, Daniel	University of Macau
Rosa, Paulo	Deimos Engenharia
Hespanha, Joao P.	University of California, Santa Barbara
Silvestre, Carlos	Instituo Superior Técnico

10:20-10:40 WeA11.2

A Distributed Observer for a Discrete-Time Linear System, pp. 367-372.

Wang, Lili	Yale University
Liu, Ji	Stony Brook University
Morse, A. Stephen	Yale University
Anderson, Brian D.O.	Australian National University/NICTA

10:40-11:00 WeA11.3

The J-Orthogonal Square-Root NIRK-Based Extended-Unscented Kalman Filter for Nonlinear Continuous-Discrete Stochastic Systems, pp. 373-378.

Kulikov, Gennady Yu.	Instituto Superior Tecnico, Universidade de Lisboa
Kulikova, Maria V.	Instituto Superior Tecnico, Universidade de Lisboa

11:00-11:20 WeA11.4

Optimally Bounded Interval Kalman Filter, pp. 379-384.

Lu, Quoc-Hung	UPS, LAAS-CNRS
Fergani, Soheib	LAAS-CNRS, Laboratory for Analysis and Architecture of Systems
Jauberthie, Carine	LAAS-CNRS
Le Gall, Françoise	LAAS-CNRS

11:20-11:40 WeA11.5

Finite-Time State Estimation of Discrete-Time Linear Systems with Some Extensions. Application to Steering Lateral Vehicle Model, pp. 385-389.

Chaib Draa, Khadidja	Université du Luxembourg
Zemouche, Ali	CRAN UMR CNRS 7039 & INRIA: EPI-DISCO
Rajamani, Rajesh	University of Minnesota
Laleg-Kirati, Taous-Meriem	King Abdullah University of Science and Technology (KAUST)

11:40-12:00 WeA11.6

Deterministic Optimality of the Steady-State Behavior of the Kalman-Bucy Filter, pp. 390-395.

Possieri, Corrado	Politecnico di Torino
Sassano, Mario	University of Rome, Tor Vergata

WeA12 Galliéni 2

Dynamics, Control and Information Processing of Quantum Systems (Invited Session)

Chair: Dong, Daoyi	University of New South Wales
Co-Chair: Nurdin, Hendra I	University of New South Wales
Organizer: Dong, Daoyi	University of New South Wales
Organizer: Ticozzi, Francesco	University of Padova
Organizer: Li, Jr-Shin	Washington University in St. Louis

10:00-10:20 WeA12.1

Tomography of Binary Quantum Detectors (I), pp. 396-400.

Wang, Yuanlong	University of New South Wales, Canberra
Dong, Daoyi	University of New South Wales
Yonezawa, Hidehiro	University of New South Wales

10:20-10:40 WeA12.2

Towards Single-Input Single-Output Nonlinear System Identification and Signal Processing on Near-Term Quantum Computers (I), pp. 401-406.

Chen, Jiayin	University of New South Wales
Nurdin, Hendra I	University of New South Wales
Yamamoto, Naoki	Keio University

10:40-11:00 WeA12.3

Is Entanglement Necessary in the Reservoir Input? (I), pp. 407-412.

Miao, Zibo — Harbin Institute of Technology, Shenzhen
Chen, Yu — The Chinese University of HongKong
Yuan, Haidong — Hong Kong Polytechnic University

11:00-11:20 WeA12.4

Quantum Information Encoding from Stabilizing Dynamics (I), pp. 413-418.

Ticozzi, Francesco — University of Padova
Baggio, Giacomo — University of California, Riverside
Viola, Lorenza — Dartmouth College

11:20-11:40 WeA12.5

Robust Population Transfer for Coupled Spin Ensembles (I), pp. 419-424.

Zhang, Wei — Washington University in St. Louis
Narayanan, Vignesh — Washington University in St. Louis
Li, Jr-Shin — Washington University in St. Louis

11:40-12:00 WeA12.6

A Quantum Karhunen-Loeve Expansion and Quadratic-Exponential Functionals for Linear Quantum Stochastic Systems (I), pp. 425-430.

Vladimirov, Igor G. — Australian National University
Petersen, Ian R. — Australian National University
James, Matthew R. — Australian National University

WeA13 Galliéni 4

Predictive Control for Linear Systems I (Regular Session)

Chair: Görges, Daniel — University of Kaiserslautern
Co-Chair: Maciejowski, Jan M. — University of Cambridge

10:00-10:20 WeA13.1

Model Predictive Control with Constraint Aggregation Applied to Conventional and Very Flexible Aircraft, pp. 431-437.

de Freitas Virgilio Pereira, Mateus — University of Michigan
Kolmanovsky, Ilya V. — University of Michigan
Cesnik, Carlos — University of Michigan

10:20-10:40 WeA13.2

Scalable Robust Model Predictive Control for Linear Sampled-Data Systems, pp. 438-444.

Gruber, Felix — Technical University of Munich
Althoff, Matthias — Technical University of Munich

10:40-11:00 WeA13.3

Robust Self-Triggered MPC for Constrained Linear Systems with Additive Disturbance, pp. 445-450.

Lu, Liang — Qingdao University
Maciejowski, Jan M. — University of Cambridge

11:00-11:20 WeA13.4

Tube Based Adaptive Model Predictive Control, pp. 451-456.

Dhar, Abhishek — Indian Institute of Technology, Delhi
Bhasin, Shubhendu — Indian Institute of Technology, Delhi

11:20-11:40 WeA13.5

Robust Tube-Based Tracking MPC for Linear Systems with Multiplicative Uncertainty, pp. 457-462.

Peschke, Tobias — University of Kaiserslautern
Görges, Daniel — University of Kaiserslautern

11:40-12:00 WeA13.6

Obtaining a Stabilizing Prediction Horizon in Quadratic Programming Model Predictive Control, pp. 463-467.

Morgenstern, Dimitri — Fraunhofer Institute for Industrial Mathematics
Görges, Daniel — University of Kaiserslautern
Wirsen, Andreas — Fraunhofer Institute for Industrial Mathematics

WeA14 Galliéni 7

Lyapunov Methods I (Regular Session)

Chair: Reger, Johann — TU Ilmenau
Co-Chair: Postoyan, Romain — CNRS, CRAN, Université de Lorraine

10:00-10:20 WeA14.1

On Almost Lyapunov Functions for Systems with Inputs, pp. 468-473.

Liu, Shenyu — Coordinated Science Laboratory, University of Illinois, Urbana Champaign
Liberzon, Daniel — University of Illinois, Urbana Champaign

10:20-10:40 WeA14.2

Control Barrier Functions for Systems with High Relative Degree, pp. 474-479.

Xiao, Wei — Boston University
Belta, Calin — Boston University

10:40-11:00 WeA14.3

Dynamic Extensions for Exact Backstepping Control of Systems in Pure Feedback Form, pp. 480-486.

Reger, Johann — TU Ilmenau
Triska, Lukas — Friedrich-Alexander-Universität Erlangen-Nürnberg

11:00-11:20 WeA14.4

Stability Guarantees for Nonlinear Discrete-Time Systems Controlled by Approximate Value Iteration, pp. 487-492.

Postoyan, Romain — CNRS, CRAN, Université de Lorraine
Granzotto, Mathieu — CNRS, CRAN, Université de Lorraine
Busoniu, Lucian — Technical University of Cluj-Napoca
Scherrer, Bruno — INRIA
Nesic, Dragan — University of Melbourne
Daafouz, Jamal — Université de Lorraine, CRAN, CNRS

11:20-11:40 WeA14.5

Stability of Systems with Periodic Nonlinearities: A Method of Periodic Lyapunov Functionals, pp. 493-498.

Smirnova, Vera — Saint-Petersburg University of Architecture and Civil Engineering
Proskurnikov, Anton V. — Politecnico di Torino

11:40-12:00 WeA14.6

Leader-Follower Trajectory Tracking Control for a Mobile Robot with Unknown Amplitudes of Reference Velocities and Input Disturbances, pp. 499-504.

Zhang, Xu	Shanghai Jiao Tong University
Yu, Xiao	Shanghai Jiao Tong University
Chen, Weidong	Shanghai Jiao Tong University

WeA15 Rhodes GH

Geometric Optimal Control Theory and Applications (Invited Session)

Chair: Pomet, Jean-Baptiste	INRIA
Co-Chair: Gutman, Per-Olof	Technion
Organizer: Pomet, Jean-Baptiste	INRIA

10:00-10:20 WeA15.1

Connection between Singular Arcs in Optimal Control Using Bridges. Physical Occurence and Mathematical Model (I), pp. 505-510.

Bakir, Toufik	Université de Bourgogne Franche-Comté
Bonnard, Bernard	Institut de Mathématiques de Bourgogne
Rouot, Jérémy	EPF: Ecole D'Ingénieur

10:20-10:40 WeA15.2

Injectivity of the Inverse Optimal Control Problem for Control-Affine Systems (I), pp. 511-516.

Jean, Frederic	ENSTA ParisTech
Maslovskaya, Sofya	INRIA Sophia Antipolis

10:40-11:00 WeA15.3

Zermelo-Markov-Dubins Problem and Extensions in Marine Navigation (I), pp. 517-522.

Caillau, Jean-Baptiste	Université Côte d'Azur, CNRS, INRIA, LJAD
Maslovskaya, Sofya	INRIA Sophia Antipolis
Mensch, Thomas	CGG
Moulinier, Timothée	CGG
Pomet, Jean-Baptiste	INRIA

11:00-11:20 WeA15.4

Minimum Time Optimal Control of Second Order System with Quadratic Drag and State Constraints, pp. 523-528.

Taitler, Ayal	Technion
Ioslovich, Ilya	Technion
Karpas, Erez	Technion
Gutman, Per-Olof	Technion

11:20-11:40 WeA15.5

Discrete-Time Maximum Hands-Off Control with Minimum Switches, pp. 529-534.

Kishida, Masako	National Institute of Informatics
Nagahara, Masaaki	University of Kitakyushu
Chatterjee, Debasish	Indian Institute of Technology, Bombay

11:40-12:00 WeA15.6

A No Infimum-Gap Criterion, pp. 535-540.

Palladino, Michele	GSSI - Gran Sasso Science Institute
Rampazzo, Franco	University of Padova

WeA16 Rhodes AB

Optimization I (Regular Session)

Chair: Poovendran, Radha	University of Washington
Co-Chair: Dall'Anese, Emiliano	University of Colorado, Boulder

10:00-10:20 WeA16.1

Random Coordinate Minimization Method with Eventual Transverse Directions for Constrained Polynomial Optimization, pp. 541-546.

Calafiore, Giuseppe C.	Politecnico di Torino
Novara, Carlo	Politecnico di Torino
Possieri, Corrado	Politecnico di Torino

10:20-10:40 WeA16.2

Fastest Mixing Markov Chain on a Compact Manifold, pp. 547-554.

Biswal, Shiba	Arizona State University
Elamvazhuthi, Karthik	Arizona State University
Berman, Spring	Arizona State University

10:40-11:00 WeA16.3

A Distributed Algorithm for Online Convex Optimization with Time-Varying Coupled Inequality Constraints, pp. 555-560.

Yi, Xinlei	KTH Royal Institute of Technology
Li, Xiuxian	Nanyang Technological University
Xie, Lihua	Nanyang Technological University
Johansson, Karl H.	KTH Royal Institute of Technology

11:00-11:20 WeA16.4

UKF-Based Constrained Extremum-Seeking Control with Application to a Large-Bore Gas Engine, pp. 561-566.

Lutz, Max	Kiel University
Freudenthaler, Gerhard	Kiel University
Roduner, Christian Andreas	AVL Software and Functions GmbH
Meurer, Thomas	Kiel University

11:20-11:40 WeA16.5

Dynamic Information Flow Tracking Games for Simultaneous Detection of Multiple Attackers, pp. 567-574.

Sahabandu, Dinuka	University of Washington
Moothedath, Shana	University of Washington
Allen, Joey	Georgia Institute of Technology
Clark, Andrew	Worcester Polytechnic Institute
Bushnell, Linda	University of Washington
Lee, Wenke	Georgia Institute of Technology
Poovendran, Radha	University of Washington

11:40-12:00 WeA16.6

Saddle-Flow Dynamics for Distributed Feedback-Based Optimization, pp. 575-580.

CHANG, CHIN-YAO	National Renewable Energy Laboratory
Colombino, Marcello	McGill University
Cortes, Jorge	University of California, San Diego
Dall'Anese, Emiliano	University of Colorado, Boulder

WeA17 Rhodes CD

Switched Systems I (Regular Session)

Chair: Trenn, Stephan	University of Groningen
Co-Chair: Fribourg, Laurent	CNRS

10:00-10:20	WeA17.1

A Time-Varying Convex Lyapunov Function Approach for Dynamic Output Feedback Hoo Control of Switched Linear Systems, pp. 581-586.

Daiha, Helder R.	School of Mechanical Engineering, UNICAMP
Deaecto, Grace S.	FEM/UNICAMP

10:20-10:40	WeA17.2

Converse Lyapunov Theorems for Infinite-Dimensional Nonlinear Switching Systems, pp. 587-592.

Haidar, Ihab	ENSEA
Chitour, Yacine	Université Paris-Sud, CNRS, Supelec
Mason, Paolo	CNRS, Laboratoire Des Signaux Et Systèmes, Supélec
Sigalotti, Mario	INRIA Paris

10:40-11:00	WeA17.3

New Control Design for Switched Linear Time-Invariant Systems under Arbitrary Switching, pp. 593-598.

Lee, Ti-Chung	University of Science and Technology
Tan, Ying	University of Melbourne
Mareels, Iven	IBM

11:00-11:20	WeA17.4

Guaranteed Control of Sampled Switched Systems Using Semi-Lagrangian Schemes and One-Sided Lipschitz Constants, pp. 599-604.

Le Coent, Adrien	Aalborg University
Fribourg, Laurent	CNRS

11:20-11:40	WeA17.5

The One-Step-Map for Switched Singular Systems in Discrete-Time, pp. 605-610.

Anh, Pham Ky	Vietnam National University
Linh, Pham Thi	Vietnam National University
Thuan, Do Duc	Hanoi University of Science and Technology
Trenn, Stephan	University of Groningen

11:40-12:00	WeA17.6

Asynchronous Output Feedback Control Design for Nonlinear Switched Singular Systems with Time Varying Delay, pp. 611-616.

Regaieg, Mohamed Amin	University of Amiens
mourad, Kchaou	ENIS Sfax
Bosche, Jerome	University of Amiens
El Hajjaji, Ahmed	University of Picardie-Jules Verne
Chaabane, Mohamed	National School of Engineers of Sfax (ENIS)

WeA18 — Rhodes EF

Observers for Nonlinear Systems I (Regular Session)

Chair: Trumpf, Jochen	Australian National University
Co-Chair: Gehan, Olivier	ENSICAEN

10:00-10:20	WeA18.1

Observer Design for Nonlinear Systems with Output Distributed Delay, pp. 617-622.

Ammeh, Leila	ENSA, Université Ibn Tofail, Kénitra
Giri, Fouad	University of Caen Normandie
Ahmed-Ali, Tarek	ENSICAEN
Magarotto, Eric	LAC (Laboratoire d'Automatique De Caen) EA 7478
El Fadil, Hassan	Ibn Tofail University, Kénitra

10:20-10:40	WeA18.2

H-Infinity Filter Design for a Class of Discrete-Time Nonlinear Descriptor Systems, pp. 623-628.

Coutinho, Daniel F.	Universidade Federal de Santa Catarina
de Melo Schons, Silvane C	Universidade Federal de Santa Catarina - Université Libre de Bruxelles
Kinnaert, Michel	Université Libre de Bruxelles
de Souza, Carlos E.	LNCC

10:40-11:00	WeA18.3

Observer and First-Order Low-Pass Filter Based Attitude Estimation for Rigid Bodies Subject to External Acceleration, pp. 629-634.

Bonargent, Tristan	Normandie University UNICAEN, ENSICAEN
Menard, Tomas	University of Caen
Pigeon, Eric	University of Caen
Gehan, Olivier	ENSICAEN

11:00-11:20	WeA18.4

Discrete Update Pose Filter on the Special Euclidean Group SE(3), pp. 635-641.

Zamani, Mohammad	DSTG
Trumpf, Jochen	Australian National University

11:20-11:40	WeA18.5

Third-Order Virtual Measurements with Signal Injection, pp. 642-647.

Surroop, Dilshad	Mines Paris Tech
Martin, Philippe	Mines Paris Tech, PSL Research University
Combes, Pascal	Schneider Electric
Rouchon, Pierre	Mines ParisTech

11:40-12:00	WeA18.6

DREM-Based Adaptive Observer for Induction Motors, pp. 648-653.

Pyrkin, Anton	ITMO University
Bobtsov, Alexey	ITMO University
Vedyakov, Alexey	ITMO University
Ortega, Romeo	LSS-SUPELEC
Vediakova, Anastasiia	Saint Petersburg State University
Sinetova, Madina	ITMO University

WeA19 — Galliéni 5

Advances in Nonlinear Filtering and Stochastic Control with Partial Information I (Invited Session)

Chair: Mehta, Prashant G.	University of Illinois, Urbana Champaign
Co-Chair: Yuksel, Serdar	Queen's University
Organizer: Mehta, Prashant G.	University of Illinois, Urbana Champaign
Organizer: Yuksel, Serdar	Queen's University

10:00-10:20	WeA19.1

On Weak Feller Continuity Properties of Non-Linear Filters (I), pp. 654-659.

Kara, Ali Devran	Queen's University
Saldi, Naci	Ozyegin University
Yuksel, Serdar	Queen's University

10:20-10:40 WeA19.2

Proximal Recursion for the Wonham Filter (I), pp. 660-665.

Halder, Abhishek	University of California, Santa Cruz
Georgiou, Tryphon T.	University of California, Irvine

10:40-11:00 WeA19.3

Gauge Freedom within the Class of Linear Feedback Particle Filters (I), pp. 666-671.

Abedi, Ehsan	EPFL Lausanne, Switzerland
Surace, Simone Carlo	University of Bern

11:00-11:20 WeA19.4

LQ Non-Gaussian Regulator with Markovian Control, pp. 672-677.

D'Angelo, Massimiliano	University of Roma La Sapienza
Battilotti, Stefano	University of Roma La Sapienza
Cacace, Filippo	Università Campus Biomedico di Roma
Germani, Alfredo	University of L'Aquila
Sinopoli, Bruno	Washington University in St Louis

11:20-11:40 WeA19.5

Stochastic Optimal Control with Markovian Lossy State Observations, pp. 678-683.

Huang, Minyi	Carleton University

11:40-12:00 WeA19.6

Optimal Scheduling of Multiple Sensors Which Transmit Measurements Over a Dynamic Lossy Network (I), pp. 684-689.

Carroll, Johnson	University of Johannesburg
Hmedi, Hassan	University of Texas, Austin
Arapostathis, Ari	University of Texas, Austin

WeA20 Rhodes 10

Event-Triggered and Self-Triggered Control Based on Optimization Methods (Invited Session)

Chair: Johansson, Karl H.	KTH Royal Institute of Technology
Co-Chair: Mohajerin Esfahani, Peyman	Delft University of Technology
Organizer: Heemels, W.P.M.H.	Eindhoven University of Technology
Organizer: Hirche, Sandra	Technische Universität München
Organizer: Johansson, Karl H.	KTH Royal Institute of Technology

10:00-10:20 WeA20.1

Safe Intermittent Reinforcement Learning for Nonlinear Systems (I), pp. 690-697.

Yang, Yongliang	University of Science and Technology Beijing
Vamvoudakis, Kyriakos G.	Georgia Institute of Technology
Modares, Hamidreza	Michigan State University
He, Wei	University of Science and Technology Beijing
Yin, Yi-Xin	University of Science and Technology Beijing
Wunsch, Donald C.	Missouri University of Science and Technology

10:20-10:40 WeA20.2

A Linear Programming Approach to Design Online Triggering Mechanisms for Robust MPC (I), pp. 698-703.

Sharifi Kolarijani, Arman	Delft University of Technology
Bregman, Sander Christian	Delft University of Technology
Mohajerin Esfahani, Peyman	Delft University of Technology
Keviczky, Tamas	Delft University of Technology

10:40-11:00 WeA20.3

Consistent Event-Triggered Control for Discrete-Time Linear Systems with Partial State Information, pp. 704-709.

Antunes, Duarte	Eindhoven University of Technology
Balaghi I., M. Hadi	Eindhoven University of Technology

11:00-11:20 WeA20.4

Predictive Control Over a Dynamical Token Bucket Network, pp. 710-715.

Wildhagen, Stefan	University of Stuttgart
Muller, Matthias A.	Leibniz University Hannover
Allgöwer, Frank	University of Stuttgart

11:20-11:40 WeA20.5

Event-Triggered Broadcasting for Distributed Smooth Optimization, pp. 716-721.

Liu, Changxin	University of Victoria
Li, Huiping	Northwestern Polytechnical University
Shi, Yang	University of Victoria
Xu, Demin	Northwestern Poly. Univ

11:40-12:00 WeA20.6

Event-Based Controllers with External Event Generation. Implementation Issues and Computational Cost Study, pp. 722-727.

Miguel-Escrig, Oscar	Universitat Jaume I
Romero, Julio Ariel	Universitat Jaume I

WeA21 Risso 6

Network Analysis and Control I (Regular Session)

Chair: Siami, Milad	MIT
Co-Chair: Chapman, Airlie	University of Melbourne

10:00-10:20 WeA21.1

Optimization of TCP Algorithm for Wired–Wireless Channels Based on Connection State Estimation, pp. 728-733.

Borisov, Andrey	Frc Csc Ras
Bosov, Alexey	Frc Csc Ras
Miller, Gregory	Frc Csc Ras
Stefanovich, Alexei	Frc Csc Ras

10:20-10:40 WeA21.2

A Separation Principle for Joint Sensor and Actuator Scheduling with Guaranteed Performance Bounds, pp. 734-739.

Siami, Milad	MIT
Jadbabaie, Ali	MIT

10:40-11:00 WeA21.3

Rigidity in Non-Euclidean Frameworks for Formation Control:

The Manhattan Metric, pp. 740-745.

Burke, Declan	University of Melbourne
Chapman, Airlie	University of Melbourne
Schoof, Eric	University of Washington

11:00-11:20 WeA21.4

Time-Scale Separation on Networks for Multi-City Epidemics, pp. 746-751.

Lewien, Patrick	University of Melbourne
Chapman, Airlie	University of Melbourne

11:20-11:40 WeA21.5

Disturbance Sensitivity Analysis of Evolving Network Systems from Viewpoint of Network Structure, pp. 752-757.

Urata, Kengo	Tokyo Institute of Technology
Ishizaki, Takayuki	Tokyo Institute of Technology
Imura, Jun-ichi	Tokyo Institute of Technology

11:40-12:00 WeA21.6

Dynamics Concentration of Large-Scale Tightly-Connected Networks, pp. 758-763.

Min, Hancheng	Johns Hopkins University
Mallada, Enrique	Johns Hopkins University

WeA22 Risso 7

Identification I (Regular Session)

Chair: Lindquist, Anders	KTH Royal Institute of Technology
Co-Chair: Lopes dos Santos, P.	Universidade do Porto

10:00-10:20 WeA22.1

Multivariable Analytic Interpolation with Complexity Constraints: A Modified Riccati Approach, pp. 764-770.

Cui, Yufang	Shanghai Jiao Tong University
Lindquist, Anders	Shanghai Jiao Tong University

10:20-10:40 WeA22.2

A Dynamic Mode Decomposition Approach with Hankel Blocks to Forecast Multi-Channel Temporal Series, pp. 771-776.

Vasconcelos Filho, Enio	Cister Research Centre in Real-Time &Embedded Computing Systems,
Lopes dos Santos, P.	Universidade do Porto

10:40-11:00 WeA22.3

Local Basis Function Estimators for Identification of Nonstationary Systems, pp. 777-783.

Niedzwiecki, Maciej	Gdansk University of Technology
Ciolek, Marcin	Gdansk University of Technology, Faculty of Electronics, Telecom
Gancza, Artur	Gdansk University of Technology, Faculty of Electronics Telecomm

11:00-11:20 WeA22.4

Computation of Orders of a Commensurable Fractional Order Model, pp. 784-790.

Stark, Oliver	Karlsruhe Institute of Technology
Kupper, Martin	Karlsruhe Institute of Technology
Krebs, Stefan	Karlsruhe Institute of Technology
Hohmann, Soeren	Karlsruhe Institute of Technology

11:20-11:40 WeA22.5

Identification for Switched FIR Linear Systems Using Binary Measurements, pp. 791-796.

Auber, Romain	Université de Caen
Pouliquen, Mathieu	Université de Caen
GOUDJIL, Abdelhak	University of Caen Normandy
Pigeon, Eric	University of CAEN
Gehan, Olivier	ENSICAEN
Menard, Tomas	University of Caen
Bonargent, Tristan	Normandie Univ, UNICAEN, ENSICAEN, LAC, 14000 Caen, France

11:40-12:00 WeA22.6

Asymptotic Analysis of Recursive (Particle) Maximum Likelihood Estimation in Non-Linear State-Space Models, pp. 797-802.

Tadic, Vladislav	University of Bristol
Doucet, Arnaud	University of Oxford

WeA23 Risso 8

Learning-Based Controller Synthesis (Invited Session)

Chair: Schoellig, Angela P	University of Toronto
Co-Chair: Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Organizer: Schoellig, Angela P	University of Toronto
Organizer: Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Organizer: Zeilinger, Melanie N.	ETH Zurich
Organizer: Muller, Matthias A.	Leibniz University Hannover

10:00-10:20 WeA23.1

Deep Reinforcement Learning with Feedback-Based Exploration (I), pp. 803-808.

Scholten, Jan Jelmer	Delft University of Technology
Wout, Daan	Delft University of Technology
Celemin, Carlos	Delft University of Technology
Kober, Jens	Delft University of Technology

10:20-10:40 WeA23.2

Inverse Learning for Human-Adaptive Motion Planning (I), pp. 809-815.

Menner, Marcel	ETH Zurich
Berntorp, Karl	Mitsubishi Electric Research Labs
Zeilinger, Melanie N.	ETH Zurich
Di Cairano, Stefano	Mitsubishi Electric Research Labs

10:40-11:00 WeA23.3

A Data-Driven Policy Iteration Scheme Based on Linear Programming (I), pp. 816-821.

Banjac, Goran	ETH Zurich
Lygeros, John	ETH Zurich

11:00-11:20 WeA23.4

Bayesian Kernel-Based Linear Control Design (I), pp. 822-827.

Scampicchio, Anna	University of Padova
Chiuso, Alessandro	University of Padova
Formentin, Simone	Politecnico di Milano
Pillonetto, Gianluigi	University of Padova

11:20-11:40 WeA23.5

Closed-Loop Model Selection for Kernel-Based Models Using Bayesian Optimization (I), pp. 828-834.

Beckers, Thomas	Technical University of Munich
Bansal, Somil	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley
Hirche, Sandra	Technical University of Munich

11:40-12:00 WeA23.6

Learning Robust LQ-Controllers Using Application Oriented Exploration, pp. 835-840.

Ferizbegovic, Mina	KTH Royal Institute of Technology
Umenberger, Jack	Uppsala University
Hjalmarsson, Håkan	KTH Royal Institute of Technology
Schön, Thomas (Bo)	Uppsala University

WeA24 Hermès

Learning I (Regular Session)

Chair: Darivianakis, Georgios	ABB Corporate Research Center
Co-Chair: Shim, Hyungbo	Seoul National University

10:00-10:20 WeA24.1

Approximate Explicit Model Predictive Controller Using Gaussian Processes, pp. 841-846.

Binder, Matthias	ETH Zurich
Darivianakis, Georgios	ABB Corporate Research Center
Eichler, Annika	DESY
Lygeros, John	ETH Zurich

10:20-10:40 WeA24.2

On Improving the Robustness of Reinforcement Learning-Based Controllers Using Disturbance Observer, pp. 847-852.

Kim, Jeong Woo	Seoul National University
Shim, Hyungbo	Seoul National University
Yang, Insoon	Seoul National University

10:40-11:00 WeA24.3

A Predictive Deep Learning Approach to Output Regulation: The Case of Collaborative Pursuit Evasion, pp. 853-859.

Shivam, Shashwat	Georgia Institute of Technology
Kanellopoulos, Aris	Georgia Institute of Technology
Vamvoudakis, Kyriakos G.	Georgia Institute of Technology
Wardi, Yorai	Georgia Institute of Technology

11:00-11:20 WeA24.4

Learning Feature Maps of the Koopman Operator: A Subspace Viewpoint, pp. 860-866.

Lian, Yingzhao	EPFL
Jones, Colin N.	EPFL

11:20-11:40 WeA24.5

Combinatorial Bandits for Sequential Learning in Colonel Blotto Games, pp. 867-872.

Vu, Dong Quan	Nokia Bell Labs
Loiseau, Patrick	INRIA
Silva, Alonso	Signal and Information Technologies, Safran Tech

11:40-12:00 WeA24.6

On Persistency of Excitation and Formulas for Data-Driven Control, pp. 873-878.

De Persis, Claudio	University of Groningen
Tesi, Pietro	University of Firenze

WeA25 Athéna

Multi-Agent Systems I (Regular Session)

Chair: Nagahara, Masaaki	University of Kitakyushu
Co-Chair: Panayiotou, Christos	University of Cyprus

10:00-10:20 WeA25.1

A Decentralized Control Framework for Energy-Optimal Goal Assignment and Trajectory Generation, pp. 879-884.

Beaver, Logan	University of Delaware
Malikopoulos, Andreas A.	University of Delaware

10:20-10:40 WeA25.2

Majority Determination on Binary-Valued Communication Networks, pp. 885-889.

Azuma, Shun-ichi	Nagoya University
Nagahara, Masaaki	University of Kitakyushu

10:40-11:00 WeA25.3

A Privacy-Preserving Disaggregation Algorithm for Non-Intrusive Management of Flexible Energy, pp. 890-896.

Jacquot, Paulin	EDF R&D, INRIA, Ecole Polytechnique, CNRS
Beaude, Olivier	Edf R&d, Osiris
Benchimol, Pascal	Edf R&d, Osiris
Gaubert, Stephane	INRIA and Ecole Polytechnique
Oudjane, Nadia	EDF

11:00-11:20 WeA25.4

Positive Consensus of Directed Multi-Agent Systems, pp. 897-902.

Yang, Nachuan	University of Hong Kong
Yin, Yonghua	Imperial College London
Liu, Jinrong	University of Hong Kong

11:20-11:40 WeA25.5

Finite-Time Distributed Flow Balancing, pp. 903-908.

Hadjicostis, Christoforos N.	University of Cyprus
Dominguez-Garcia, Alejandro D.	University of Illinois, Urbana Champaign
Rikos, Apostolos I.	University of Cyprus

11:40-12:00 WeA25.6

Decentralized Search and Track with Multiple Autonomous Agents, pp. 909-915.

Papaioannou, Savvas	KIOS CoE
Kolios, Panayiotis	University of Cyprus
Theocharides, Theocharis	University of Cyprus
Panayiotou, Christos	University of Cyprus
Polycarpou, Marios M.	University of Cyprus

WeA26 Apollon

Cybergenetics: Control of Living Cells (Tutorial Session)

Chair: Khammash, Mustafa H.	ETH Zurich
Co-Chair: di Bernardo, Mario	University of Bristol
Organizer: Khammash, Mustafa H.	ETH Zurich
Organizer: di Bernardo, Mario	University of Napoli Federico II
Organizer: di Bernardo, Diego	Telethon Institute of Genetics and Medicine

10:00-10:05 WeA26.1

An Introduction to Cybergenetics (I), pp. 916-926.

Khammash, Mustafa H.	ETH Zurich

10:05-10:40 WeA26.2

*Biomolecular Control Systems for Living Cells (I)**.

Khammash, Mustafa H.	ETH Zurich

10:40-11:00 WeA26.3

*Computer Control of Living Cells (I)**.

di Bernardo, Diego	Telethon Institute of Genetics and Medicine

11:00-11:20 WeA26.4

*Multicellular Feedback Control (I)**.

di Bernardo, Mario	University of Napoli Federico II

11:20-11:40 WeA26.5

*A Systematic Framework for Biomolecular System Identification (I)**.

Menolascina, Filippo	University of Edinburgh

11:40-12:00 WeA26.6

*Biocontrol Experiments: How to Start Your Own Lab! (I)**.

di Bernardo, Diego	Telethon Institute of Genetics and Medicine

WeB01 Méditerranée 1

Control Systems for Biology: Methodologies and Applications (Invited Session)

Chair: di Bernardo, Diego	Telethon Institute of Genetics and Medicine
Co-Chair: Khammash, Mustafa H.	ETH Zurich
Organizer: di Bernardo, Mario	University of Napoli Federico II
Organizer: di Bernardo, Diego	Telethon Institute of Genetics and Medicine
Organizer: Khammash, Mustafa H.	ETH Zurich

14:00-14:20 WeB01.1

Ratiometric Control for Differentiation of Cell Populations Endowed with Synthetic Toggle Switches (I), pp. 927-932.

Salzano, Davide	University of Napoli Federico II
Fiore, Davide	University of Napoli Federico II
di Bernardo, Mario	University of Napoli Federico II

14:20-14:40 WeB01.2

Feedback Control Promotes Synchronisation of the Cell-Cycle across a Population of Yeast Cells (I), pp. 933-938.

Perrino, Giansimone	Telethon Institute of Genetics and Medicine
Fiore, Davide	University of Napoli Federico II
Napolitano, Sara	Telethon Institute of Genetics and Medicine
Galdi, Francesca	Telethon Institute of Genetics and Medicine
La Regina, Antonella	Telethon Institute of Genetics and Medicine
di Bernardo, Mario	University of Bristol
di Bernardo, Diego	Telethon Institute of Genetics and Medicine

14:40-15:00 WeB01.3

Moment-Based Analysis of Biochemical Networks in a Heterogeneous Population of Communicating Cells (I), pp. 939-944.

Gonzales, David	Max Planck Institute of Molecular Cell Biology and Genetics
Tang, T-Y Dora	Max Planck Institute of Molecular Cell Biology and Genetics
Zechner, Christoph	Max Planck Institute of Molecular Cell Biology and Genetics

15:00-15:20 WeB01.4

A Linear Constrained Integral Feedback for a Class of Reaction Systems with Absolute Concentration Robustness (I), pp. 945-950.

Cappelletti, Daniele	ETH Zurich
Gupta, Ankit	ETH Zürich
Khammash, Mustafa H.	ETH Zurich

15:20-15:40 WeB01.5

Optimal Parameter Tuning of Feedback Controllers with Application to Biomolecular Antithetic Integral Control, pp. 951-957.

Filo, Maurice	Swiss Federal Institute of Technology in Zurich
Khammash, Mustafa H.	ETH Zurich

15:40-16:00 WeB01.6

Biomolecular Stabilisation Near the Unstable Equilibrium of a Biological System, pp. 958-964.

Cuba Samaniego, Christian	University of California, Riverside
DeLateur, Nicholas	Massachusetts Institute of Technology
Giordano, Giulia	Delft University of Technology
Franco, Elisa	University of California, Los Angeles

WeB02 Méditerranée 2

Delay Systems II (Regular Session)

Chair: Bonnet, Catherine	INRIA Saclay-Ile-De-France
Co-Chair: Trenn, Stephan	University of Groningen

14:00-14:20 WeB02.1

Distributed Time Delay Systems for Power Law Type Long Memory Behaviors Modelling, pp. 965-970.

Sabatier, Jocelyn	IMS Laboratory - Bordeaux University

14:20-14:40 WeB02.2

A Problematic Issue in the Walton-Marshall Method for Some Neutral Delay Systems, pp. 971-975.

Nguyen, Le Ha Vy	INRIA
Bonnet, Catherine	INRIA Saclay-Ile-de-France
Boussaada, Islam	IPSA & L2S, CNRS-CentraleSupelec-Université Paris-Sud
Souaiby, Marianne	LAAS-CNRS

14:40-15:00 WeB02.3

Discrete-Time Adaptive Regulation of Scalar Systems with Uncertain Upper-Bounded Input Delay, pp. 976-982.

Abidi, Khalid	Newcastle University
Soo, Hang Jian	None
Postlethwaite, Ian	Newcastle University

15:00-15:20 WeB02.4

Estimator-Based Output-Feedback Stabilization of Linear Multi-Delay Systems Using SOS, pp. 983-988.

Wu, Shuangshuang	Yanshan University

Hua, Chang-Chun	Yanshan University
Peet, Matthew M.	Arizona State University

15:20-15:40 WeB02.5

Delay Regularity of Differential-Algebraic Equations, pp. 989-994.

Trenn, Stephan	University of Groningen
Unger, Benjamin	TU Berlin

15:40-16:00 WeB02.6

Torsional Vibration Suppression with Boundary Impulsive Conditions in Rotary Drilling System, pp. 995-1000.

TOUMI, Samir	Polytechnic School of Tunisia
Beji, Lotfi	University of Evry
Mlayeh, Rhouma	Polytechnic School of Tunisia

WeB03 Méditerranée 5

Adaptive Control II (Regular Session)

Chair: Baldi, Simone	Delft University of Technology
Co-Chair: Duffaut Espinosa, Luis Augusto	University of Vermont

14:00-14:20 WeB03.1

Measures and LMIs for Adaptive Control Validation, pp. 1001-1006.

Wagner, Daniel	Czech Technical University in Prague
Henrion, Didier	LAAS-CNRS
Hromcik, Martin	Czech Technical University, FEE

14:20-14:40 WeB03.2

Adaptive Optimal Control Via Continuous-Time Q-Learning for Unknown Nonlinear Affine Systems, pp. 1007-1012.

Chen, Anthony Siming	University of Bristol
Herrmann, Guido	University of Manchester

14:40-15:00 WeB03.3

Combining Learning and Model Based Multivariable Control, pp. 1013-1018.

GUGGILAM, SUBBARAO VENKATESH	Old Dominion University
Gray, W. Steven	Old Dominion University
Duffaut Espinosa, Luis Augusto	University of Vermont

15:00-15:20 WeB03.4

Model Based Adaptive Control for a Soft Robotic Manipulator, pp. 1019-1024.

Franco, Enrico	Imperial College London
Garriga-Casanovas, Arnau	Imperial College London
Rodriguez y Baena, Ferdinando	Imperial College London
Astolfi, Alessandro	Imperial College & University of Rome

15:20-15:40 WeB03.5

Adaptive Tracking Control of Nonlinear Time-Varying Systems with Unknown Control Coefficients and Unknown Time-Varying Parameters, pp. 1025-1030.

Zhou, Jing	University of Agder

15:40-16:00 WeB03.6

Global Frequency Synchronization Over Uncertain Networks of Second-Order Kuramoto Oscillators Via Distributed Adaptive Tracking, pp. 1031-1036.

Bosso, Alessandro	University of Bologna
Azzollini, Ilario Antonio	University of Bologna
Baldi, Simone	Southeast University

WeB04 Méditerranée A2

Supervisory Control (Regular Session)

Chair: Jayawardhana, Bayu	University of Groningen
Co-Chair: Takai, Shigemasa	Osaka Univ

14:00-14:20 WeB04.1

Maximally Permissive Similarity Enforcing Supervisors for Nondeterministic Discrete Event Systems under Partial Observation, pp. 1037-1042.

Li, Jinglun	Osaka Univ
Takai, Shigemasa	Osaka Univ

14:20-14:40 WeB04.2

Supervisory Control under Local Mean Payoff Constraints, pp. 1043-1049.

Ji, Yiding	University of Michigan
Yin, Xiang	Shanghai Jiao Tong University
Lafortune, Stephane	University of Michigan

14:40-15:00 WeB04.3

Supervisory Control of Communicating Timed Discrete Event Systems for State Avoidance Problem, pp. 1050-1055.

Pruekprasert, Sasinee	National Institute of Informatics, Tokyo
Ushio, Toshimitsu	Osaka University

15:00-15:20 WeB04.4

Reactive Supervisory Control of Open Discrete Event Systems, pp. 1056-1061.

Partovi, Alireza	University of Notre Dame
Lin, Hai	University of Notre Dame

15:20-15:40 WeB04.5

On the Optimal Input Allocation of Discrete-Event Systems with Dynamic Input Sequence, pp. 1062-1067.

Cahyono, Rully	University of Groningen
Jayawardhana, Bayu	University of Groningen

15:40-16:00 WeB04.6

Minimising Makespan of Discrete Controllers: A Qualitative Approach, pp. 1068-1075.

Castellano, Ezequiel	SOKENDAI
Braberman, Victor	Universidad de Buenos Aires
D'Ippolito, Nicolás	Universidad de Buenos Aires
Uchitel, Sebastián	Universidad de Buenos Aires
Tei, Kenji	National Institute of Informatics

WeB05 Méditerranée C4

Flexible Control and Estimation Methods (Invited Session)

Chair: Sun, Zhiyong	Lund University
Co-Chair: Maestre, J.M.	University of Seville
Organizer: Camacho, Eduardo F.	University of Sevilla
Organizer: Maestre, J.M.	University of Seville

14:00-14:20 WeB05.1

Recursive Elimination Method for Moving Horizon Estimation of Discrete-Time Polynomial Systems (I), pp. 1076-1082.

Iori, Tomoyuki	Kyoto University
Ohtsuka, Toshiyuki	Kyoto University

14:20-14:40 WeB05.2

On Distributed High-Gain Adaptive Stabilization (I), pp. 1083-1088.

Sun, Zhiyong	Lund University
Rantzer, Anders	Lund University
Li, Zhongkui	Peking University
Robertsson, Anders	LTH, Lund University

14:40-15:00 WeB05.3

Low-Complexity Robust Decentralized MPC: A Foundational Algorithm for Constrained Coalitional Control (I), pp. 1089-1095.

Trodden, Paul Anthony	University of Sheffield
Baldivieso Monasterios, Pablo Rodolfo	University of Sheffield

15:00-15:20 WeB05.4

A Coalitional Control Scheme with Topology-Switchings Convexity Guarantees, pp. 1096-1101.

Chanfreut, Paula	University of Seville
Maestre, J.M.	University of Seville
Muros, Francisco Javier	University of Seville
Camacho, Eduardo F.	University of Sevilla

15:20-15:40 WeB05.5

Concepts, Decompositions, and Optimal Control Laws for a Gaussian Team Problem, pp. 1102-1107.

van Schuppen, Jan H.	Van Schuppen Control Research
Charalambous, Charalambos D.	University of Cyprus

WeB06 Méditerranée A3

Control of Networks I (Regular Session)

Chair: Paganini, Fernando	Universidad ORT Uruguay
Co-Chair: Frasca, Mattia	University of Catania

14:00-14:20 WeB06.1

Leader-Follower Consensus of Linear Multi-Agent Systems with Input Saturation, pp. 1108-1113.

Li, Pengyuan	Dalian University of Technology
Jabbari, Faryar	University of California, Irvine
Sun, Xi-Ming	Dalian University of Technology

14:20-14:40 WeB06.2

An Optimization Approach to Load Balancing, Scheduling and Right Sizing of Cloud Computing Systems with Data Locality, pp. 1114-1119.

Paganini, Fernando	Universidad ORT, Uruguay
Goldsztajn, Diego	Universidad ORT, Uruguay
Ferragut, Andres	Universidad ORT, Uruguay

14:40-15:00 WeB06.3

Decentralized Control for Guaranteed Individual Costs in a Linear Multi-Agent System: A Satisfaction Equilibrium Approach, pp. 1120-1125.

Veetaseveera, Jomphop	Université de Lorraine
Satheeskumar Varma, Vineeth	CNRS
Morarescu, Irinel-Constantin	CRAN, CNRS, Université de Lorraine
Daafouz, Jamal	Université de Lorraine, CRAN, CNRS

15:00-15:20 WeB06.4

A Network-Decentralised Strategy for Shortest-Path-Flow Routing, pp. 1126-1131.

Blanchini, Franco	University of Udine
Casagrande, Daniele	University of Udine
Fabiani, Filippo	Delft University of Technology
Giordano, Giulia	Delft University of Technology
Pesenti, Raffaele	University of Venice - Ca' Foscari

15:20-15:40 WeB06.5

Optimal Linear Exponential Quadratic Gaussian Estimation with Intermittent Observations, pp. 1132-1137.

Xu, Jiapeng	East China University of Science and Technology
Wu, Xiaotai	Anhui Polytechnic University
Tang, Yang	East China University of Science and Technology

15:40-16:00 WeB06.6

Control Technique for Synchronization of Selected Nodes in Directed Networks, pp. 1138-1143.

Ursino, Bruno	University of Catania
Gambuzza, Lucia Valentina	University of Catania
Latora, Vito	Queen Mary University of London
Frasca, Mattia	University of Catania

WeB07 Méditerranée A1

Robotics II (Regular Session)

Chair: Mohseni, Kamran	University of Florida
Co-Chair: Moreau, Clément	Université Côte d'Azur, INRIA Sophia Antipolis

14:00-14:20 WeB07.1

Stable, Concurrent Controller Composition for Multi-Objective Robotic Tasks, pp. 1144-1151.

Li, Anqi	Georgia Institute of Technology
Cheng, Ching-An	Georgia Institute of Technology
Boots, Byron	Georgia Institute of Technology
Egerstedt, Magnus	Georgia Institute of Technology

14:20-14:40 WeB07.2

Guaranteed Tracking Controller for Wheeled Mobile Robot Based on Flatness and Interval Observer, pp. 1152-1158.

Abadi, Amine	National Engineering School of Sousse
El Amraouil, Adnen	Université D'Orléans
mekki, hassen	National Engineering School of Sousse
Ramdani, Nacim	University of Orléans

14:40-15:00 WeB07.3

Safety Verification of Nonlinear Polynomial System Via Occupation Measures, pp. 1159-1164.

Chen, Ximing	University of Pennsylvania
Chen, Shaoru	University of Pennsylvania
Preciado, Victor M.	University of Pennsylvania

15:00-15:20 WeB07.4

Local Controllability of a Magnetized Purcell's Swimmer, pp. 1165-1170.

Moreau, Clément	Université Côte d'Azur, INRIA Sophia Antipolis

15:20-15:40	WeB07.5

Digital H-Inf Robust Control of Mechanical Systems with Implicit Observer, pp. 1171-1176.

Angelico, Bruno	Universidade de São Paulo
Brugnolli, Mateus Mussi	Universidade de São Paulo
das Neves, Gabriel	Universidade de São Paulo

15:40-16:00	WeB07.6

Acceleration Compensation for Gravity Sense Using an Accelerometer in an Aerodynamically Stable UAV, pp. 1177-1182.

Mitikiri, Yujendra	University of Florida
Mohseni, Kamran	University of Florida

WeB08	Méditerranée 3
Estimation and Control of PDE Systems II (Invited Session)	
Chair: Demetriou, Michael A.	Worcester Polytechnic Institute
Co-Chair: Fahroo, Fariba	AFOSR
Organizer: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Fahroo, Fariba	AFOSR
Organizer: Le Gorrec, Yann	Ensmm, Femto-St / As2m
14:00-14:20	WeB08.1

Design and Implementation of a Backstepping Controller for Regulating Temperature in 3D Printers Based on Selective Laser Sintering (I), pp. 1183-1188.

de Andrade, Gustavo Artur	Universidade Federal de Santa Catarina
Vazquez, Rafael	University of Seville
Pagano, Daniel Juan	Federal University of Santa Catarina
Mascheroni, Jose Maria	Alkimat Tecnologia Ltda

14:20-14:40	WeB08.2

Sensor Location for Parameter Estimation of Spatiotemporal Systems with Correlated Observations (I), pp. 1189-1194.

Ucinski, Dariusz	University of Zielona Gora
Patan, Maciej	University of Zielona Gora

14:40-15:00	WeB08.3

Laser Sintering Control for Metal Additive Manufacturing by PDE Backstepping (I), pp. 1195-1200.

Koga, Shumon	University of California, San Diego
Krstic, Miroslav	University of California, San Diego
Beaman, Joseph J.	University of Texas, Austin

15:00-15:20	WeB08.4

Sampled-Data Observer for 2D Navier-Stokes Equation (I), pp. 1201-1206.

Kang, Wen	University of Science and Technology Beijing
Fridman, Emilia	Tel-Aviv University
Zhuk, Sergiy	IBM

15:20-15:40	WeB08.5

Model-Based Networked Control of Spatially-Distributed Processes with Event-Triggered Parameter Re-Identification (I), pp. 1207-1212.

Zedan, Amr	University of California Davis
El-Farra, Nael H.	University of California, Davis

15:40-16:00	WeB08.6

Combined Sequential Mobile Sensing Agent Evacuation and State Reconstruction in Contaminated Spatial Fields (I), pp. 1213-1218.

Demetriou, Michael A.	Worcester Polytechnic Institute

WeB09	Méditerranée B12
Mean Field Games II (Regular Session)	
Chair: Hajek, Bruce	UIUC
Co-Chair: Huang, Minyi	Carleton University
14:00-14:20	WeB09.1

On Non-Unique Solutions in Mean Field Games, pp. 1219-1224.

Hajek, Bruce	UIUC
Livesay, Michael	University of Illinois

14:20-14:40	WeB09.2

Decentralized Adaptive Optimal Control for Massive Multi-Agent Systems Using Mean Field Game with Self-Organizing Neural Networks, pp. 1225-1230.

Zhou, Zejian	University of Nevada, Reno
Xu, Hao	University of Nevada, Reno

14:40-15:00	WeB09.3

Decentralized Adaptive Optimal Tracking Control for Massive Multi-Agent Systems: An Actor-Critic-Mass Algorithm, pp. 1231-1236.

Zhou, Zejian	University of Nevada, Reno
Xu, Hao	University of Nevada, Reno

15:00-15:20	WeB09.4

Mean Field Games with Poisson Jumps and Impulse Control: Long-Run Average Cost, pp. 1237-1242.

Zhou, Mengjie	Carleton University
Huang, Minyi	Carleton University

15:20-15:40	WeB09.5

Linearly-Solvable Mean-Field Approximation for Multi-Team Road Traffic Games, pp. 1243-1248.

Pedram, Ali Reza	University of Texas, Austin
Tanaka, Takashi	University of Texas, Austin

15:40-16:00	WeB09.6

A Mean Field Approach to Model Flows of Agents with Path Preferences Over a Network, pp. 1249-1254.

Bagagiolo, Fabio	University of Trento
Maggistro, Rosario	Università Ca' Foscari Venezia
Pesenti, Raffaele	University of Venice - Ca' Foscari

WeB10	Méditerranée C12
Orchestrating Movement of Smart Vehicles in Smart Cities (Invited Session)	
Chair: Malikopoulos, Andreas A.	University of Delaware
Co-Chair: Su, Rong	Nanyang Technological University
Organizer: Vahidi, Ardalan	Clemson University
Organizer: Su, Rong	Nanyang Technological University
14:00-14:20	WeB10.1

A Hybrid Traffic Light Control Strategy Based on Branching Ratio Estimation and Congestion Identification (I), pp. 1255-1260.

Zhang, Yicheng	Nanyang Technological University
Chen, Qixing	Nanyang Technological University

Su, Rong	Nanyang Technological University
Zhang, Yi	Nanyang Technological University
Sun, Chunyang	Nanyang Technological University

14:20-14:40 WeB10.2

Optimal Path Planning for Connected and Automated Vehicles at Urban Intersections (I), pp. 1261-1266.

Malikopoulos, Andreas A.	University of Delaware
Zhao, Liuhui	University of Delaware

14:40-15:00 WeB10.3

Distributed Ledger Technology for Smart Mobility: Variable Delay Models (I), pp. 1267-1272.

Cullen, Andrew	Imperial College London
Ferraro, Pietro	University College Dublin
King, Christopher	Northeastern University
Shorten, Robert	Imperial College London

15:00-15:20 WeB10.4

Stochastic Modeling and Optimal Control for Automated Overtaking (I), pp. 1273-1278.

Gao, Yulong	KTH Royal Institute of Technology
Jiang, Frank J.	University of California, Berkeley
Johansson, Karl H.	KTH Royal Institute of Technology
Xie, Lihua	Nanyang Tech. University

15:20-15:40 WeB10.5

Real-Time Ecological Velocity Planning for Plug-In Hybrid Vehicles with Partial Communication to Traffic Lights (I), pp. 1279-1285.

Bae, Sangjae	University of California, Berkeley
Choi, Yongkeun	University of California, Berkeley
Kim, Yeojun	University of California, Berkeley
Guanetti, Jacopo	University of California, Berkeley
Borrelli, Francesco	Unversity of California, Berkeley
Moura, Scott	University of California, Berkeley

15:40-16:00 WeB10.6

Reinforcement Learning Augmented Optimization for Smart Mobility (I), pp. 1286-1292.

Overko, Roman	University College Dublin
Ordóñez-Hurtado, Rodrigo H.	IBM Research - Ireland
Zhuk, Sergiy	IBM
Shorten, Robert	University College Dublin

WeB11 Galliéni 1

Markov Processes I (Regular Session)

Chair: Karlsson, Johan	KTH Royal Institute of Technology
Co-Chair: Ornik, Melkior	University of Illinois, Urbana Champaign

14:00-14:20 WeB11.1

Stochastic Primal-Dual Methods for Learning Mixture Policies in MDPs, pp. 1293-1300.

Badiei Khuzani, Masoud	Stanford University
Vasudevan, Varun	Stanford University
Ren, Hongyi	Stanford University
XXing, Lei	Stanford University

14:20-14:40 WeB11.2

Sensitivity Analysis for MDP Congestion Games, pp. 1301-1306.

Li, Sarah H.Q.	University of Washington
Calderone, Dan	University of Washington
Ratliff, Lillian J.	University of Washington
Acikmese, Behcet	University of Washington

14:40-15:00 WeB11.3

Scalable Filtering of Large Graph-Coupled Hidden Markov Models, pp. 1307-1314.

Haksar, Ravi N.	Stanford University
Lorenzetti, Joseph	Stanford University
Schwager, Mac	Stanford University

15:00-15:20 WeB11.4

Controlling Heterogeneous Stochastic Growth Processes on Lattices with Limited Resources, pp. 1315-1322.

Haksar, Ravi N.	Stanford University
Solowjow, Friedrich	Max Planck Institute for Intelligent Systems
Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Schwager, Mac	Stanford University

15:20-15:40 WeB11.5

Optimal Deceptive and Reference Policies for Supervisory Control, pp. 1323-1330.

Karabag, Mustafa O.	University of Texas, Austin
Ornik, Melkior	University of Illinois, Urbana Champaign
Topcu, Ufuk	University of Texas, Austin

15:40-16:00 WeB11.6

Estimating Ensemble Flows on a Hidden Markov Chain, pp. 1331-1338.

Haasler, Isabel	KTH Royal Institute of Technology
Ringh, Axel	The Hong Kong University of Science and Technology
Chen, Yongxin	Georgia Institute of Technology
Karlsson, Johan	KTH Royal Institute of Technology

WeB12 Galliéni 2

Quantum Information and Control (Regular Session)

Chair: Sarlette, Alain	INRIA Paris
Co-Chair: Rouchon, Pierre	Mines ParisTech

14:00-14:20 WeB12.1

Effect of Quantum Mechanical Global Phase Factor on Error versus Sensitivity Limitation in Quantum Routing, pp. 1339-1344.

Jonckheere, Edmond	University of Southern California
Schirmer, Sophie	Swansea University
Langbein, Frank C.	Cardiff University

14:20-14:40 WeB12.2

Active versus Passive Coherent Equalization of Passive Linear Quantum Systems, pp. 1345-1350.

Ugrinovskii, Valery	University of New South Wales
James, Matthew R.	Australian National University

14:40-15:00 WeB12.3

Optimal Waveform for Fast Entrainment of Weakly Forced Quantum Nonlinear Dissipative Oscillators, pp. 1351-1356.

Kato, Yuzuru	Tokyo Institute of Technology
Nakao, Hiroya	Tokyo Institute of Technology

15:00-15:20 WeB12.4

H1-Control of an Ensemble of Half-Spin Systems Replacing Rabi Pulses by Adiabatic Following, pp. 1357-1361.

Maciel Neto, Ulisses Alves	Amazônia Azul Technologies of Defense
Pereira da Silva, Paulo Sergio	University de Sao Paulo
Beauchard, Karine	CNRS, CMLS, Ecole Polytechnique
Rouchon, Pierre	Mines ParisTech

15:20-15:40 WeB12.5

A Palette of Approaches for Adiabatic Elimination in Bipartite Open Quantum Systems with Hamiltonian Dynamics on Target, pp. 1362-1368.

Forni, Paolo	Mines ParisTech & INRIA (QUANTIC)
Launay, Timothée	Mines Paristech
Sarlette, Alain	INRIA Paris
Rouchon, Pierre	Mines ParisTech

15:40-16:00 WeB12.6

Minimizing Decoherence on Target in Bipartite Open Quantum Systems, pp. 1369-1376.

Forni, Paolo	Mines ParisTech & INRIA (QUANTIC)
Sarlette, Alain	INRIA Paris

WeB13 Galliéni 4

Predictive Control for Linear Systems II (Regular Session)

Chair: Allgöwer, Frank	University of Stuttgart
Co-Chair: de Jager, Bram	Technische Universiteit Eindhoven

14:00-14:20 WeB13.1

Dual Adaptive MPC for Output Tracking of Linear Systems, pp. 1377-1382.

Soloperto, Raffaele	University of Stuttgart
Koehler, Johannes	University of Stuttgart
Muller, Matthias A.	Leibniz University Hannover
Allgöwer, Frank	University of Stuttgart

14:20-14:40 WeB13.2

Linear Robust Adaptive Model Predictive Control: Computational Complexity and Conservatism, pp. 1383-1388.

Koehler, Johannes	University of Stuttgart
Andina, Elisa	Universita Di Bologna - M.Sc. Student
Soloperto, Raffaele	Raffaele Soloperto
Muller, Matthias A.	Leibniz University Hannover
Allgöwer, Frank	University of Stuttgart

14:40-15:00 WeB13.3

Instant MPC for Linear Systems and Dissipativity-Based Stability Analysis, pp. 1389-1394.

Yoshida, Keisuke	Keio University
Inoue, Masaki	Keio University
Hatanaka, Takeshi	Tokyo Institute of Technology

15:00-15:20 WeB13.4

Parallelizing LQR Computation through Endpoint-Explicit Riccati Recursion, pp. 1395-1402.

Laine, Forrest, J.	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley

15:20-15:40 WeB13.5

Adversarial Model Predictive Control Via Second-Order Cone Programming, pp. 1403-1409.

Guthrie, James	Johns Hopkins University
Mallada, Enrique	Johns Hopkins University

15:40-16:00 WeB13.6

A System-Theoretic Approach to Construct a Banded Null Basis to Efficiently Solve MPC-Based QP Problems, pp. 1410-1415.

Yang, Jiaheng	Eindhoven University of Technology
Meijer, Tomas Jesse	Eindhoven University of Technology
Dolk, Victor Sebastiaan	Eindhoven University of Technology
de Jager, Bram	Eindhoven University of Technology
Heemels, W.P.M.H.	Eindhoven University of Technology

WeB14 Galliéni 7

Lyapunov Methods II (Regular Session)

Chair: Normand-Cyrot, Dorothée	CNRS
Co-Chair: Poonawala, Hasan A.	University of Kentucky

14:00-14:20 WeB14.1

Magnetic Force Modelling and Nonlinear Switched Control of an Electromagnetic Actuator, pp. 1416-1421.

Deschaux, Flavien	LAAS CNRS
Gouaisbaut, Frederic	University of Toulouse, LAAS CNRS
Ariba, Yassine	Icam

14:20-14:40 WeB14.2

Control-Lyapunov and Control-Barrier Functions Based Quadratic Program for Spatio-Temporal Specifications, pp. 1422-1429.

Garg, Kunal	University of Michigan-Ann Arbor
Panagou, Dimitra	University of Michigan, Ann Arbor

14:40-15:00 WeB14.3

Discrete Port-Controlled Hamiltonian Dynamics and Average Passivation, pp. 1430-1435.

Moreschini, Alessio	Sapienza University of Rome
Mattioni, Mattia	University of Roma La Sapienza
Monaco, Salvatore	University of Roma La Sapienza
Normand-Cyrot, Dorothée	CNRS

15:00-15:20 WeB14.4

Switched Motorized and Functional Electrical Stimulation Cycling Controllers for Power Tracking, pp. 1436-1441.

Chang, Chen-Hao	Syracuse University
Duenas, Victor H	Syracuse University

15:20-15:40 WeB14.5

Stability Analysis Via Refinement of Piece-Wise Linear Lyapunov Functions, pp. 1442-1447.

Poonawala, Hasan A.	University of Kentucky

15:40-16:00 WeB14.6

A Control Lyapunov Perspective on Episodic Learning Via

Projection to State Stability, pp. 1448-1455.

Taylor, Andrew	California Institute of Technology
Dorobantu, Victor	California Institute of Technology
Krishnamoorthy, Meera	California Institute of Technology
Le, Hoang M.	California Institute of Technology
Yue, Yisong	California Institute of Technology
Ames, Aaron D.	California Institute of Technology

WeB15 Rhodes GH

Optimality Conditions for Control Problems I (Invited Session)

Chair: Frankowska, Helene	CNRS and Sorbonne University, Campus Pierre Et Marie Curie
Co-Chair: Chittaro, Francesca	Université de Toulon
Organizer: Chittaro, Francesca	Université de Toulon
Organizer: Frankowska, Helene	CNRS and Sorbonne University, Campus Pierre Et Marie Curie
Organizer: Poggiolini, Laura	University of Firenze

14:00-14:20 WeB15.1

On Second-Order Necessary Conditions in Optimal Control of Problems with Mixed Final Point Constraints (I), pp. 1456-1461.

Frankowska, Helene	CNRS and Sorbonne University, Campus Pierre Et Marie Curie

14:20-14:40 WeB15.2

Constrained Bang-Bang-Singular Extremals (I), pp. 1462-1467.

Poggiolini, Laura	University of Firenze
Stefani, Gianna	University of Firenze

14:40-15:00 WeB15.3

Some Results on Second Order Controllability Conditions (I), pp. 1468-1473.

Soravia, Pierpaolo	University of Padova

15:00-15:20 WeB15.4

Necessary Conditions Involving Lie Brackets for Impulsive Optimal Control Problems (I), pp. 1474-1479.

Motta, Monica	University of Padua, Italy
Aronna, María Soledad	Fundação Getulio Vargas
Rampazzo, Franco	University of Padova

15:20-15:40 WeB15.5

Second Order Conditions for a Control Problem with Discontinuous Cost (I), pp. 1480-1485.

Bayen, Térence	Université de Montpellier
Pfeiffer, Laurent	Graz University

15:40-16:00 WeB15.6

Iterative Method Using the Generalized Hopf Formula: Avoiding Spatial Discretization for Computing Solutions of Hamilton-Jacobi Equations for Nonlinear Systems, pp. 1486-1493.

Lee, Donggun	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley

WeB16 Rhodes AB

Optimization II (Regular Session)

Chair: Nedich, Angelia	Arizona State University
Co-Chair: Karlsson, Niklas	Oath

14:00-14:20 WeB16.1

A Geometric Phasor Extremum Seeking Control Approach with Measured Constraints, pp. 1494-1500.

Atta, Khalid	Luleå University of Technology
Guay, Martin	Queens University
Lucchese, Riccardo	LTU Luleå University of Technology

14:20-14:40 WeB16.2

Acceleration in First Order Quasi-Strongly Convex Optimization by ODE Discretization, pp. 1501-1506.

Zhang, Jingzhao	MIT
Sra, Suvrit	MIT
Jadbabaie, Ali	MIT

14:40-15:00 WeB16.3

Random Minibatch Projection Algorithms for Convex Feasibility Problems, pp. 1507-1512.

Nedich, Angelia	Arizona State University
Necoara, Ion	University Politehnica Bucharest

15:00-15:20 WeB16.4

Adaptive Optimization and Control in Online Advertising, pp. 1513-1518.

Karlsson, Niklas	Verizon Media

15:20-15:40 WeB16.5

Nested Distributed Gradient Methods with Adaptive Quantized Communication, pp. 1519-1525.

Berahas, Albert S.	Lehigh University
Iakovidou, Charikleia	Northwestern University
Wei, Ermin	Northwestern Univeristy

15:40-16:00 WeB16.6

Distributionally Robust Portfolio Optimization, pp. 1526-1531.

Bardakci, Ibrahim Ekrem	Pennsylvania State University
Lagoa, Constantino M.	Pennsylvania State University

WeB17 Rhodes CD

Switched Systems II (Regular Session)

Chair: Sznaier, Mario	Northeastern University
Co-Chair: Ozay, Necmiye	University of Michigan

14:00-14:20 WeB17.1

Maximum-A-Posteriori Estimation of Jump Box-Jenkins Models, pp. 1532-1537.

Breschi, Valentina	Politecnico di Milano
Piga, Dario	University of Applied Sciences and Arts of Southern Switzerland
Bemporad, Alberto	IMT Institute for Advanced Studies Lucca

14:20-14:40 WeB17.2

Generation of Optimal Walking-Like Motions Using Dynamic Models with Switches, Switch Costs, and State Jumps, pp. 1538-1543.

Kirches, Christian	Technical University of Braunschweig
Kostina, Professor Dr. Ekaterina A.	Heidelberg University
Meyer, Andreas	IWR Heidelberg
Schlöder, Matthias	Heidelberg University

14:40-15:00 WeB17.3

Simultaneous Mode, Input and State Set-Valued Observers

with Applications to Resilient Estimation against Sparse Attacks, pp. 1544-1550.

Khajenejad, Mohammad	Arizona State University
Yong, Sze Zheng	Arizona State University

15:00-15:20 WeB17.4

An Exponential Stability Result for a Class of Linear Switched Systems and Its Application, pp. 1551-1556.

Liu, Tao	Shenzhen Research Institute, the Chinese University of Hong Kong
Lee, Ti-Chung	University of Science and Technology
Huang, Jie	The Chinese University of Hong Kong

15:20-15:40 WeB17.5

Safety Control with Preview Automaton, pp. 1557-1564.

Liu, Zexiang	University of Michigan
Ozay, Necmiye	University of Michigan

15:40-16:00 WeB17.6

Global Exponential Stabilization of Language Constrained Switched Linear Discrete-Time System Based on the S-Procedure Approach, pp. 1565-1570.

Song, Yang	Shanghai University
Jin, Yunyun	Shanghai University
Wang, Yan	Jiangnan University
Yang, Taicheng	University of Sussex

WeB18 Rhodes EF

Observers for Nonlinear Systems II (Regular Session)

Chair: Ferrara, Antonella	University of Pavia
Co-Chair: Rapaport, Alain	U. Montpellier, INRA, Montpellier SupAgro

14:00-14:20 WeB18.1

A Multi Observers Approach When Observability Index Is Higher Than the State Dimension - a Case Study -, pp. 1571-1576.

Haidar, Ihab	ENSEA
Barbot, Jean Pierre	ENSEA
Rapaport, Alain	U. Montpellier, INRA, Montpellier SupAgro

14:20-14:40 WeB18.2

Conservatism Reduction for Nonlinear Takagi-Sugeno Observer : Interconnected System Approach, pp. 1577-1582.

Arioui, Hichem	Evry Val d'Essonne University
Ichalal, Dalil	Université d'Evry Val d'Essonne, IBISC Lab
Nehaoua, lamri	Evry Univeristy
Mammar, Said	Université d'Evry IBISC

14:40-15:00 WeB18.3

Higher Order Sliding Mode Observers in Power Grids with Traditional and Renewable Sources, pp. 1583-1588.

Rinaldi, Gianmario	University of Pavia
Menon, Prathyush P	University of Exeter
Edwards, Christopher	University of Exeter
Ferrara, Antonella	University of Pavia

15:00-15:20 WeB18.4

Design of Robust Lyapunov-Based Observers for Nonlinear Systems with Sum-Of-Squares Programming, pp. 1589-1594.

Pylorof, Dimitrios	US Army Research Laboratory
Bakolas, Efstathios	University of Texas, Austin
Chan, Kevin	US Army Research Laboratory

15:20-15:40 WeB18.5

State Observation of a Specific Class of Unknown Nonlinear SISO Systems Using Linear Kalman Filtering, pp. 1595-1600.

Amokrane, Fawzia	Institut FEMTO-ST
Piat, Emmanuel	Institut FEMTO-ST
Abadie, Joël	Institut FEMTO-ST
Drouot, Adrien	Institut FEMTO-ST
Escareño, Juan	ENSIL-ENSCI @ University of Limoges

15:40-16:00 WeB18.6

Structure and Velocity Estimation of a Moving Object Via Synthetic Persistence by a Network of Stationary Cameras, pp. 1601-1606.

Bell, Zachary I.	University of Florida
Harris, Christian	University of Florida
Sun, Runhan	University of Florida
Dixon, Warren E.	University of Florida

WeB19 Galliéni 5

Advances in Nonlinear Filtering and Stochastic Control with Partial Information II (Invited Session)

Chair: Yuksel, Serdar	Queen's University
Co-Chair: Mehta, Prashant G.	University of Illinois, Urbana Champaign
Organizer: Mehta, Prashant G.	University of Illinois, Urbana Champaign
Organizer: Yuksel, Serdar	Queen's University

14:00-14:20 WeB19.1

What Is the Lagrangian for Nonlinear Filtering? (I), pp. 1607-1614.

Kim, Jin Won	University of Illinois, Urbana Champaign
Mehta, Prashant G.	University of Illinois, Urbana Champaign
Meyn, Sean P.	University of Florida

14:20-14:40 WeB19.2

Belief Estimation by Agents in Major Minor LQG Mean Field Games (I), pp. 1615-1622.

Firoozi, Dena	McGill University
Caines, Peter E.	McGill University

14:40-15:00 WeB19.3

Observability and Filter Stability for Partially Observed Markov Processes (I), pp. 1623-1628.

McDonald, Curtis, James	Queen's University
Yuksel, Serdar	Queen's University

15:00-15:20 WeB19.4

Approximate Information State for Partially Observed Systems (I), pp. 1629-1636.

Subramanian, Jayakumar	McGill University
Mahajan, Aditya	McGill University

15:20-15:40 WeB19.5

Feedback Particle Filter with Correlated Noises, pp. 1637-1643.

Luo, Xue	Beihang University

Miao, Huimin	Beihang University

15:40-16:00 WeB19.6

Stability of Optimal Filter Higher-Order Derivatives, pp. 1644-1649.

Tadic, Vladislav	University of Bristol
Doucet, Arnaud	University of Oxford

WeB20 Rhodes 10

Event-Triggered Control Based on Lyapunov Methods (Invited Session)

Chair: Noroozi, Navid	Otto Von Guericke Universitat Magdeburg
Co-Chair: Heemels, W.P.M.H.	Eindhoven University of Technology
Organizer: Heemels, W.P.M.H.	Eindhoven University of Technology
Organizer: Hirche, Sandra	Technische Universität München
Organizer: Johansson, Karl H.	KTH Royal Institute of Technology

14:00-14:20 WeB20.1

State-Feedback Event-Holding Control for Nonlinear Systems (I), pp. 1650-1655.

Wang, Wei	University of Melbourne
Nesic, Dragan	University of Melbourne
Postoyan, Romain	CNRS, CRAN, Université de Lorraine
Shames, Iman	University of Melbroune
Heemels, W.P.M.H.	Eindhoven University of Technology

14:20-14:40 WeB20.2

Periodic Event-Triggered Control with a Relaxed Triggering Condition (I), pp. 1656-1661.

Szymanek, Aleksandra	Delft University of Technology
de Albuquerque Gleizer, Gabriel	Delft University of Technology
Mazo Jr., Manuel	Delft University of Technology

14:40-15:00 WeB20.3

Inter-Event Times Analysis for Planar Linear Event-Triggered Controlled Systems (I), pp. 1662-1667.

Postoyan, Romain	CNRS, CRAN, Université de Lorraine
Sanfelice, Ricardo G.	University of California, Santa Cruz
Heemels, W.P.M.H.	Eindhoven University of Technology

15:00-15:20 WeB20.4

Distributed Event-Based Control and Stability of Interconnected Systems, pp. 1668-1673.

Theodosis, Dionysios	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

15:20-15:40 WeB20.5

On Integral Input-To-State Stability of Event-Triggered Control Systems, pp. 1674-1679.

Mousavi, Seyed Hossein	Ryerson University
Noroozi, Navid	Otto Von Guericke Universitat Magdeburg
Geiselhart, Roman	University of Ulm
Koegel, Markus	Otto Von Guericke Universitat Magdeburg
Findeisen, Rolf	Otto Von Guericke Universitat Magdeburg

15:40-16:00 WeB20.6

Nonlinear Dynamic Periodic Event-Triggered Control with Robustness to Packet Loss Based on Non-Monotonic Lyapunov Functions (I), pp. 1680-1685.

Hertneck, Michael	University of Stuttgart
Linsenmayer, Steffen	University of Stuttgart
Allgöwer, Frank	University of Stuttgart

WeB21 Risso 6

Network Analysis and Control II (Regular Session)

Chair: Monshizadeh, Nima	University of Groningen
Co-Chair: Wang, Hanlei	Beijing Institute of Control Engineering

14:00-14:20 WeB21.1

Network Modification Using a Novel Gramian-Based Edge Centrality, pp. 1686-1691.

Chanekar, Prasad Vilas	University of California, San Diego
Nozari, Erfan	University of California, San Diego
Cortes, Jorge	University of California, San Diego

14:20-14:40 WeB21.2

Design of Sustainable Resource Consumption Networks, pp. 1692-1697.

Ruf, Sebastian F.	Northeastern University
Hale, Matthew	University of Florida
Manzoor, Talha	Namal College
Muhammad, Abubakr	Lahore University of Management Sciences

14:40-15:00 WeB21.3

Task-Space Bilateral Control of Teleoperators with Time-Varying Delay, pp. 1698-1703.

Wang, Hanlei	Beijing Institute of Control Engineering

15:00-15:20 WeB21.4

A Continuous Threshold Model of Cascade Dynamics, pp. 1704-1709.

Zhong, Yaofeng Desmond	Princeton University
Leonard, Naomi Ehrich	Princeton University

15:20-15:40 WeB21.5

Plausible Deniability As a Notion of Privacy, pp. 1710-1715.

Monshizadeh, Nima	University of Groningen
Tabuada, Paulo	University of California, Los Angeles

15:40-16:00 WeB21.6

On Node Controllability and Observability in Complex Dynamical Networks, pp. 1716-1721.

Lo Iudice, Francesco	Univeristy of Napoli Federico II
Sorrentino, Francesco	University of New Mexico
Garofalo, Franco	University of Napoli

WeB22 Risso 7

Identification II (Regular Session)

Chair: Usai, Elio	University of Cagliari
Co-Chair: Smith, Roy S.	ETH Zurich

14:00-14:20 WeB22.1

Adaptive Parameter Estimation for Infinite-Dimensional LTI Systems with Finite-Time Convergence, pp. 1722-1727.

Pisano, Alessandro	University of Cagliari
Kapetina, Mirna N.	University of Novi Sad
Rapaic, Milan R.	University of Novi Sad
Usai, Elio	University of Cagliari

14:20-14:40 WeB22.2

Identification of Low-Order Models Using Rational Orthonormal Basis Functions, pp. 1728-1733.

Manngård, Mikael	Åbo Akademi University
Toivonen, Hannu T.	Abo Akademi University

14:40-15:00 WeB22.3

Data Informativity for the Identification of MISO FIR Systems with Filtered White Noise Excitation, pp. 1734-1739.

Colin, Kévin	Ecole Centrale de Lyon
Bombois, Xavier	Ecole Centrale de Lyon
Bako, Laurent	Ecole Centrale de Lyon
Morelli, Federico	Ecole Centrale de Lyon

15:00-15:20 WeB22.4

Kernel-Based Identification of Positive Systems, pp. 1740-1745.

Khosravi, Mohammad	ETH Zurich, Automatic Control Lab
Smith, Roy S.	ETH Zurich

15:20-15:40 WeB22.5

Efficient Identification of Linear Evolutions in Nonlinear Vector Fields: Koopman Invariant Subspaces, pp. 1746-1751.

Haseli, Masih	University of California, San Diego
Cortes, Jorge	University of California, San Diego

15:40-16:00 WeB22.6

Persistent Excitation Condition for MIMO Volterra System Identification with Gaussian Distributed Input Signals, pp. 1752-1757.

Hu, Yangsheng	University of California, San Diego
Tan, Li	University of California, San Diego
de Callafon, Raymond A.	University of California, San Diego

WeB23 Risso 8

Model Learning for Control (Invited Session)

Chair: Zeilinger, Melanie N.	ETH Zurich
Co-Chair: Muller, Matthias A.	Leibniz University Hannover
Organizer: Schoellig, Angela P	University of Toronto
Organizer: Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Organizer: Zeilinger, Melanie N.	ETH Zurich
Organizer: Muller, Matthias A.	Leibniz University Hannover

14:00-14:20 WeB23.1

An Efficient Reachability-Based Framework for Provably Safe Autonomous Navigation in Unknown Environments (I), pp. 1758-1765.

Bajcsy, Andrea	University of California, Berkeley
Bansal, Somil	University of California, Berkeley
Bronstein, Eli	University of California, Berkeley
Tolani, Varun	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley

14:20-14:40 WeB23.2

Local Asymptotic Stability Analysis and Region of Attraction Estimation with Gaussian Processes, pp. 1766-1771.

Lederer, Armin	Technische Universität München
Hirche, Sandra	Technische Universität München

14:40-15:00 WeB23.3

Learning for Control: A Bayesian Scenario Approach (I), pp. 1772-1777.

Garatti, Simone	Politecnico di Milano
Campi, M. C.	University of Brescia

15:00-15:20 WeB23.4

One-Shot Verification of Dissipativity Properties from Input-Output Data, pp. 1778-1783.

Romer, Anne	University of Stuttgart
Berberich, Julian	University of Stuttgart
Koehler, Johannes	University of Stuttgart
Allgöwer, Frank	University of Stuttgart

15:20-15:40 WeB23.5

Active Training Trajectory Generation for Inverse Dynamics Model Learning with Deep Neural Networks (I), pp. 1784-1790.

Zhou, Siqi	University of Toronto
Schoellig, Angela P	University of Toronto

15:40-16:00 WeB23.6

Hierarchical Event-Triggered Learning for Cyclically Excited Systems with Application to Wireless Sensor Networks, pp. 1791-1796.

Beuchert, Jonas	Technische Universität Berlin
Solowjow, Friedrich	Max Planck Institute for Intelligent Systems
Raisch, Joerg	Technische Universität Berlin
Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Seel, Thomas	Technische Universität Berlin

WeB24 Hermès

Learning II (Regular Session)

Chair: Tabuada, Paulo	University of California, Los Angeles
Co-Chair: Pasqualetti, Fabio	University of California, Riverside

14:00-14:20 WeB24.1

A Dynamical Biomolecular Neural Network, pp. 1797-1802.

Moorman, Andrew	Massachusetts Institute of Technology
Cuba Samaniego, Christian	University of California, Riverside
Maley, Carlo	Arizona State University
Weiss, Ron	MIT

14:20-14:40 WeB24.2

Data-Driven Control for SISO Feedback Linearizable Systems with Unknown Control Gain, pp. 1803-1808.

Tabuada, Paulo	University of California, Los Angeles
Fraile, Lucas	University of California, Los Angeles

14:40-15:00 WeB24.3

Forgetting Factor Kalman Filter with Dependent Noise

Processes, pp. 1809-1815.

Dokoupil, Jakub	CEITEC, Brno University of Technology
Vaclavek, Pavel	Brno University of Technology

15:00-15:20 WeB24.4

Spectral Characterization of the Multi-Seasonal Component of the Italian Electric Load: A LASSO-FFT Approach, pp. 1816-1821.

Incremona, Alessandro	University of Pavia
De Nicolao, Giuseppe	University of Pavia

15:20-15:40 WeB24.5

Distributed Robust Statistical Learning: Byzantine Mirror Descent, pp. 1822-1827.

Ding, Dongsheng	University of Southern California
Wei, Xiaohan	University of Southern California
Jovanovic, Mihailo R.	University of Southern California

15:40-16:00 WeB24.6

A Fundamental Performance Limitation for Adversarial Classification, pp. 1828-1833.

Al Makdah, Abed AlRahman	University of California Riverside
Katewa, Vaibhav	University of California Riverside
Pasqualetti, Fabio	University of California, Riverside

WeB25 Athéna

Multi-Agent Systems II (Regular Session)

Chair: Tron, Roberto	Boston University
Co-Chair: Poovendran, Radha	University of Washington

14:00-14:20 WeB25.1

Distributed 3-D Bearing-Only Orientation Localization, pp. 1834-1841.

Leonardos, Spyridon	University of Pennsylvania
Daniilidis, Kostas	University of Pennsylvania
Tron, Roberto	Boston University

14:20-14:40 WeB25.2

Potential-Based Advice for Stochastic Policy Learning, pp. 1842-1849.

Xiao, Baicen	University of Washington
Ramasubramanian, Bhaskar	University of Washington
Clark, Andrew	Worcester Polytechnic Institute
Hajishirzi, Hannaneh	University of Washington
Bushnell, Linda	University of Washington
Poovendran, Radha	University of Washington

14:40-15:00 WeB25.3

Distributed Algorithm for Solving the Bottleneck Assignment Problem, pp. 1850-1855.

Khoo, Mitchell	University of Melbourne
Wood, Tony A.	University of Melbourne
Manzie, Chris	University of Melbourne
Shames, Iman	University of Melbroune

15:00-15:20 WeB25.4

PageRank Computation Via Web Aggregation in Distributed Randomized Algorithms, pp. 1856-1861.

Suzuki, Atsushi	Tokyo Institute of Technology
Ishii, Hideaki	Tokyo Institute of Technology

15:20-15:40 WeB25.5

Formation Control for Multiple Agents with Local Measurements: Continuous-Time and Sampled-Data-Based Cases, pp. 1862-1867.

Wang, Chen	Peking University
Li, Shuai	Peking University
Xia, Weiguo	Dalian University of Technology
Sun, Jinan	Peking University
Xie, Guangming	Peking University

15:40-16:00 WeB25.6

Global Uniform Asymptotic Stability of a Generalized Adaptive Bellman-Ford Algorithm, pp. 1868-1873.

Mo, Yuanqiu	University of Iowa
Dasgupta, Soura	University of Iowa
Beal, Jacob	Raytheon BBN Technologies

WeC01 Méditerranée 1

Biological Rhythms and Oscillators (Invited Session)

Chair: Giordano, Giulia	Delft University of Technology
Co-Chair: Singh, Abhyudai	University of Delaware
Organizer: Giordano, Giulia	Delft University of Technology
Organizer: Singh, Abhyudai	University of Delaware

16:30-16:50 WeC01.1

Semidefinite Programming for Turing Instability Analysis in Molecular Communication Networks (I), pp. 1874-1880.

Hori, Yutaka	Keio University
Miyazako, Hiroki	University of Tokyo

16:50-17:10 WeC01.2

Compensating for Sensor Error in the Model Predictive Control of Circadian Clock Phase, pp. 1881-1886.

Brown, Lindsey S.	Harvard John A. Paulson School of Engineering and Applied Scienc
Klerman, Elizabeth B.	Harvard Medical School, Brigham and Women's Hospital
Doyle III, Francis J.	Harvard University

17:10-17:30 WeC01.3

Periodic Switching in a Recombinase-Based Molecular Circuit, pp. 1887-1892.

Cuba Samaniego, Christian	University of California, Riverside
Giordano, Giulia	Delft University of Technology
Franco, Elisa	University of California, Los Angeles

17:30-17:50 WeC01.4

Nonlinear Dynamics of a Positive Hybrid Observer for the Impulsive Goodwin's Oscillator: A Design Study (I), pp. 1893-1898.

Yamalova, Diana	Uppsala University
Medvedev, Alexander V.	Uppsala University
Zhusubaliyev, Zhanybai	South West State University (Kursk State Technical University)
Proskurnikov, Anton V.	Politecnico Di Torino

17:50-18:10 WeC01.5

Rapid Circadian Entrainment in Models of Circadian Genes Regulation, pp. 1899-1906.

Yin, Jiawei	Rensselaer Polytechnic Institute
Julius, Agung	Rensselaer Polytechnic Institute
Wen, John T.	Rensselaer Polytechnic Institute

18:10-18:30 WeC01.6

Global Exponential Stability of Delayed Coupled Repressilators in Artificial Oscillatory Networks, pp. 1907-1912.

Liu, Zexing — Heilongjiang University
Zhang, Xian — Heilongjiang University
Wang, Xin — Heilongjiang University

WeC02 Méditerranée 2

Power Systems Applications (Regular Session)

Chair: Ilic, Marija — Massachusetts Institute of Technology
Co-Chair: Curioni, Gabriele — Fraunhofer IWES

16:30-16:50 WeC02.1

A PID Controller for Direct Load Control of Thermostatically Controlled Appliances, pp. 1913-1918.

yazdkhasti, pegah — University of New Brunswick
Diduch, C.P. — University of New Brunswick

16:50-17:10 WeC02.2

Distributed State Estimation for AC Power Systems Using Gauss-Newton ALADIN, pp. 1919-1924.

Du, Xu — ShanghaiTech University
Engelmann, Alexander — Karlsruhe Institute of Technology
Jiang, Yuning — ShanghaiTech University
Faulwasser, Timm — Karlsruhe Institute of Technology
Houska, Boris — ShanghaiTech University

17:10-17:30 WeC02.3

Nested Reinforcement Learning Based Control for Protective Relays in Power Distribution Systems, pp. 1925-1930.

Wu, Dongqi — Texas A&M University
Zheng, Xiangtian — Texas A&M University
Kalathil, Dileep — Texas A&M University
Xie, Le — Texas A&M University

17:30-17:50 WeC02.4

Robust Drive-Train Test Bench Control Framework Via Hardware-In-The-Loop with Mechanical Inertia Emulation Capability, pp. 1931-1936.

Curioni, Gabriele — Fraunhofer IWES

17:50-18:10 WeC02.5

Modeling and Distributed Control of Microgrids: A Negative Feedback Approach, pp. 1937-1944.

Miao, Xia — Massachusetts Institute of Technology
Ilic, Marija — Massachusetts Institute of Technology

18:10-18:30 WeC02.6

Alternative Control Approach for the Offshore Grid of Wind Power Plants, pp. 1945-1950.

Díaz Sanahuja, Carlos — Universitat Jaume I
Peñarrocha, Ignacio — Universitat Jaume I
Vidal-Albalate, Ricardo — Universitat Jaume I

WeC03 Méditerranée 5

Adaptive Control III (Regular Session)

Chair: Chen, Kaiwen — Imperial College London
Co-Chair: Michailidis, George — University of Florida

16:30-16:50 WeC03.1

Adaptive Impedance Control with Setpoint Force Tracking for Unknown Soft Environment Interactions, pp. 1951-1958.

Stephens, Trevor — University of Minnesota
Awasthi, Chaitanya — University of Minnesota
Kowalewski, Timothy — University of Minnesota

16:50-17:10 WeC03.2

Reinforcement Learning with Sparse Bellman Error Extrapolation for Infinite-Horizon Approximate Optimal Regulation, pp. 1959-1964.

Greene, Max L. — University of Florida
Deptula, Patryk — University of Florida
Nivison, Scott — Air Force Research Laboratory
Dixon, Warren E. — University of Florida

17:10-17:30 WeC03.3

Output-Feedback I&I Adaptive Control for Linear Systems with Time-Varying Parameters, pp. 1965-1970.

Chen, Kaiwen — Imperial College London
Astolfi, Alessandro — Imperial College & University of Rome

17:30-17:50 WeC03.4

Disturbance Rejection Via Affine Adaptive State Feedback Control, pp. 1971-1976.

Sofrony, Jorge Ivan — National University of Colombia
Herrera, David — National University of Colombia

17:50-18:10 WeC03.5

On Applications of Bootstrap in Continuous Space Reinforcement Learning, pp. 1977-1984.

Shirani Faradonbeh, Mohamad Kazem — University of Michigan
Tewari, Ambuj — None
Michailidis, George — University of Florida

18:10-18:30 WeC03.6

Approximate Optimal Adaptive Control of Partially Unknown Linear Continuous-Time Systems with State Delay, pp. 1985-1990.

Moghadam, Rohollah — Missouri University of Science and Technology
Jagannathan, Sarangapani — Missouri University of Science & Tech

WeC04 Méditerranée A2

Discrete Event Systems (Regular Session)

Chair: Coogan, Samuel — Georgia Institute of Technology
Co-Chair: van Schuppen, Jan H. — Van Schuppen Control Research

16:30-16:50 WeC04.1

Context-Free Forbidden Path Control of Net Condition/Event Systems, pp. 1991-1996.

ZHANG, JIAFENG — Xidian University
Luo, Guangchao — Xidian University
Li, Zhiwu — Xidian University
Frey, Georg — Saarland University

16:50-17:10 WeC04.2

Monitor-Based Runtime Assurance for Temporal Logic Specifications, pp. 1997-2002.

Abate, Matthew	Georgia Institute of Technology
Feron, Eric	Georgia Institute of Technology
Coogan, Samuel	Georgia Institute of Technology

17:10-17:30 WeC04.3

Critical Observability of Petri Nets with Unknown Initial Marking, pp. 2003-2008.

Cong, Xuya	Xidian University
Fanti, Maria Pia	Politecnico di Bari
Mangini, Agostino Marcello	Politecnico di Bari
Li, Zhiwu	Xidian University

17:30-17:50 WeC04.4

A Unifying Approach to Maximal Permissiveness in Modular Control of Discrete-Event Systems, pp. 2009-2014.

Komenda, Jan	Czech Academy of Sciences
Lin, Feng	Wayne State Univ
van Schuppen, Jan H.	Van Schuppen Control Research

17:50-18:10 WeC04.5

Attack-Resilient Supervisory Control with Intermittently Secure Communication, pp. 2015-2020.

Wang, Yu	Duke University
Pajic, Miroslav	Duke University

18:10-18:30 WeC04.6

Discovering of the Unobservable Behaviour of an Interpreted Petri Net Model, pp. 2021-2026.

Basile, Francesco	University of Salerno
Faraut, Gregory	ENS Paris-Saclay
Lesage, Jean-jacques	Ens Cachan
Ferrara, Luigi	University of Salerno

WeC05 Méditerranée C4

Constrained Control (Regular Session)

Chair: Garone, Emanuele	Université Libre de Bruxelles
Co-Chair: Serrani, Andrea	The Ohio State University

16:30-16:50 WeC05.1

Two Constructive Solutions to Orbital Stabilization of Nonlinear Systems Via Passivity-Based Control, pp. 2027-2032.

Yi, Bowen	Shanghai Jiao Tong University
Ortega, Romeo	LSS-SUPELEC
Wu, Dongjun	Harbin Institute of Technology
Zhang, Weidong	Shanghai Jiaotong Univ

16:50-17:10 WeC05.2

Constrained Control of Linear Discrete-Time Systems under Quartic Performance Criterion, pp. 2033-2038.

Liberati, Francesco	Sapienza University of Rome
Garone, Emanuele	Université Libre de Bruxelles

17:10-17:30 WeC05.3

Constrained-Inversion MRAC: An Approach Combining Hard Constraints and Adaptation in Uncertain Nonlinear Systems, pp. 2039-2045.

Bosso, Alessandro	University of Bologna
Serrani, Andrea	The Ohio State University
Conficoni, Christian	Alma Mater Studiorum, University of Bologna
Tilli, Andrea	University of Bologna

17:30-17:50 WeC05.4

A Scalable Controlled Set Invariance Framework with Practical Safety Guarantees, pp. 2046-2053.

Gurriet, Thomas	California Institute of Technology
Mote, Mark	Georgia Institute of Technology
Singletary, Andrew	Georgia Institute of Technology
Feron, Eric	Georgia Institute of Technology
Ames, Aaron D.	California Institute of Technology

17:50-18:10 WeC05.5

Compositional Synthesis of Decentralized Robust Set-Invariance Controllers for Large-Scale Linear Systems, pp. 2054-2059.

Ghasemi, Kasra	Boston University
Sadraddini, Sadra	Massachusetts Institute of Technology
Belta, Calin	Boston University

18:10-18:30 WeC05.6

From Obstacle-Based Space Partitioning to Corridors and Path Planning. a Convex Lifting Approach, pp. 2060-2065.

Ioan, Daniel	L2S-University Paris-Sud-CentraleSupelec-CNR, Université Paris Sacla
Olaru, Sorin	CentraleSupélec - INRIA Saclay
Prodan, Ionela	Grenoble Institute of Technology (Grenoble INP) - Esisar
Stoican, Florin	UPB (Politehnica UNiversity of Bucharest)
Niculescu, Silviu-Iulian	CNRS-Supelec

WeC06 Méditerranée A3

Control of Networks II (Regular Session)

Chair: Baggio, Giacomo	University of California, Riverside
Co-Chair: Astolfi, Daniele	Université Claude Bernard Lyon 1

16:30-16:50 WeC06.1

Optimizing Average Controllability of Networked Systems, pp. 2066-2071.

Srighakollapu, Manikya Valli	Indian Institute of Technology, Madras
Kalaimani, Rachel Kalpana	Indian Institute of Technology, Madras
Pasumarthy, Ramkrishna	Indian Institute of Technology, Madras

16:50-17:10 WeC06.2

Data-Driven Minimum-Energy Controls for Linear Systems, pp. 2072-2077.

Baggio, Giacomo	University of California, Riverside
Katewa, Vaibhav	University of California, Riverside
Pasqualetti, Fabio	University of California, Riverside

17:10-17:30 WeC06.3

Synchronization in Networks of Identical Nonlinear Systems Via Dynamic Dead Zones, pp. 2078-2083.

Casadei, Giacomo	Ecole Centrale Lyon
Astolfi, Daniele	Université Claude Bernard Lyon 1
Alessandri, Angelo	University of Genova
Zaccarian, Luca	LAAS-CNRS and University of Trento

17:30-17:50 WeC06.4

Cooperative Aerial Load Transportation Via Sampled Communication, pp. 2084-2089.

Rossi, Enrica	University of Padova
Tognon, Marco	LAAS-CNRS
Carli, Ruggero	University of Padova
Schenato, Luca	University of Padova
Cortés, Juan	LAAS-CNRS
Franchi, Antonio	LAAS-CNRS

17:50-18:10 WeC06.5

Decentralized Gain Adaptation for Optimal Pinning Controllability of Complex Networks, pp. 2090-2095.

Di Meglio, Anna	University of Napoli Federico II
De Lellis, Pietro	University of Napoli Federico II
di Bernardo, Mario	University of Napoli Federico II

18:10-18:30 WeC06.6

Time Scale Design for Network Resilience, pp. 2096-2101.

Foight, Dillon	University of Washington
Hudoba de Badyn, Mathias	University of Washington
Mesbahi, Mehran	University of Washington

WeC07 Méditerranée A1

Robotics III (Regular Session)

Chair: Ghorbel, Fathi H.	Rice Univ
Co-Chair: Chen, Zheng	University of Houston

16:30-16:50 WeC07.1

Vector Autoregressive POMDP Model Learning and Planning for Human-Robot Collaboration, pp. 2102-2107.

Zheng, Wei	University of Notre Dame
Lin, Hai	University of Notre Dame

16:50-17:10 WeC07.2

On the Design of Cyber-Physical Control System for a Smart Pedelec (Ebike), pp. 2108-2113.

Mannion, Andrew	University College Dublin
Lhachemi, Hugo	University College Dublin
Russo, Giovanni	University College Dublin
Sweeney, Shaun	Moixa Technology
Shorten, Robert	University College Dublin

17:10-17:30 WeC07.3

The Bouncing Penny and Nonholonomic Impacts, pp. 2114-2119.

Clark, William	University of Michigan
Bloch, Anthony M.	University of Michigan

17:30-17:50 WeC07.4

Optimal Trajectory Planning and Control of Buoyancy Control Device Enabled by Water Electrolyzer, pp. 2120-2125.

zuo, wenyu	University of Houston
Yi, Xiongfeng	University of Houston
Ghorbel, Fathi H.	Rice Univ
Chen, Zheng	University of Houston

17:50-18:10 WeC07.5

On Impact De-Orbiting for Satellites Using a Prescribed Impedance Behavior, pp. 2126-2131.

Nanos, Kostas	National Technical University of Athens
Xydi-Chrysafi, Foteini	National Technical University of Athens
Papadopoulos, Evangelos	National Technical University of Athens

18:10-18:30 WeC07.6

Force-Moment Decoupling and Rotor-Failure Robustness for Star-Shaped Generically-Tilted Multi-Rotors, pp. 2132-2137.

Michieletto, Giulia	University of Padova
Cenedese, Angelo	University of Padova
Franchi, Antonio	LAAS-CNRS

WeC08 Méditerranée 3

Estimation and Control of PDE Systems III (Invited Session)

Chair: Demetriou, Michael A.	Worcester Polytechnic Institute
Co-Chair: Fahroo, Fariba	AFOSR
Organizer: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Fahroo, Fariba	AFOSR
Organizer: Le Gorrec, Yann	Ensmm, Femto-St / As2m

16:30-16:50 WeC08.1

Isostable Reduction and Boundary Feedback Control for Nonlinear Convective Flows (I), pp. 2138-2143.

Wilson, Dan	University of Tennessee
Djouadi, Seddik	University of Tennessee

16:50-17:10 WeC08.2

Feedback Kernel Approximations and Sensor Selection for Controlled 2D Parabolic PDEs Using Computational Geometry Methods (I), pp. 2144-2150.

Demetriou, Michael A.	Worcester Polytechnic Institute
Hu, Weiwei	University of Georgia

17:10-17:30 WeC08.3

Network-Based Boundary Observer-Controller Design for 1D Heat Equation (I), pp. 2151-2156.

Katz, Rami	Tel Aviv University
Fridman, Emilia	Tel-Aviv University
Selivanov, Anton	KTH Royal Institute of Technology

17:30-17:50 WeC08.4

Robust Nonlinear State Estimation for Thermal-Fluid Models Using Reduced-Order Models: The Case of the Boussinesq Equations (I), pp. 2157-2162.

Benosman, Mouhacine	Mitsubishi Electric Research Laboratories
Borggaard, Jeff	Virginia Tech

17:50-18:10 WeC08.5

On-Line Dynamic Mode Decomposition of Fluid Flows Using Moving Horizon Estimation (I), pp. 2163-2168.

Alessandri, Angelo	University of Genova
Bagnerini, Patrizia	University of Genova
Carmeli, Claudio	University of Genova
Gaggero, Mauro	National Research Council of Italy
Lengani, Davide	University of Genova
Simoni, Daniele	University of Genova

18:10-18:30 WeC08.6

Stabilization of a 2-D Reaction-Diffusion Equation with a Coupled PDE Evolving on Its Boundary (I), pp. 2169-2174.

Vazquez, Rafael	University of Seville
Krstic, Miroslav	University of California, San Diego
Zhang, Jing	Donghua University
Qi, Jie	Donghua University

WeC09 Méditerranée B12

Game Theory I (Regular Session)

Chair: Dong, Roy	University of Illinois, Urbana Champaign
Co-Chair: Brown, Philip N.	University of Colorado, Colorado Springs

16:30-16:50 WeC09.1

Designing for Emergent Security in Heterogeneous Human-Machine Teams, pp. 2175-2180.

Brown, Philip N.	University of Colorado, Colorado Springs

16:50-17:10 WeC09.2

Decision Making in Dynamic and Interactive Environments Based on Cognitive Hierarchy Theory, Bayesian Inference, and Predictive Control, pp. 2181-2187.

Li, Sisi	University of Michigan
Li, Nan	University of Michigan
Girard, Anouck	University of Michigan
Kolmanovsky, Ilya V.	University of Michigan

17:10-17:30 WeC09.3

Strategic Inference with a Single Private Sample, pp. 2188-2193.

Miehling, Erik	University of Illinois, Urbana Champaign
Dong, Roy	University of Illinois, Urbana Champaign
Langbort, Cedric	University of Illinois, Urbana Champaign
Basar, Tamer	University of Illinois, Urbana Champaign

17:30-17:50 WeC09.4

Sensor-Reveal Games, pp. 2194-2200.

Hespanha, Joao P.	University of California, Santa Barbara
Garagic, Denis	BAE Systems FAST Labs

17:50-18:10 WeC09.5

Strategic Storage Operation in Wholesale Electricity Markets: A Game Theoretic Analysis, pp. 2201-2207.

Huang, Qisheng	Singapore University of Technology and Design
Xu, Yunjian	Chinese University of Hong Kong
Courcoubetis, Costas	Singapore University of Technology and Design

18:10-18:30 WeC09.6

Constrained Mean-Field-Type Games: Stationary Case, pp. 2208-2213.

Barreiro-Gomez, Julian	New York University, Abu Dhabi (NYUAD)
Tembine, Hamidou	NYU

WeC10 Méditerranée C12

New Mobility Systems (Invited Session)

Chair: Cassandras, Christos G.	Boston University
Co-Chair: Su, Rong	Nanyang Technological University
Organizer: Cassandras, Christos G.	Boston University
Organizer: Su, Rong	Nanyang Technological University
Organizer: Malikopoulos, Andreas A.	University of Delaware

16:30-16:50 WeC10.1

Sensitivity Analysis and Relaxation of the Static Traffic Assignment Problem with Capacity Constraints to Assess the Impact of Traffic Incidents (I), pp. 2214-2219.

Cabannes, Theophile	University of California, Berkeley
Glista, Elizabeth	University of California, Berkeley
Dwarakanath, Kshama	University of California, Berkeley
Rao, Xu	University of California, Berkeley
Veeravalli, Tanya	University of California, Berkeley
Bayen, Alexandre	University of California, Berkeley

16:50-17:10 WeC10.2

Time and Energy-Optimal Lane Change Maneuvers for Cooperating Connected and Automated Vehicles (I), pp. 2220-2225.

Chen, Rui	Boston University
Cassandras, Christos G.	Boston University
Tahmasbi-Sarvestani, Amin	Honda R&D Americas

17:10-17:30 WeC10.3

Exploiting Beneficial Information Sharing among Autonomous Vehicles (I), pp. 2226-2232.

Han, Songyang	University of Connecticut
Fu, Jie	Worcester Polytechnic Institute
Miao, Fei	University of Connecticut

17:30-17:50 WeC10.4

Contention-Resolving Model Predictive Control for Coordinating Automated Vehicles at a Traffic Intersection (I), pp. 2233-2238.

Yao, Ningshi	Georgia Institute of Technology
Malisoff, Michael	Louisiana State University
Zhang, Fumin	Georgia Institute of Technology

17:50-18:10 WeC10.5

Cumulative Prospect Theory Based Dynamic Pricing for Shared Mobility on Demand Services (I), pp. 2239-2244.

Guan, Yue	Massachusetts Institute of Technology
Annaswamy, Anuradha M.	Massachusetts Institute of Technology
tseng, eric	Ford Motor Company

18:10-18:30 WeC10.6

Eco-Routing of Connected Plug-In Hybrid Electric Vehicles (I), pp. 2245-2250.

Guanetti, Jacopo	University of California, Berkeley
Kim, Yeojun	University of California, Berkeley
Borrelli, Francesco	Unversity of California, Berkeley

WeC11 Galliéni 1

Markov Processes II (Regular Session)

Chair: He, Xingkang	KTH Royal Institute of Technology
Co-Chair: Carè, Algo	University of Brescia

16:30-16:50 WeC11.1

Incentive Design for Temporal Logic Objectives, pp. 2251-2258.

Savas, Yagiz	University of Texas, Austin

Gupta, Vijay	University of Notre Dame
Ornik, Melkior	University of Illinois, Urbana Champaign
Ratliff, Lillian J.	University of Washington
Topcu, Ufuk	University of Texas, Austin

16:50-17:10 WeC11.2

Parameter-Dependent Poisson Equations: Tools for Stochastic Approximation in a Markovian Framework, pp. 2259-2264.

Carè, Algo	University of Brescia
Csáji, Balázs	SZTAKI
Gerencsér, Balázs	Alfréd Rényi Institute of Mathematics
Gerencsér, László	MTA SZTAKI
Rasonyi, Miklos	Hungarian Academy

17:10-17:30 WeC11.3

Reward-Based Deception with Cognitive Bias, pp. 2265-2270.

Wu, Bo	University of Texas, Austin
Cubuktepe, Murat	University of Texas, Austin
Bharadwaj, Sudarshanan	University of Texas, Austin
Topcu, Ufuk	University of Texas, Austin

17:30-17:50 WeC11.4

Unpredictable Planning under Partial Observability, pp. 2271-2277.

Hibbard, Michael	University of Texas, Austin
Savas, Yagiz	University of Texas, Austin
Wu, Bo	University of Texas, Austin
Tanaka, Takashi	University of Texas, Austin
Topcu, Ufuk	University of Texas, Austin

17:50-18:10 WeC11.5

Network Weight Estimation for Binary-Valued Observation Models, pp. 2278-2283.

Xing, Yu	Academy of Mathematics and Systems Science, Chinese Academy of S
He, Xingkang	KTH Royal Institute of Technology
Fang, Haitao	Chinese Academy of Sciences
Johansson, Karl H.	KTH Royal Institute of Technology

18:10-18:30 WeC11.6

Satisfiability Bounds for Omega-Regular Properties in Bounded-Parameter Markov Decision Processes, pp. 2284-2291.

Weininger, Maximilian	Technical University of Munich
Meggendorfer, Tobias	Technical University of Munich
Kretinsky, Jan	Technical University of Munich

WeC12 Galliéni 2

Analytic and Geometric Tools in Quantum Control (Invited Session)

Chair: Chambrion, Thomas	Université de Lorraine
Co-Chair: Ticozzi, Francesco	University of Padova
Organizer: Chambrion, Thomas	Université de Bourgogne

16:30-16:50 WeC12.1

On the Compatibility between the Adiabatic and the Rotating Wave Approximations in Quantum Control (I), pp. 2292-2297.

Augier, Nicolas	CMAP Polytechnique
Boscain, Ugo V.	CNRS
Sigalotti, Mario	INRIA Paris

16:50-17:10 WeC12.2

Quantum Control in Infinite Dimensions and Banach-Lie Algebras (I), pp. 2298-2303.

Keyl, Michael	FU Berlin

17:10-17:30 WeC12.3

On Exponential Stabilization of Two-Qubit Systems (I), pp. 2304-2309.

Liang, Weichao	L2S CentraleSupelec
Amini, Nina H.	CNRS, L2S, CentraleSupelec
Mason, Paolo	CNRS, Laboratoire Des Signaux Et Systèmes, Supélec

17:30-17:50 WeC12.4

The Whole from the Parts: Quantum Markovian Stabilizing Dynamics and Ground-State Cooling under Locality Constraints (I), pp. 2310-2315.

Ticozzi, Francesco	University of Padova
Karuvade, Salini	University of Calgary
Viola, Lorenza	Dartmouth College

17:50-18:10 WeC12.5

Impulsive Control of the Bilinear Schrödinger Equation: Propagators and Attainable Sets (I), pp. 2316-2321.

Boussaïd, Nabile	Université de Franche-Comté
Caponigro, Marco	Conservatoire National Des Arts Et Métiers
Chambrion, Thomas	Université de Bourgogne

18:10-18:30 WeC12.6

Reachable Sets from Toy Models to Controlled Markovian Quantum Systems (I), pp. 2322-2329.

Dirr, Gunther	University of Wuerzburg
vom Ende, Frederik	Technichal University Munich (TUM)
Schulte-Herbrueggen, Thomas	Technichal University Munich (TUM)

WeC13 Galliéni 4

Predictive Control for Nonlinear Systems (Regular Session)

Chair: Lobo Pereira, Fernando	Porto University
Co-Chair: Houska, Boris	ShanghaiTech University

16:30-16:50 WeC13.1

Performance Bounds for Stochastic Receding Horizon Control with Randomly Sampled Measurements, pp. 2330-2335.

Tanwani, Aneel	Laas -- Cnrs
Chatterjee, Debasish	Indian Institute of Technology, Bombay
Gruene, Lars	University of Bayreuth

16:50-17:10 WeC13.2

Learning Model Predictive Control for Connected Autonomous Vehicles, pp. 2336-2343.

Jafarzadeh, Hassan	University of Virginia
Fleming, Cody	University of Virginia

17:10-17:30 WeC13.3

A Framework for the Sustainable Control and Optimization of Resources in Agriculture, pp. 2344-2349.

Lobo Pereira, Fernando	Porto University

Pena, Ismael da Silva	São Paulo State University (Unesp), Institute of Biosciences,
Silva, Geraldo Nunes	Universidade Estadual Paulista (UNESP)

17:30-17:50 WeC13.4

A Time Splitting Based Real-Time Iteration Scheme for Nonlinear MPC, pp. 2350-2355.

Jiang, Yuning	ShanghaiTech University
Jones, Colin N.	EPFL
Houska, Boris	ShanghaiTech University

17:50-18:10 WeC13.5

A Model Predictive Control Framework for Asymptotic Stabilization of Discretized Hybrid Dynamical Systems, pp. 2356-2361.

Ojaghi, Pegah	University of California, Santa Cruz
Altin, Berk	University of California, Santa Cruz
Sanfelice, Ricardo G.	University of California, Santa Cruz

18:10-18:30 WeC13.6

Approximate Multiparametric Mixed-Integer Convex Programming, pp. 2362-2367.

Malyuta, Danylo	University of Washington
Acikmese, Behcet	University of Washington

WeC14 Galliéni 7

Lyapunov Methods III (Regular Session)

Chair: Wisniewski, Rafal	Aalborg University
Co-Chair: Hendrickx, Julien M.	Université Catholique de Louvain

16:30-16:50 WeC14.1

Safe Reachability Verification of Nonlinear Switched Systems Via a Barrier Density, pp. 2368-2372.

Kivilcim, Aysegul	Aalborg University
Karabacak, Özkan	Aalborg University
Wisniewski, Rafal	Aalborg University

16:50-17:10 WeC14.2

Universal Formula for Smooth Safe Stabilization, pp. 2373-2378.

Ong, Pio	University of California, San Diego
Cortes, Jorge	University of California, San Diego

17:10-17:30 WeC14.3

Kinetic-Potential Energy Shaping for Mechanical Systems with Applications to Tracking, pp. 2379-2384.

Ferguson, Joel	University of Newcastle
Donaire, Alejandro	University of Newcastle
Middleton, Richard	University of Newcastle

17:30-17:50 WeC14.4

Trajectory Convergence from Coordinate-Wise Decrease of Quadratic Energy Functions, and Applications to Platoons, pp. 2385-2390.

Hendrickx, Julien M.	Université Catholique de Louvain
Gerencsér, Balázs	Alfréd Rényi Institute of Mathematics
Fidan, Baris	University of Waterloo

17:50-18:10 WeC14.5

On the Relation between Detectability and Dissipativity for Nonlinear Discrete Time Systems, pp. 2391-2396.

Gruene, Lars	University of Bayreuth
Höger, Matthias	Siemens AG

18:10-18:30 WeC14.6

Relaxing the Hamilton Jacobi Bellman Equation to Construct Inner and Outer Bounds on Reachable Sets, pp. 2397-2404.

Jones, Morgan	Arizona State University
Peet, Matthew M.	Arizona State University

WeC15 Rhodes GH

Optimality Conditions for Control Problems II (Invited Session)

Chair: Poggiolini, Laura	University of Firenze
Co-Chair: Chittaro, Francesca	Université de Toulon
Organizer: Chittaro, Francesca	Université de Toulon
Organizer: Frankowska, Helene	CNRS and Sorbonne University, Campus Pierre Et Marie Curie
Organizer: Poggiolini, Laura	University of Firenze

16:30-16:50 WeC15.1

Sufficient Conditions for Time Optimality of Systems with Control on the Disk (I), pp. 2405-2409.

Caillau, Jean-Baptiste	Université Côte d'Azur, CNRS, INRIA, LJAD
Orieux, Michaël	SISSA

16:50-17:10 WeC15.2

On Optimal Control Problems with Nonregular Mixed Constraints (I), pp. 2410-2415.

Becerril, Jorge	Universidade do Porto
de Pinho, Maria Do Rosario	Universidade do Porto, Fac. Engenharia

17:10-17:30 WeC15.3

On Second Order Necessary Conditions in Infinite Dimensional Optimal Control with State Constraints (I), pp. 2416-2421.

Frankowska, Helene	CNRS and Sorbonne University, Campus Pierre Et Marie Curie
Marchini, Elsa Maria	Politecnico di Milano
Mazzola, Marco	Sorbonne Université

17:30-17:50 WeC15.4

The Turnpike Property in Nonlinear Optimal Control a Geometric Approach, pp. 2422-2427.

Sakamoto, Noboru	Nanzan University
Pighin, Dario	Universidad Autónoma de Madrid
Zuazua, Enrique	DeustoTech, Universidad de Deusto

17:50-18:10 WeC15.5

Second-Order Necessary Conditions for Optimal Control Problems with Fixed Terminal Time and Free Terminal State, pp. 2428-2435.

Özparpucu, Mehmet Can	German Aerospace Center, DLR

18:10-18:30 WeC15.6

Modelling Uncertainty in Reinforcement Learning (I), pp. 2436-2441.

Palladino, Michele	GSSI - Gran Sasso Science Institute
Murray, Ryan	Pennsylvania State University

WeC16 Rhodes AB

Optimization III (Regular Session)

Chair: Tallapragada, Pavankumar	Indian Institute of Science
Co-Chair: Ishizaki, Takayuki	Tokyo Institute of Technology

16:30-16:50 WeC16.1

Predicting Mode Confusion through Mixed Integer Linear Programming, pp. 2442-2448.

Sivaramakrishnan, Vignesh	University of New Mexico
Thapliyal, Omanshu	Purdue University
P. Vinod, Abraham	University of Texas, Austin
Oishi, Meeko	University of New Mexico
Hwang, Inseok	Purdue University

16:50-17:10 WeC16.2

A Distributed Online Convex Optimization Algorithm with Improved Dynamic Regret, pp. 2449-2454.

Zhang, Yan	Duke University
Ravier, Robert	Duke University
Zavlanos, Michael M.	Duke University
Tarokh, Vahid	Duke University

17:10-17:30 WeC16.3

Prediction in Online Convex Optimization for Parametrizable Objective Functions, pp. 2455-2460.

Ravier, Robert	Duke University
Calderbank, A.R.	Duke University
Tarokh, Vahid	Duke University

17:30-17:50 WeC16.4

Optimal Scheduling of Storage Batteries and Power Generators Based on Interval Prediction of Photovoltaics - Monotonicity Analysis for State of Charge -, pp. 2461-2466.

Koike, Masakazu	Tokyo University of Marine Science and Technology
Ishizaki, Takayuki	Tokyo Institute of Technology
Ramdani, Nacim	University of Orléans
Imura, Jun-ichi	Tokyo Institute of Technology

17:50-18:10 WeC16.5

Optimal Coverage Control and Stochastic Multi-Target Tracking, pp. 2467-2472.

Khaledyan, Milad	University of New Mexico
Puthuvana Vinod, Abraham	University of Texas, Austin
Oishi, Meeko	University of New Mexico
Richards, John A.	Sandia National Laboratories

18:10-18:30 WeC16.6

Robust Optimization Via Discrete-Time Saddle Point Algorithm, pp. 2473-2478.

Ebrahimi, Keivan	Iowa State University
Elia, Nicola	University of Minnesota
Vaidya, Umesh	Iowa State University

WeC17 Rhodes CD

Switched Systems III (Regular Session)

Chair: Kader, Zohra	L2S, CentraleSupelec, Paris
Co-Chair: Raïssi, Tarek	Conservatoire National Des Arts Et Métiers

16:30-16:50 WeC17.1

Interval Estimation for Discrete-Time LPV Switched Systems, pp. 2479-2484.

Zammali, Chaima	Conservatoire National Des Arts Et Métiers (CNAM), Cedric Lab
Van Gorp, Jeremy	CNAM
Ping, Xubin	Xidian University
Raïssi, Tarek	Conservatoire National Des Arts Et Métiers

16:50-17:10 WeC17.2

Reference Tracking for Linear Time Invariant Systems with a Relay Control, pp. 2485-2490.

Kader, Zohra	L2S, CentraleSupelec, Paris
Girard, Antoine	CNRS

17:10-17:30 WeC17.3

Free-Matrices Min-Projection Control for High Frequency DC-DC Converters, pp. 2491-2496.

Serieye, Mathias	LAAS-CNRS
Albea Sanchez, Carolina	LAAS CNRS; University de Toulouse 3
Seuret, Alexandre	CNRS

17:30-17:50 WeC17.4

Switching Signal Estimation Based on Interval Observer for a Class of Switched Linear Systems, pp. 2497-2502.

Zammali, Chaima	Conservatoire National Des Arts Et Métiers (CNAM), Cedric Lab
VAN GORP, Jeremy	CNAM
Ping, Xubin	Xidian University
Raïssi, Tarek	Conservatoire National Des Arts Et Métiers

17:50-18:10 WeC17.5

A Semidefinite Programming Approach for Stochastic Switched Optimal Control Problems, pp. 2503-2508.

Davoudi, Ramtin	Tarbiat Modares University
Hosseini, S. Mohammad	Tarbiat Modares University
Ramezani, Amin	Tarbiat Modares University

18:10-18:30 WeC17.6

Switched Linear Systems Meet Markov Decision Processes: Stability Guaranteed Policy Synthesis, pp. 2509-2515.

Wu, Bo	University of Texas, Austin
Cubuktepe, Murat	University of Texas, Austin
Topcu, Ufuk	University of Texas, Austin

WeC18 Rhodes EF

Observers for Nonlinear Systems III (Regular Session)

Chair: Verriest, Erik I.	Georgia Institute of Technology
Co-Chair: Millerioux, Gilles	Lorraine University

16:30-16:50 WeC18.1

Nonlinear Observers for Stereo-Vision-Aided Inertial Navigation, pp. 2516-2521.

Wang, Miaomiao	Western University
Tayebi, Abdelhamid	Lakehead University

16:50-17:10 WeC18.2

Detecting Limit Cycles in Dimension Two, pp. 2522-2527.

Verriest, Erik I.	Georgia Institute of Technology
Murali, Vishal	Georgia Institute of Technology

17:10-17:30 WeC18.3

Contact Force Observer for Space Robots, pp. 2528-2535.

Cavenago, Francesco	Politecnico di Milano
Giordano, Alessandro Massimo	Technical University of Munich
Massari, Mauro	Politecnico di Milano

17:30-17:50 WeC18.4

Attitude Observation for Second Order Attitude Kinematics, pp. 2536-2542.

Ng, Yonhon	Australian National University
van Goor, Pieter	Australian National University
Mahony, Robert	Australian National University,
Hamel, Tarek	Université de Nice Sophia Antipolis

17:50-18:10 WeC18.5

A Geometric Observer Design for Visual Localisation and Mapping, pp. 2543-2549.

van Goor, Pieter	Australian National University
Mahony, Robert	Australian National University,
Hamel, Tarek	Université de Nice Sophia Antipolis
Trumpf, Jochen	Australian National University

18:10-18:30 WeC18.6

Flatness and Submersivity of Discrete-Time Dynamical Systems, pp. 2550-2555.

GUILLOT, PHILIPPE	Université Paris 8
Millerioux, Gilles	Lorraine University

WeC19 Galliéni 5

Stochastic Systems I (Regular Session)

Chair: Georgiou, Tryphon T.	University of California, Irvine
Co-Chair: Bitmead, Robert R.	University of California San Diego

16:30-16:50 WeC19.1

On Optimal Steering of a Non-Markovian Gaussian Process, pp. 2556-2561.

Alpago, Daniele	University of Padova
Chen, Yongxin	Georgia Institute of Technology
Georgiou, Tryphon T.	University of California, Irvine
Pavon, Michele	University of Padova

16:50-17:10 WeC19.2

Surrogate Problems for Tractable Excitation Management in Stochastic MPC, pp. 2562-2567.

Brüggemann, Sven	University of California, San Diego
Bitmead, Robert R.	University of California San Diego

17:10-17:30 WeC19.3

Estimating the Probability of Safe Landing for Aircrafts, pp. 2568-2573.

Semakov, Sergei	Moscow Institute of Physics and Technology, Moscow Aviation Inst
Semakov, Ivan	Moscow Aviation Institute, Tinkoff Bank

17:30-17:50 WeC19.4

Compositional Verification of Large-Scale Stochastic Systems Via Relaxed Small-Gain Conditions, pp. 2574-2579.

Lavaei, Abolfazl	Technical University of Munich (TUM)
Zamani, Majid	University of Colorado Boulder

17:50-18:10 WeC19.5

The Impact of Execution Delay on Kelly-Based StockTrading: High-Frequency versus Buy and Hold, pp. 2580-2585.

Hsieh, Chung-Han	University of Wisconsin-Madison
Barmish, B. Ross	Boston University
Gubner, John A.	University of Wisconsin-Madison

18:10-18:30 WeC19.6

Conditionally-Minimax Nonlinear Filtering for Continuous-Discrete Stochastic Observation Systems: Comparative Study in Target Tracking, pp. 2586-2591.

Borisov, Andrey	Frc Csc Ras
Bosov, Alexey	Frc Csc Ras
Miller, Gregory	Frc Csc Ras

WeC20 Rhodes 10

Event-Triggered and Self-Triggered Control for Distributed Systems (Invited Session)

Chair: Heemels, W.P.M.H.	Eindhoven University of Technology
Co-Chair: Johansson, Karl H.	KTH Royal Institute of Technology
Organizer: Heemels, W.P.M.H.	Eindhoven University of Technology
Organizer: Hirche, Sandra	Technische Universität München
Organizer: Johansson, Karl H.	KTH Royal Institute of Technology

16:30-16:50 WeC20.1

Event-Based Switching for Sampled-Data Output Feedback Control: Applications to Cascade and Feedforward Control (I), pp. 2592-2597.

Iwaki, Takuya	KTH Royal Institute of Technology
Fridman, Emilia	Tel-Aviv University
Johansson, Karl H.	KTH Royal Institute of Technology

16:50-17:10 WeC20.2

Distributed Dynamic Event-Triggered Algorithms with Positive Minimum Inter-Event Times on Weight-Balanced Digraphs (I), pp. 2598-2603.

Berneburg, James	George Mason University
Nowzari, Cameron	George Mason University

17:10-17:30 WeC20.3

Event-Triggered Consensus for Multi-Agent Systems with Guaranteed Robust Positive Minimum Inter-Event Times (I), pp. 2604-2609.

Dolk, Victor Sebastiaan	Eindhoven University of Technology
Postoyan, Romain	CNRS, CRAN, Université de Lorraine
Heemels, W.P.M.H.	Eindhoven University of Technology

17:30-17:50 WeC20.4

A Symbolic Approach to the Self-Triggered Design for Networked Control Systems, pp. 2610-2615.

Hashimoto, Kazumune	Osaka University
Saoud, Adnane	CentraleSupélec
Kishida, Masako	National Institute of Informatics
Ushio, Toshimitsu	Osaka University
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

17:50-18:10 WeC20.5

Control-Guided Communication: Efficient Resource Arbitration and Allocation in Multi-Hop Wireless Control Systems, pp. 2616-2621.

Baumann, Dominik	Max Planck Institute for Intelligent Systems
Mager, Fabian	TU Dresden
Zimmerling, Marco	TU Dresden
Trimpe, Sebastian	Max Planck Institute for Intelligent Systems

WeC21 Risso 6

Sensor and Control Networks (Regular Session)

Chair: Antunes, Duarte	Eindhoven University of Technology
Co-Chair: Mirkin, Leonid	Technion - IIT

16:30-16:50 WeC21.1

An L2-Consistent Data Transmission Sequence for Linear Systems, pp. 2622-2627.

Balaghi I., M. Hadi	Eindhoven University of Technology
Antunes, Duarte	Eindhoven University of Technology
Heemels, W.P.M.H.	Eindhoven University of Technology

16:50-17:10 WeC21.2

Asynchronous Multi-Rate Sampled-Data Control: An Embedded Model Control Perspective, pp. 2628-2633.

Perez Montenegro, Carlos Norberto	Politecnico di Torino
Colangelo, Luigi	Politecnico di Torino
Pardo Álvarez, José María	Universidad Politécnica de Madrid - Politecnico di Torino
Rizzo, Alessandro	Politecnico di Torino
Novara, Carlo	Politecnico di Torino

17:10-17:30 WeC21.3

H2 Control under Intermittent Sampling and Small Communication Delays, pp. 2634-2639.

Goldenshluger, Alexander	University of Haifa
Mirkin, Leonid	Technion - IIT

17:30-17:50 WeC21.4

Distributed Kalman-Filtering: Distributed Optimization Viewpoint, pp. 2640-2645.

Ryu, Kunhee	Kwangwoon University
Back, Juhoon	Kwangwoon University

17:50-18:10 WeC21.5

Consensus-Based Distributed 3D Pose Estimation with Noisy Relative Measurements, pp. 2646-2653.

Cristofalo, Eric	Stanford University
Montijano, Eduardo	Universidad de Zaragoza
Schwager, Mac	Stanford University

18:10-18:30 WeC21.6

Game Theoretical Approach to Sequential Hypothesis Test with Byzantine Sensors, pp. 2654-2659.

Li, Zishuo	Tsinghua University
Mo, Yilin	Tsinghua University
Hao, Fei	Beijing University of Aeronautics and Astronautics

WeC22 Risso 7

Identification III (Regular Session)

Chair: Aljanaideh, Khaled	Jordan University of Science and Technology
Co-Chair: Sojoudi, Somayeh	University of California, Berkeley

16:30-16:50 WeC22.1

Piecewise Affine System Identification: A Least Harmonic Mean Approach, pp. 2660-2665.

Bako, Laurent	Ecole Centrale de Lyon
Yahya, Olfa	Université de Gabès

16:50-17:10 WeC22.2

From Dirac Structure to State Model: Identification of Linear Time-Varying Port-Hamiltonian Systems, pp. 2666-2671.

Rapisarda, Paolo	University of Southampton
Branford, Edward	College of Engineering, Mathematics and Physical Sciences, Unive

17:10-17:30 WeC22.3

Subspace Methods for Multi-Channel Sum-Of-Exponentials Common Dynamics Estimation, pp. 2672-2675.

Markovsky, Ivan	Vrije Universiteit Brussel
Liu, Tianxiang	RIKEN Center for Advanced Intelligence Project
Takeda, Akiko	University of Tokyo

17:30-17:50 WeC22.4

Sample Complexity Lower Bounds for Linear System Identification, pp. 2676-2681.

Jedra, Yassir	KTH Royal Institute of technology
Proutiere, Alexandre	KTH Royal Institute of technology

17:50-18:10 WeC22.5

Learning Sparse Dynamical Systems from a Single Sample Trajectory, pp. 2682-2689.

Fattahi, Salar	University of California, Berkeley
Matni, Nikolai	University of Pennsylvania
Sojoudi, Somayeh	University of California, Berkeley

18:10-18:30 WeC22.6

Errors-In-Variables Identification of Composite Noncausal-FIR/IIR Models with Application to Transmissibility Identification, pp. 2690-2695.

Aljanaideh, Khaled	Jordan University of Science and Technology
Diversi, Roberto	University of Bologna

WeC23 Risso 8

Learning-Based Model Predictive Control (Invited Session)

Chair: Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Co-Chair: Zeilinger, Melanie N.	ETH Zurich
Organizer: Schoellig, Angela P	University of Toronto
Organizer: Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Organizer: Zeilinger, Melanie N.	ETH Zurich
Organizer: Muller, Matthias A.	Leibniz University Hannover

16:30-16:50 WeC23.1

Regularized and Distributionally Robust Data-Enabled Predictive Control (I), pp. 2696-2701.

Coulson, Jeremy	ETH Zürich
Lygeros, John	ETH Zürich
Dörfler, Florian	ETH Zürich

16:50-17:10 WeC23.2

Sample-Based Learning Model Predictive Control for Linear Uncertain Systems (I), pp. 2702-2707.

Rosolia, Ugo	University of California, Berkeley
Borrelli, Francesco	Unversity of California, Berkeley

17:10-17:30 WeC23.3

Model Predictive Control Using Efficient Gaussian Processes for Unknown Disturbance Inputs (I), pp. 2708-2713.

Grasshoff, Jan	Universität Zu Lübeck
Maennel, Georg	Universität Zu Lübeck
Abbas, Hossam	University of Lübeck
Rostalski, Philipp	University of Luebeck

17:30-17:50 WeC23.4

Performance-Oriented Model Learning for Data-Driven MPC Design, pp. 2714-2719.

Piga, Dario	University of Applied Sciences and Arts of Southern Switzerland
Forgione, Marco	SUPSI
Formentin, Simone	Politecnico di Milano
Bemporad, Alberto	IMT Institute for Advanced Studies Lucca

17:50-18:10 WeC23.5

Model Predictive Control Design for Dynamical Systems Learned by Echo State Networks, pp. 2720-2725.

Bugliari Armenio, Luca	Politecnico di Milano
Terzi, Enrico	Politecnico di Milano
Farina, Marcello	Politecnico di Milano
Scattolini, Riccardo	Politecnico di Milano

18:10-18:30 WeC23.6

Probabilistic Verification and Reachability Analysis of Neural Networks Via Semidefinite Programming (I), pp. 2726-2731.

Fazlyab, Mahyar	University of Pennsylvania
Morari, Manfred	University of Pennsylvania
Pappas, George J.	University of Pennsylvania

WeC24 Hermès

Learning III (Regular Session)

Chair: Preciado, Victor M.	University of Pennsylvania
Co-Chair: Mehta, Prashant G.	University of Illinois, Urbana Champaign

16:30-16:50 WeC24.1

Data-Driven Stabilization of Nonlinear Systems Via Tree-Based Ensemble Learning, pp. 2732-2737.

Aydinoglu, Alp	University of Pennsylvania
Becker, Cassiano	University of Pennsylvania
Preciado, Victor M.	University of Pennsylvania

16:50-17:10 WeC24.2

Decision Variance in Risk-Averse Online Learning, pp. 2738-2744.

Vakili, Sattar	Prowler.io
Boukouvalas, Alexis	Prowler.io
Zhao, Qing	Cornell University

17:10-17:30 WeC24.3

Distributed Online Learning Over Time-Varying Graphs Via Proximal Gradient Descent, pp. 2745-2751.

Dixit, Rishabh	Rutgers University
Bedi, Amrit S.	Indian Institute of Technology Kanpur
Rajawat, Ketan	Indian Institute of Technology Kanpur
Koppel, Alec	U.S. Army Research Laboratory

17:30-17:50 WeC24.4

Nonlinear Reduced Order Source Identification under Uncertainty, pp. 2752-2757.

Khodayi-mehr, Reza	Duke University
Zavlanos, Michael M.	Duke University

17:50-18:10 WeC24.5

Q-Learning for POMDP: An Application to Learning Locomotion Gaits, pp. 2758-2763.

Wang, Tixian	University of Illinois, Urbana Champaign
Taghvaei, Amirhossein	University of Illinois, Urbana Champaign
Mehta, Prashant G.	University of Illinois, Urbana Champaign

18:10-18:30 WeC24.6

An Online Sample-Based Method for Mode Estimation Using ODE Analysis of Stochastic Approximation Algorithms, pp. 2764-2769.

Kamanchi, Chandramouli	Indian Institute of Science, Bangalore
Diddigi, Raghuram Bharadwaj	Indian Institute of Science, Bangalore
K.J., Prabuchandran	Indian Institute of Science, Bangalore
Bhatnagar, Shalabh	Indian Institute of Science, Bangalore

WeC25 Athéna

Multi-Agent Systems III (Regular Session)

Chair: Karimoddini, Ali	North Carolina A&T State University
Co-Chair: Sakurama, Kazunori	Kyoto University

16:30-16:50 WeC25.1

On-The-Fly Decentralized Tasking of Autonomous Vehicles, pp. 2770-2775.

Tadewos, Tadewos Getahun	North Carolina A&T State University
Shamgah, Laya	North Carolina A&T State University
Karimoddini, Ali	North Carolina A&T State University

16:50-17:10 WeC25.2

Automatic Safe Behaviour Tree Synthesis for Autonomous Agents, pp. 2776-2781.

Tadewos, Tadewos Getahun	North Carolina A&T State University
Shamgah, Laya	North Carolina A&T State University
Karimoddini, Ali	North Carolina A&T State University

17:10-17:30	WeC25.3

Formation-Oriented Motion Coordination of Multi-Agent Systems Over Relative Measurements, pp. 2782-2787.

Sakurama, Kazunori	Kyoto University

17:30-17:50	WeC25.4

Towards Assume-Guarantee Profiles for Autonomous Vehicles, pp. 2788-2795.

Phan, Tung, M	California Institute of Technology
Cai, Karena	Ms
Murray, Richard M.	California Institute of Technology

17:50-18:10	WeC25.5

Asynchronous Decision-Making Dynamics under Imitation Update Rule in Heterogeneous Populations, pp. 2796-2801.

Fu, Yiheng	University of Alberta
Ramazi, Pouria	University of Alberta

18:10-18:30	WeC25.6

Surrogate Optimal Control for Strategic Multi-Agent Systems, pp. 2802-2807.

Hespanhol, Pedro	University of California, Berkeley
Aswani, Anil	University of California, Berkeley

ThSP1 Apollon

Distributed Machine Learning Over Networks (Semiplenary Session)

Chair: Sepulchre, Rodolphe — University of Cambridge

08:30-09:30 ThSP1.1

*Distributed Machine Learning Over Networks**.

Bach, Francis — INRIA - Ecole Normale Supérieure

ThSP2 Athéna

The Curse of Linearity and Time-Invariance (Semiplenary Session)

Chair: Prieur, Christophe — CNRS

08:30-09:30 ThSP2.1

*The Curse of Linearity and Time-Invariance**.

Astolfi, Alessandro — Imperial College & University of Rome

ThA01 Méditerranée 1

Control Methods for Biology and Bioprocesses (Invited Session)

Chair: Giraldi, Laetitia — INRIA Sophia-Antipolis Méditerranée

Co-Chair: Chaves, Madalena — INRIA

Organizer: Chaves, Madalena — INRIA

Organizer: Giraldi, Laetitia — INRIA Sophia-Antipolis Méditerranée

10:00-10:20 ThA01.1

An Antithetic Integral Rein Controller for Bio-Molecular Networks (I), pp. 2808-2813.

Gupta, Ankit — ETH Zürich

Khammash, Mustafa H. — ETH Zurich

10:20-10:40 ThA01.2

A Hybrid Control against Species Invasion in the Chemostat (I), pp. 2814-2819.

Tani, Fatima Zahra — Université de Montpellier

Rapaport, Alain — U. Montpellier, INRA, Montpellier SupAgro

Bayen, Térence — Université de Montpellier

10:40-11:00 ThA01.3

Some Remarks on Robust Gene Regulation in a Biomolecular Integral Controller (I), pp. 2820-2825.

Agrawal, Deepak Kumar — Northeastern University

Marshal, Ryan — University of Minnesota

Ali Al-Radhawi, Muhammad — Massachussets Institute of Technology

Noireaux, Vincent — University of Minnesota

Sontag, Eduardo — Northeastern University

11:00-11:20 ThA01.4

Coupling and Synchronization of Piecewise Linear Genetic Regulatory Systems (I), pp. 2826-2831.

Chaves, Madalena — INRIA

Scardovi, Luca — University of Toronto

Firippi, Eleni — INRIA

11:20-11:40 ThA01.5

Proportional and Derivative Controllers for Buffering Noisy Gene Expression, pp. 2832-2837.

Modi, Saurabh — University of Delaware

Dey, Supravat — Department of Electrical and Computer Engineering, University

Singh, Abhyudai — University of Delaware

11:40-12:00 ThA01.6

Global Asymptotic Stability of a Genetic Negative Feedback Loop with an Affine Control, pp. 2838-2843.

Chambon, Lucie — INRIA

Gouze, Jean-Luc — INRIA

ThA02 Méditerranée 2

Linear Matrix Inequalities (Regular Session)

Chair: Ravazzi, Chiara — National Research Council of Italy (CNR)

Co-Chair: Kojima, Akira — Tokyo Metropolitan University

10:00-10:20 ThA02.1

H∞ Filter Design for Discrete-Time Linear Positive Systems, pp. 2844-2849.

Krokavec, Dusan — Technical University of Kosice, Slovakia

Filasova, Anna — Technical University of Kosice, Slovakia

10:20-10:40 ThA02.2

A Calculation Method of Parameter-Dependent LMIs on Bernstein Polynomial Basis: Polytopic Representation Case, pp. 2850-2857.

Kojima, Akira — Tokyo Metropolitan University

10:40-11:00 ThA02.3

A Strictly Bounded Real Lemma for Singular Markovian Jump Systems, pp. 2858-2861.

Park, Chaneun — Postech

Park, In Seok — Postech

Park, PooGyeon — Pohang University of Sci. & Technology

11:00-11:20 ThA02.4

Robust Data-Driven Neuro-Adaptive Observers with Lipschitz Activation Functions, pp. 2862-2867.

Chakrabarty, Ankush — Mitsubishi Electric Research Laboratories (MERL)

Zemouche, Ali — CRAN UMR CNRS 7039 & INRIA: EPI-DISCO

Rajamani, Rajesh — University of Minnesota

Benosman, Mouhacine — Mitsubishi Electric Research Laboratories

11:20-11:40 ThA02.5

On the Design of Structured Stabilizers for LTI Systems, pp. 2868-2873.

Ferrante, Francesco — GIPSA-Lab and Université Grenoble Alpes

Dabbene, Fabrizio — CNR-IEIIT

Ravazzi, Chiara — National Research Council of Italy (CNR)

11:40-12:00 ThA02.6

Asymptotic Unknown Input Decoupling Observer for Discrete-Time LTI Systems, pp. 2874-2879.

Ichalal, Dalil — Université d'Evry Val d'Essonne, IBISC Lab

Mammar, Said — Université d'Evry IBISC

ThA03	Méditerranée 5
Adaptive Control IV (Regular Session)	
Chair: Bai, He	Oklahoma State University
Co-Chair: Padhi, Radhakant	Indian Institute of Science

10:00-10:20 ThA03.1

Cooperative Manipulation of an Unknown Payload with Concurrent Mass and Drag Force Estimation, pp. 2880-2885.

Thapa, Sandesh	Oklahoma State University
Self, Ryan	Oklahoma State University
Kamalapurkar, Rushikesh	Oklahoma State University
Bai, He	Oklahoma State University

10:20-10:40 ThA03.2

Output-Constrained Robust Adaptive Control for Uncertain Nonlinear MIMO Systems with Unknown Control Directions, pp. 2886-2891.

Sachan, Kapil	Indian Institute of Science
Padhi, Radhakant	Indian Institute of Science

10:40-11:00 ThA03.3

Adaptive Backstepping Control for a Fully-Actuated Rigid-Body in a Dual-Quaternion Framework, pp. 2892-2897.

Andersen, Tom Stian	UiT the Arctic University of Norway
Kristiansen, Raymond	UiT - the Arctic University of Norway

11:00-11:20 ThA03.4

Gradient Based Pre-Filter Design for Data-Driven Parameter Updating for Regulatory Controller Based on Variance Evaluation, pp. 2898-2903.

Okada, Shogo	Tokyo Metropolitan University
Yokoyama, Tsukasa	Tokyo Metropolitan University
Masuda, Shiro	Tokyo Metropolitan University

11:20-11:40 ThA03.5

Adaptive Estimation of a Vector Point Process Model, pp. 2904-2909.

Solo, Victor	University of New South Wales
Pasha, Syed Ahmed	Air University

11:40-12:00 ThA03.6

Initial Excitation Based Adaptive Observer with Multiple Switching, pp. 2910-2915.

Katiyar, Atul	Indian Institute of Technology, Delhi
Basu Roy, Sayan	Indian Institute of Technology, Delhi
Bhasin, Shubhendu	Indian Institute of Technology, Delhi

ThA04	Méditerranée A2
Fault Detection and Diagnosis (Regular Session)	
Chair: Torres, Lizeth	Universidad Nacional Autónoma de Mexico
Co-Chair: Besancon, Gildas	GIPSA-Lab, Grenoble INP

10:00-10:20 ThA04.1

A Novel Deep DPCA-SVM Method for Fault Detection in Industrial Processes, pp. 2916-2921.

Zhang, Jian	University of Electronic Science and Technology of China
Zou, Jianxiao	University of Electronic Science and Technology of China
Zhang, Jiyang	University of Electronic Science and Technology of China
Tao, Qian	University of Electronic Science and Technology of China
Gui, Xingtai	University of Electronic Science and Technology of China
Xu, Hongbing	University of Electronic Science and Technology of China
Fan, Shicai	University of Electronic Science and Technology of China

10:20-10:40 ThA04.2

Smooth Residual Generation for Robust Isolation of Faults in Manipulators Using Joint Torque Sensors, pp. 2922-2927.

Namvar, Mehrzad	Sharif University of Technology
Karami, Sasan	Sharid Univerity of Technology

10:40-11:00 ThA04.3

Minimizing Side-Channel Attack Vulnerability Via Schedule Randomization, pp. 2928-2933.

Vreman, Nils	Lund University
Pates, Richard	Lund University
Krueger, Kristin	Technische Universitat Kaiserslautern
Fohler, Gerhard	Technische Universitat Kaiserslautern
Maggio, Martina	Lund University

11:00-11:20 ThA04.4

Fault Isolation Based on Online Sparse Optimization of Streaming Faulty Data, pp. 2934-2939.

Li, Wenqing	New York University Abu Dhabi
Wang, Yue	New York University
Jabari, Saif Eddin	New York University Abu Dhabi

11:20-11:40 ThA04.5

Invariant-Set Based Minimal Detectable Fault Computation of Discrete-Time LPV Systems with Bounded Uncertainties, pp. 2940-2945.

Tan, Junbo	Tsingahu University
Olaru, Sorin	CentraleSupélec - INRIA Saclay
Roman, Monica	University of Craiova
Xu, Feng	Tsinghua University

11:40-12:00 ThA04.6

Port-Hamiltonian Models for Flow of Incompressible Fluids in Rigid Pipelines with Faults, pp. 2946-2951.

Torres Ortiz, Flor Lizeth	Universidad Nacional AutÓnoma de MÉxico
Besancon, Gildas	GIPSA-Lab, Grenoble INP, CNRS

ThA05	Méditerranée C4
Building Automation (Regular Session)	
Chair: Rostampour, Vahab	University of Groningen
Co-Chair: Jain, Tushar	Indian Institute of Technology Mandi

10:00-10:20 ThA05.1

Steady-State Analysis of HVAC Performance Using Indoor Fans in Control Design, pp. 2952-2957.

G. Ordonez, Joaquin	University of Seville

Danielson, Claus	Mitsubishi Electric Research Labs
Bortoff, Scott A.	Mitsubishi Electric Research Laboratories
Limon, Daniel	University of Seville
Di Cairano, Stefano	Mitsubishi Electric Research Labs

10:20-10:40 ThA05.2

Identification of Aggregate Building Thermal Dynamic Model and Unmeasured Internal Heat Load from Data, pp. 2958-2963.

Guo, Zhong	University of Florida
Coffman, Austin	University of Florida
Munk, Jeffrey	Oak Ridge National Laboratory
Im, Piljae	Oak Ridge National Laboratory
Barooah, Prabir	University of Florida

10:40-11:00 ThA05.3

Diagnosis of Actuator Faults in VAV-HVAC System Using a Bilinear Observer, pp. 2964-2969.

A, Mona Subramaniam	Indian Institute of Technology Mandi
Jain, Tushar	Indian Institute of Technology Mandi
Yame, Joseph Julien	Université de Lorraine

11:00-11:20 ThA05.4

Modeling and Boundary Control Design for a High-Rise Building Structure, pp. 2970-2975.

Song, Yuhua	University of Science and Technology Beijing
Han, Zhiji	University of Science and Technology Beijing
He, Xiuyu	University of Science and Technology Beijing
He, Wei	University of Science and Technology Beijing

11:20-11:40 ThA05.5

Buildings-To-Grid Integration with High Wind Power Penetration, pp. 2976-2981.

Rostampour, Vahab	University of Groningen
Badings, Thom S.	University of Groningen
Scherpen, Jacquelien M.A.	University of Groningen

11:40-12:00 ThA05.6

A Local Market Model for Community Microgrids, pp. 2982-2987.

Savelli, Iacopo	University of Siena
Cornelusse, Bertrand	University of Liège
Paoletti, Simone	University of Siena
Giannitrapani, Antonio	University of Siena
Vicino, Antonio	University of Siena

ThA06 Méditerranée A3

Optimization Algorithms I (Regular Session)

Chair: Li, Na	Harvard University
Co-Chair: Fawzi, Hamza	University of Cambridge

10:00-10:20 ThA06.1

CODES: Cooperative Data-Enabled Extremum Seeking for Multi-Agent Systems, pp. 2988-2993.

Poveda, Jorge I.	University of Colorado, Boulder
Vamvoudakis, Kyriakos G.	Georgia Institute of Technology
Benosman, Mouhacine	Mitsubishi Electric Research Laboratories

10:20-10:40 ThA06.2

A System Theoretical Perspective to Gradient-Tracking Algorithms for Distributed Quadratic Optimization, pp. 2994-2999.

Bin, Michelangelo	University of Bologna
Notarnicola, Ivano	University of Bologna
Marconi, Lorenzo	University of Bologna
Notarstefano, Giuseppe	University of Bologna

10:40-11:00 ThA06.3

Inducing Uniform Asymptotic Stability in Non-Autonomous Accelerated Optimization Dynamics Via Hybrid Regularization, pp. 3000-3005.

Poveda, Jorge I.	University of Colorado, Boulder
Li, Na	Harvard University

11:00-11:20 ThA06.4

Distributed Submodular Maximization with Bounded Communication Cost, pp. 3006-3011.

Castiglia, Timothy	Rensselaer Polytechnic Institute
Patterson, Stacy	Rensselaer Polytechnic Institute

11:20-11:40 ThA06.5

AnySOS: An Anytime Algorithm for SOS Programming, pp. 3012-3017.

Driggs, Derek	University of Cambridge
Fawzi, Hamza	University of Cambridge

11:40-12:00 ThA06.6

Annealing for Distributed Global Optimization, pp. 3018-3025.

Swenson, Brian	Princeton University
Kar, Soummya	Carnegie Mellon University
Poor, H. Vincent	Princeton University
Moura, Jose' M. F.	Carnegie Mellon University

ThA07 Méditerranée A1

Robotics IV (Regular Session)

Chair: Solo, Victor	University of New South Wales
Co-Chair: Xin, Xin	Okayama Prefectural University

10:00-10:20 ThA07.1

Ito, Stratonovich and Geometry, pp. 3026-3032.

Solo, Victor	University of New South Wales
Chirikjian, Gregory	Johns Hopkins University

10:20-10:40 ThA07.2

Numerical Methods for Stochastic Differential Equations in Stiefel Manifolds Via the Cayley Transform, pp. 3033-3038.

Solo, Victor	University of New South Wales
Wang, Zhichao	University of New South Wales

10:40-11:00 ThA07.3

Energy Shaping Control with Virtual Spring and Damper for Powered Exoskeletons, pp. 3039-3045.

Lin, Jianping	University of Texas, Dallas
Divekar, Nikhil	University of Texas, Dallas
Lv, Ge	Carnegie Mellon University
Gregg, Robert D.	University of Michigan

11:00-11:20 ThA07.4

Optimal Control of Piecewise-Smooth Control Systems Via

Singular Perturbations, pp. 3046-3053.

Westenbroek, Tyler	University of California, Berkeley
Xiong, Xiaobin	California Institute of Technology
Ames, Aaron D.	California Institute of Technology
Sastry, Shankar	University of California, Berkeley

11:20-11:40 ThA07.5

Linear Controllability and Observability of N-Link Underactuated Planar Revolute Robot Moving in Constantly Rotating Frame in Horizontal Plane, pp. 3054-3059.

Xin, Xin	Okayama Prefectural University
Izumi, Shinsaku	Okayama Prefectural University
Yamasaki, Taiga	Okayama Prefectural University
Lin, Wei	Case Western Reserve University

11:40-12:00 ThA07.6

Optimal Stochastic Evasive Maneuvers Using the Schrodinger's Equation, pp. 3060-3065.

Farokhi, Farhad	University of Melbourne and CSIRO
Egerstedt, Magnus	Georgia Institute of Technology

ThA08 Méditerranée 3

Estimation and Control of PDE Systems IV (Invited Session)

Chair: Fahroo, Fariba	AFOSR
Co-Chair: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Demetriou, Michael A.	Worcester Polytechnic Institute
Organizer: Fahroo, Fariba	AFOSR
Organizer: Le Gorrec, Yann	Ensmm, Femto-St / As2m

10:00-10:20 ThA08.1

Adaptive Boundary Observer Design for a Class of Nonlinear Wave PDEs with Uncertain Domain and Boundary Parameters (I), pp. 3066-3071.

Benabdelhadi, Abdeljalil	Université Ibn Tofail, Kénitra
Giri, Fouad	University of Caen Normandie
Ahmed-Ali, Tarek	ENSICAEN
Krstic, Miroslav	University of California, San Diego
El Fadil, Hassan	Ibn Tofail University, Kénitra
Chaoui, F.Z.	ENSET

10:20-10:40 ThA08.2

Direct Adaptive Control of Non-Minimum Phase Linear Infinite-Dimensional Systems in Hilbert Space Using a Zero Dynamics Estimator (I), pp. 3072-3079.

Balas, Mark	Embry-Riddle Aeronautical University
Frost, Susan	NASA Ames Research Center

10:40-11:00 ThA08.3

ISS Synthesis of Parabolic Systems with Uncertain Parameters Using In-Domain Sensing and Actuation (I), pp. 3080-3085.

Orlov, Yury	CICESE
Autrique, Laurent	ISTIA - University of Angers
Perez, Laetitia	University of Nantes IUT

11:00-11:20 ThA08.4

Observer Design for a Coupled ODE-PDE System from a Wellbore Reservoir Drilling Model (I), pp. 3086-3091.

Camacho-Solorio, Leobardo	University of California, San Diego
Velmurugan, Naveen	MINES ParisTech
Di Meglio, Florent	MINES ParisTech
Krstic, Miroslav	University of California, San Diego

11:20-11:40 ThA08.5

Control Law Realification for the Feedback Stabilization of a Class of Diagonal Infinite-Dimensional Systems with Delay Boundary Control, pp. 3092-3097.

Lhachemi, Hugo	University College Dublin
Shorten, Robert	University College Dublin
Prieur, Christophe	CNRS

11:40-12:00 ThA08.6

Optimal Maintenance Design for a Simple Reparable System (I), pp. 3098-3103.

Hu, Weiwei	University of Georgia
Boardman, Nicki	Oklahoma State University
Mishra, Rohit	Oklahoma State University

ThA09 Méditerranée B12

Game Theory II (Regular Session)

Chair: Hayakawa, Tomohisa	Tokyo Institute of Technology
Co-Chair: Hohmann, Soeren	Karlsruhe Institute of Technology

10:00-10:20 ThA09.1

Learning Nash Equilibria in Monotone Games, pp. 3104-3109.

Tatarenko, Tatiana	TU Darmstadt
Kamgarpour, Maryam	ETH Zurich

10:20-10:40 ThA09.2

Cooperative Energy Scheduling for Microgrids under Peak Demand Energy Plans, pp. 3110-3115.

Valibeygi, Amir	University of California, San Diego
de Callafon, Raymond A.	University of California, San Diego

10:40-11:00 ThA09.3

Social Welfare Improvement for Noncooperative Dynamical Systems with Tax/Subsidy Approach, pp. 3116-3121.

Yan, Yuyue	Tokyo Institute of Technology
Hayakawa, Tomohisa	Tokyo Institute of Technology

11:00-11:20 ThA09.4

Stability Analysis of Nash Equilibrium in Loss-Aversion-Based Noncooperative Dynamical Systems, pp. 3122-3127.

Yan, Yuyue	Tokyo Institute of Technology
Hayakawa, Tomohisa	Tokyo Institute of Technology
Thanomvajamun, Nutthanun	Tokyo Institute of Technology

11:20-11:40 ThA09.5

Solution Sets for Inverse Non-Cooperative Linear-Quadratic Differential Games, pp. 3128-3133.

Inga, Jairo	Karlsruhe Institute of Technology
Bischoff, Esther	Karlsruhe Institute of Technology
Molloy, Timothy L.	Queensland University of Technology
Flad, Michael	Karlsruhe Institute of Technology
Hohmann, Soeren	Karlsruhe Institute of Technology

11:40-12:00 ThA09.6

Relative Best Response Dynamics in Finite and Convex Network Games, pp. 3134-3139.

Govaert, Alain	Rijksuniversiteit Groningen

Cenedese, Carlo	University of Groningen
Grammatico, Sergio	Delft University of Technology
Cao, Ming	University of Groningen

ThA10 Méditerranée C12

Novel Approaches to Traffic Estimation and Control Using Automated Vehicles (Invited Session)

Chair: Stern, Raphael	University of Minnesota
Co-Chair: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Organizer: Stern, Raphael	University of Minnesota
Organizer: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes

10:00-10:20 ThA10.1

Highway Traffic Control with Moving Bottlenecks of Connected and Automated Vehicles for Travel Time Reduction (I), pp. 3140-3145.

Piacentini, Giulia	University of Pavia
Ferrara, Antonella	University of Pavia
Papamichail, Ioannis	Technical University of Crete
Papageorgiou, Markos	Technical University of Crete

10:20-10:40 ThA10.2

Stop-And-Go Wave Dissipation Using Accumulated Controlled Moving Bottlenecks in Multi-Class CTM Framework (I), pp. 3146-3151.

Cicic, Mladen	KTH Royal Institute of Technology
Johansson, Karl H.	KTH Royal Institute of Technology

10:40-11:00 ThA10.3

Lagrangian Models for Controlling Large-Scale Heterogeneous Traffic (I), pp. 3152-3157.

Molnar, Tamas Gabor	University of Michigan
upadhyay, devesh	Ford
Hopka, Mike	Ford Motor Company
van Nieuwstadt, Michiel J.	Ford Research and Innovation Center
Orosz, Gabor	University of Michigan

11:00-11:20 ThA10.4

Conditions for Improving the Computational Efficiency of Decentralized Optimal Merging Controllers for Connected and Automated Vehicles, pp. 3158-3163.

Xiao, Wei	Boston University
Cassandras, Christos G.	Boston University

11:20-11:40 ThA10.5

Sample Average Approximation of CVaR-Based Wardrop Equilibrium in Routing under Uncertain Costs, pp. 3164-3169.

Cherukuri, Ashish	University of Groningen

11:40-12:00 ThA10.6

Analysis of a Stochastic Model for Coordinated Platooning of Heavy-Duty Vehicles, pp. 3170-3175.

Xiong, Xi	New York University
Xiao, Erdong	New York University
Jin, Li	New York University

ThA11 Galliéni 1

Estimation I (Regular Session)

Chair: Hjalmarsson, Håkan	KTH Royal Institute of Technology
Co-Chair: Ebenbauer, Christian	University of Stuttgart

10:00-10:20 ThA11.1

Interval Input-State-Output Estimation for Linear Port-Hamiltonian Systems with Application to Power Distribution Systems, pp. 3176-3183.

Pfeifer, Martin	Karlsruhe Institute of Technology
Krebs, Stefan	Karlsruhe Institute of Technology
Hofmann, Felix	Robert Bosch GmbH
Kupper, Martin	Karlsruhe Institute of Technology
Hohmann, Soeren	Karlsruhe Institute of Technology

10:20-10:40 ThA11.2

Toward Tractable Global Solutions to Maximum-Likelihood Estimation Problems Via Sparse Sum-Of-Squares Relaxations, pp. 3184-3189.

Rodrigues, Diogo	KTH Royal Institute of Technology
Abdalmoaty, Mohamed	KTH Royal Institute of Technology
Hjalmarsson, Håkan	KTH Royal Institute of Technology

10:40-11:00 ThA11.3

Dynamic Set-Inversion Procedure to Design Interval-Based State Estimators for Discrete-Time LPV Systems, pp. 3190-3195.

Krebs, Stefan	Institute of Control Systems, Karlsruhe Institute of Technology
Meslem, Nacim	GIPSA-LAB, CNRS
Hohmann, Soeren	Karlsruhe Institute of Technology

11:00-11:20 ThA11.4

Tuning-Free, Low Memory Robust Estimator to Mitigate GPS Spoofing Attacks, pp. 3196-3201.

Lee, Junhwan	University of Texas, San Antonio
Taha, Ahmad	University of Texas, San Antonio
Gatsis, Nikolaos	University of Texas, San Antonio
Akopian, David	University of Texas, San Antonio

11:20-11:40 ThA11.5

Ellipsoid-Based Interval Estimation for Takagi-Sugeno Fuzzy Systems, pp. 3202-3207.

Zhang, wenhan	School of Astronautics, Harbin Institute of Technology
Wang, Zhenhua	Harbin Institute of Technology
Raïssi, Tarek	Conservatoire National Des Arts Et Métiers
Shen, Yi	Harbin Institute of Technology
Zhang, Fengdi	Beijing Aerospace Automatic Control Institute
Xu, Min	Beijing Aerospace Automatic Control Institute

11:40-12:00 ThA11.6

Proximity Moving Horizon Estimation for Linear Time-Varying Systems and a Bayesian Filtering View, pp. 3208-3213.

Gharbi, Meriem	University of Stuttgart
Ebenbauer, Christian	University of Stuttgart

ThA12 Galliéni 2

Research and Development on Control for Fusion Facilities (Invited Session)

Chair: Vu, Ngoc Minh Trang	LCIS
Co-Chair: Nouailletas, Rémy	Cea - Irfm

Organizer: Nouailletas, Rémy	Cea - Irfm
Organizer: Vu, Ngoc Minh Trang	EPFL
Organizer: van Berkel, Matthijs	Dutch Institute for Fundamental Energy Research
Organizer: Pajares, Andres	Lehigh University
Organizer: Carnevale, Daniele	University of Roma
Organizer: Mameche, Hamza	CNRS GIPSA-LAB - University Grenoble Alpes

10:00-10:20 ThA12.1

WEST Magnetic Control (I), pp. 3214-3219.

Nouailletas, Rémy	Cea - Irfm
Nardon, Eric	CEA/IRFM
Moreau, Philippe	CEA Cadarache
Reux, Cédric	CEA
Truong, Tran-Phuc-Hai	CEA

10:20-10:40 ThA12.2

A Novel Frequency Domain Maximum Likelihood Approach for Estimating Transport Coefficients in Cylindrical Geometry for Nuclear Fusion Devices (I), pp. 3220-3226.

van Berkel, Matthijs	Dutch Institute for Fundamental Energy Research
Oosterwegel, Gerard	Eindhoven University of Technology
Anthonissen, Martijn	Eindhoven University of Technology
Zwart, Hans	University of Twente
Vandersteen, Gerd G.	Vrije University Brussels

10:40-11:00 ThA12.3

Nonlinear PDE-Based Control of the Electron Temperature in H-Mode Tokamak Plasmas (I), pp. 3227-3232.

Mameche, Hamza	University Grenoble Alpes
Witrant, Emmanuel	Université Grenoble Alpes
Prieur, Christophe	CNRS

11:00-11:20 ThA12.4

Integrated Robust Control of Individual Scalar Variables in Tokamaks (I), pp. 3233-3238.

Pajares, Andres	Lehigh University
Schuster, Eugenio	Lehigh University

11:20-11:40 ThA12.5

Nonlinear Adaptive Burn Control of Two-Temperature Tokamak Plasmas, pp. 3239-3244.

Graber, Vincent	Lehigh University
Schuster, Eugenio	Lehigh University

ThA13 Galliéni 4

Smart Grid I (Regular Session)

Chair: Lavaei, Javad	University of California, Berkeley
Co-Chair: Lestas, Ioannis	University of Cambridge

10:00-10:20 ThA13.1

Towards Robust and Scalable Power System State Estimation, pp. 3245-3252.

Jin, Ming	University of California, Berkeley
Molybog, Igor	University of California, Berkeley
Mohammadi Ghazi, Reza	University of California, Berkeley
Lavaei, Javad	University of California, Berkeley

10:20-10:40 ThA13.2

Frequency Regulation Using Sparse Learned Controllers in Power Grids with Variable Inertia Due to Renewable Energy, pp. 3253-3259.

Hidalgo-Gonzalez, Patricia	University of California, Berkeley
Henriquez-Auba, Rodrigo	University of California, Berkeley
Callaway, Duncan S.	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley

10:40-11:00 ThA13.3

Transactive Control Approach to Trip Optimization in Electric Railways, pp. 3260-3265.

D'Achiardi, David	Massachusetts Institute of Technology
Pilo de la Fuente, Eduardo	Universidad Francisco de Vitoria
Mazumder, Sudip	University of Illinois, Chicago
Annaswamy, Anuradha M.	Massachusetts Institute of Technology

11:00-11:20 ThA13.4

Model Predictive Control for Micro Grid Stabilisation in Case of Loss of Units, pp. 3266-3271.

K/BIDI, Fabrice	Université de La Réunion
Damour, Cédric	Université de La Réunion
Grondin, Dominique	Université de La Réunion
Hilairet, Mickael	Université de Franche-Comté
Benne, Michel	Université de La Réunion

11:20-11:40 ThA13.5

Chance-Constrained SPDS-Based Decentralized Control of Distributed Energy Resources, pp. 3272-3278.

Liu, Mingxi	University of Utah

11:40-12:00 ThA13.6

Frequency Regulation with Thermostatic Load Participation in Power Networks, pp. 3279-3284.

Kasis, Andreas	University of Cambridge
Lestas, Ioannis	University of Cambridge

ThA14 Galliéni 7

Lyapunov Methods IV (Regular Session)

Chair: Petersen, Ian R.	Australian National University
Co-Chair: Seeber, Richard	Graz University of Technology

10:00-10:20 ThA14.1

Guaranteeing Disturbance Rejection and Control Signal Continuity for the Saturated Super-Twisting Algorithm, pp. 3285-3290.

Seeber, Richard	Graz University of Technology
Horn, Martin	Graz University of Technology

10:20-10:40 ThA14.2

Optimal Lyapunov-Based Reaching Time Bounds for the Super-Twisting Algorithm, pp. 3291-3296.

Seeber, Richard	Graz University of Technology
Horn, Martin	Graz University of Technology

10:40-11:00 ThA14.3

Filter-Based Feedback Control for a Class of Markovian Open Quantum Systems, pp. 3297-3302.

Liu, Yanan	University of New South Wales
Dong, Daoyi	University of New South Wales
Petersen, Ian R.	Australian National University

Yonezawa, Hidehiro	University of New South Wales

11:00-11:20 ThA14.4

Distributed Observer Design for Omniscience Asymptotically Aimed at a Class of Nonlinear System, pp. 3303-3308.

Xu, Haotian	Shanghai Jiao Tong University
Wang, Jingcheng	Shanghai Jiao Tong University
Wang, Hongyuan	Shanghai Jiao Tong University
Wang, Bohui	Xidian University
Bai, Miaoshun	Shanghai Municipal Engineering Design Institute

11:20-11:40 ThA14.5

Enhanced State Feedback Control of T-S Fuzzy Systems with Time-Delays, pp. 3309-3315.

Lian, Zhi	University of Adelaide
He, Yong	China University of Geosciences
Zhang, Chuan-Ke	China University of Geosciences
Shi, Peng	University of Adelaide
Wu, Min	China University of Geosciences

11:40-12:00 ThA14.6

Integral Control Design Using the Implicit Lyapunov Function Approach, pp. 3316-3321.

Mercado Uribe, José Angel	Universidad Nacional Autonoma de Mexico
Moreno, Jaime A.	Universidad Nacional Autonoma de Mexico
Polyakov, Andrey	INRIA Lille Nord-Europe
Efimov, Denis	INRIA

ThA15 Rhodes GH

Optimal Control I (Regular Session)

Chair: Mareels, Iven	IBM
Co-Chair: Kerrigan, Eric C.	Imperial College London

10:00-10:20 ThA15.1

Reinforcement Learning for Adaptive Periodic Linear Quadratic Control, pp. 3322-3327.

Pang, Bo	New York University
Jiang, Zhong-Ping	New York University
Mareels, Iven	IBM

10:20-10:40 ThA15.2

Optimal Control of MIMO Input-Quadratic Nonlinear Systems, pp. 3328-3333.

Sassano, Mario	University of Rome, Tor Vergata
Astolfi, Alessandro	Imperial College & University of Rome

10:40-11:00 ThA15.3

A Min-Plus-SDDP Algorithm for Deterministic Multistage Convex Programming, pp. 3334-3339.

Akian, Marianne	INRIA and CMAP, Ecole Polytechnique CNRS
Chancelier, jean-philippe	ENPC
Tran, Benoît	Ecole Des Ponts ParisTech

11:00-11:20 ThA15.4

On the Optimal Control of Volterra Integro-Differential Equations, pp. 3340-3345.

Azhmyakov, Vadim	Universidad EAFIT
Egerstedt, Magnus	Georgia Institute of Technology
Verriest, Erik I.	Georgia Institute of Technology

11:20-11:40 ThA15.5

Characterization of the Game of Two Cars Using Reachable Sets for Feedback Strategies, pp. 3346-3351.

Chaudhari, Aditya	Indian Institute of Technology, Bombay
Chakraborty, Debraj	Indian Institute of Technology, Bombay

11:40-12:00 ThA15.6

External Constraint Handling for Solving Optimal Control Problems with Simultaneous Approaches and Interior Point Methods, pp. 3352-3357.

Nie, Yuanbo	Imperial College London
Kerrigan, Eric C.	Imperial College London

ThA16 Rhodes AB

Optimization IV (Regular Session)

Chair: Clark, Andrew	Worcester Polytechnic Institute
Co-Chair: Shames, Iman	University of Melbroune

10:00-10:20 ThA16.1

Inner Approximations of the Maximal Positively Invariant Set for Polynomial Dynamical Systems, pp. 3358-3363.

Oustry, Antoine	Ecole Polytechnique and RTE
Tacchi, Matteo	LAAS-CNRS and RTE
Henrion, Didier	LAAS-CNRS

10:20-10:40 ThA16.2

Online Optimisation Using Zeroth Order Oracles, pp. 3364-3369.

Shames, Iman	University of Melbroune
Selvaratnam, Daniel	University of Melbourne
Manton, Jonathan H.	University of Melbourne

10:40-11:00 ThA16.3

The FBstab Quadratic Programming Method Applied to Model Predictive Control: An Implicit Condensing Approach, pp. 3370-3376.

Liao-McPherson, Dominic	University of Michigan
Kolmanovsky, Ilya V.	University of Michigan

11:00-11:20 ThA16.4

Towards Redundant Constraint Removal in Scenario Approximation of Optimal Control Problems with Multiplicative Model Uncertainty, pp. 3377-3382.

Nasir, Hasan	National University of Sciences and Technology
Weyer, Erik	University of Melbourne
Shames, Iman	University of Melbroune
Cantoni, Michael	University of Melbourne

11:20-11:40 ThA16.5

A Submodular Optimization Approach to the Metric Traveling Salesman Problem with Neighborhoods, pp. 3383-3390.

Clark, Andrew	Worcester Polytechnic Institute

11:40-12:00 ThA16.6

Matroid-Constrained Approximately Supermodular Optimization for Near-Optimal Actuator Scheduling, pp. 3391-3398.

De Oliveira Chamon, Luiz Fernando	University of Pennsylvania
Amice, Alexandre	University of Pennsylvania

Ribeiro, Alejandro — University of Pennsylvania

ThA17 — Rhodes CD

Switched Systems IV (Regular Session)

Chair: Jungers, Raphaël M. — University of Louvain
Co-Chair: Daafouz, Jamal — Université de Lorraine, CRAN, CNRS

10:00-10:20 — ThA17.1

Polyhedral Path-Complete Lyapunov Functions, pp. 3399-3404.

Athanasopoulos, Nikolaos — Queen's University Belfast
Jungers, Raphaël M. — University of Louvain

10:20-10:40 — ThA17.2

Optimistic Planning for the Near-Optimal Control of Nonlinear Switched Discrete-Time Systems with Stability Guarantees, pp. 3405-3410.

Granzotto, Mathieu — CNRS, CRAN, Université de Lorraine
Postoyan, Romain — CNRS, CRAN, Université de Lorraine
Busoniu, Lucian — Technical University of Cluj-Napoca
Nesic, Dragan — University of Melbourne
Daafouz, Jamal — Université de Lorraine, CRAN, CNRS

10:40-11:00 — ThA17.3

A Nonlinear Switched Control Strategy for Permanent Magnet Synchronous Machines, pp. 3411-3416.

Egidio, Lucas N. — School of Mechanical Engineering, UNICAMP
Deaecto, Grace S. — FEM/UNICAMP
Hespanha, Joao P. — University of California, Santa Barbara
Geromel, Jose C. — UNICAMP

11:00-11:20 — ThA17.4

Worst-Case Optimal Data-Driven Estimators for Switched Discrete-Time Linear Systems, pp. 3417-3422.

Dai, Tianyu — Northeastern University
Sznaier, Mario — Northeastern University

11:20-11:40 — ThA17.5

A Controlled Murali-Lakshmanan-Chua Memristor Circuit to Mimic Neuron Dynamics, pp. 3423-3428.

Innocenti, Giacomo — University of Firenze
Di Marco, Mauro — University of Siena
Tesi, Alberto — University of Firenze
Forti, Mauro — University of Siena

11:40-12:00 — ThA17.6

Efficient Identification of Error-In-Variables Switched Systems Via a Sum-Of-Squares Polynomial Based Subspace Clustering Method, pp. 3429-3434.

Ozbay, Bengisu — Northeastern University
Camps, Octavia I. — Northeastern University
Sznaier, Mario — Northeastern University

ThA18 — Rhodes EF

Estimation and Observer Design in Nonlinear Systems (Invited Session)

Chair: Zemouche, Ali — CRAN UMR CNRS 7039 & INRIA: EPI-DISCO
Co-Chair: Rajamani, Rajesh — University of Minnesota
Organizer: Zemouche, Ali — CRAN UMR CNRS 7039 & INRIA: EPI-DISCO
Organizer: Rajamani, Rajesh — University of Minnesota

10:00-10:20 — ThA18.1

Luenberger Observers for Discrete-Time Nonlinear Systems (I), pp. 3435-3440.

Brivadis, Lucas — LAGEPP, Université Lyon 1
Andrieu, Vincent — Université de Lyon
Serres, Ulysse — Université Claude Bernard Lyon 1

10:20-10:40 — ThA18.2

Observer Design for Nonlinear Systems with Sampled and Transformed Measurements (I), pp. 3441-3446.

González de Cossío, Francisco — Université Claude Bernard Lyon 1
Nadri, Madiha — Université Claude Bernard Lyon 1
Dufour, Pascal — Université de Lyon, Université Claude Bernard Lyon 1, CNRS

10:40-11:00 — ThA18.3

Interval Observer Synthesis for Polytopic Systems and Conic Systems (I), pp. 3447-3452.

Tahir, Adam — University of Washington
Xu, Xiangru — University of Wisconsin-Madison
Acikmese, Behcet — University of Washington

11:00-11:20 — ThA18.4

An I&I Observer-Based Controller with Guaranteed Stability for Vehicles with Roll Dynamics, pp. 3453-3458.

Cisneros, Rafael — Instituto Tecnológico Autónomo de México
Romero, Jose Guadalupe — Instituto Tecnológico Autónomo de México
Ley-Rosas, Juan José — Cinvestav Gdl
Maghenem, Mohamed Adlene — University of California Santa Cruz

11:20-11:40 — ThA18.5

Unified Hinf Observer for a Class of Nonlinear Lipschitz Systems: Application to a Real ER Automotive Suspension, pp. 3459-3464.

PHAM, Thanh-Phong — University Grenoble Alpes, CNRS, Grenoble INP
Sename, Olivier — Grenoble INP / GIPSA-Lab
Dugard, Luc — CNRS

11:40-12:00 — ThA18.6

An Output Feedback Stabilizer for MIMO Nonlinear Systems with Uncertain Input Gain: Nonlinear Nominal Input Gain, pp. 3465-3470.

Ha, Wonseok — Kwangwoon University
Back, Juhoon — Kwangwoon University

ThA19 — Galliéni 5

Stochastic Systems II (Regular Session)

Chair: Tsiotras, Panagiotis — Georgia Institute of Technology
Co-Chair: Scarciotti, Giordano — Imperial College London

10:00-10:20 — ThA19.1

Sampling-Based Stability Evaluation with Second-Order Margins for Unknown Systems with Gaussian Processes, pp. 3471-3477.

Ito, Yuji	Toyota Central R&d Labs., Inc
Fujimoto, Kenji	Kyoto University
Tadokoro, Yukihiro	TOYOTA Central R&D Lab., Inc

10:20-10:40 ThA19.2

Control by Social Influence: Durables vs. Non-Durables, pp. 3478-3483.

Pradelski, Bary S. R.	Centre National de La Recherche Scientifique, France

10:40-11:00 ThA19.3

Nonlinear Uncertainty Control with Iterative Covariance Steering, pp. 3484-3490.

Ridderhof, Jack	Georgia Institute of Technology
Okamoto, Kazuhide	Georgia Institute of Technology
Tsiotras, Panagiotis	Georgia Institute of Technology

11:00-11:20 ThA19.4

Universal Feedback Controllers and Inverse Optimality for Nonlinear Stochastic Systems, pp. 3491-3496.

Haddad, Wassim M.	Georgia Institute of Technology
Jin, Xu	University of Kentucky

11:20-11:40 ThA19.5

Input Hard Constrained Optimal Covariance Steering, pp. 3497-3502.

Okamoto, Kazuhide	Georgia Institute of Technology
Tsiotras, Panagiotis	Georgia Institute of Technology

11:40-12:00 ThA19.6

Normal Form and Exact Feedback Linearisation of Nonlinear Stochastic Systems: The Ideal Case, pp. 3503-3508.

Mellone, Alberto	Imperial College London
Scarciotti, Giordano	Imperial College London

ThA20 Rhodes 10

Distributed Control I (Regular Session)

Chair: Chong, Michelle S.	KTH Royal Institute of Technology
Co-Chair: Casavola, Alessandro	University of Calabria

10:00-10:20 ThA20.1

On Second Order Consensus Protocols Allowing Joint-Agent Interactions, pp. 3509-3514.

Tesi, Alessandro	Technical University of Munich
Angeli, David	Imperial College

10:20-10:40 ThA20.2

Voltage Regulation of a Power Distribution Network in a Radial Configuration with a Class of Sector-Bounded Droop Controllers, pp. 3515-3520.

Chong, Michelle S.	KTH Royal Institute of Technology
Umsonst, David	KTH Royal Institute of Technology
Sandberg, Henrik	KTH Royal Institute of Technology

10:40-11:00 ThA20.3

Exponential and Practical Exponential Stability of Second-Order Formation Control Systems, pp. 3521-3526.

Suttner, Raik	University of Wuerzburg
Sun, Zhiyong	Lund University

11:00-11:20 ThA20.4

Plug-And-Play Distributed Supervision Schemes for Decoupled Interconnected Dynamical Systems, pp. 3527-3532.

Tedesco, Francesco	University of Calabria
Casavola, Alessandro	University of Calabria
Russo, Raffaele	University of Calabria

11:20-11:40 ThA20.5

Iterative Algorithms for Distributed Leader-Follower Model Predictive Control, pp. 3533-3539.

Ferraz, Henrique	University of California, Santa Barbara
Hespanha, Joao P.	University of California, Santa Barbara

11:40-12:00 ThA20.6

Hierarchical Model Decomposition for Distributed Design of Glocal Controllers, pp. 3540-3545.

Sasahara, Hampei	KTH Royal Institute of Technology
Ishizaki, Takayuki	Tokyo Institute of Technology
Imura, Jun-ichi	Tokyo Institute of Technology
Sandberg, Henrik	KTH Royal Institute of Technology
Johansson, Karl H.	KTH Royal Institute of Technology

ThA21 Risso 6

Networked Control Systems I (Regular Session)

Chair: Kibangou, Alain	University Grenoble Alpes
Co-Chair: Zhou, Tong	Tsinghua University, Beijing, 100084, CHINA

10:00-10:20 ThA21.1

Allocating Marketing Resources Over Social Networks: A Long-Term Analysis, pp. 3546-3551.

Satheeskumar Varma, Vineeth	CNRS
Lasaulce, Samson	Supelec Paris
Mounthanyvong, Julien	CentraleSupelec, Université Paris-Sud
Morarescu, Irinel-Constantin	CRAN, CNRS, Université de Lorraine

10:20-10:40 ThA21.2

Generic Delay-L Left Invertibility of Structured Systems with Scalar Unknown Input, pp. 3552-3556.

Garin, Federica	INRIA
Kibangou, Alain	University Grenoble Alpes

10:40-11:00 ThA21.3

Combined Flocking and Region-Based Shape Control for Multi-Agent Systems, pp. 3557-3562.

Fang, Wenxin	Nanjing University
Zhao, Jiabao	Nanjing University
Pan, Yuchen	Jinling High School, Nanjing

11:00-11:20 ThA21.4

a Novel Defense Strategy against Zero-Dynamics Attacks in Multi-Agent Systems, pp. 3563-3568.

Mao, Yanbing	Binghamton University-SUNY
Akyol, Emrah	SUNY Binghamton
Zhang, Ziang	Binghamton University

11:20-11:40 ThA21.5

A Distributed Algorithm That Finds Almost Best Possible Estimate under Non-Vanishing and Time-Varying Measurement Noise, pp. 3569-3574.

Lee, Jin Gyu	Seoul National University
Shim, Hyungbo	Seoul National University

11:40-12:00 ThA21.6

Topology and Subsystem Parameter Based Verification for the Controllability/Observability of a Networked Dynamic System, pp. 3575-3580.

Zhou, Tong — Tsinghua University, Beijing, 100084, CHINA

ThA22 — Risso 7

Identification IV (Regular Session)

Chair: Sato, Kazuhiro — Kitami Institute of Technology
Co-Chair: Weyer, Erik — University of Melbourne

10:00-10:20 ThA22.1

Confidence Regions for Parameters of Errors-In-Variables Systems Using Sign Perturbed Sums, pp. 3581-3586.

Moravej Khorasani, Masoud — University of Melbourne
Weyer, Erik — University of Melbourne

10:20-10:40 ThA22.2

Granger Causality of Gaussian Signals from Quantized Measurements, pp. 3587-3592.

Ahmadi, Salman — University of Melbourne, Australia
Nair, Girish N. — University of Melbourne
Weyer, Erik — University of Melbourne

10:40-11:00 ThA22.3

Riemannian Gradient-Based Online Identification Method for Linear Systems with Symmetric Positive-Definite Matrix, pp. 3593-3598.

Sato, Hiroyuki — Kyoto University
Sato, Kazuhiro — Kitami Institute of Technology

11:00-11:20 ThA22.4

Frequency Domain Maximum Likelihood Identification with Gaussian Input-Output Uncertainty, pp. 3599-3604.

Verbeke, Dieter — Vrije Universiteit Brussel
Moravej Khorasani, Masoud — Univesity of Melbourne

11:20-11:40 ThA22.5

Nonlinearity Measures for Data-Driven System Analysis and Control, pp. 3605-3610.

Martin, Tim — University of Stuttgart
Allgöwer, Frank — University of Stuttgart

11:40-12:00 ThA22.6

Construction Methods of the Nearest Positive System, pp. 3611-3616.

Sato, Kazuhiro — Kitami Institute of Technology
Takeda, Akiko — University of Tokyo

ThA23 — Risso 8

Machine Learning in Control, Theory and Applications I (Invited Session)

Chair: Gaudio, Joseph E. — Massachusetts Institute of Technology
Co-Chair: Dibaji, Seyed Mehran — Massachusetts Institute of Technology
Organizer: Gaudio, Joseph E. — Massachusetts Institute of Technology
Organizer: Dibaji, Seyed Mehran — Massachusetts Institute of Technology
Organizer: Gibson, Travis E. — Harvard Medical School
Organizer: Annaswamy, Anuradha M. — Massachusetts Institute of Technology

10:00-10:20 ThA23.1

Heterogeneous Formation Control of Multiple Rotorcrafts with Unknown Dynamics Using Reinforcement Learning (I), pp. 3617-3622.

Liu, Hao — Beihang University
Peng, Fachun — Beihang University
Modares, Hamidreza — Michigan State University
Kiumarsi, Bahare — University of Illinois, Urbana Champaign
Lewis, Frank L. — University of Texas, Arlington

10:20-10:40 ThA23.2

Nonparametric System Identification of Stochastic Switched Linear Systems (I), pp. 3623-3628.

Sarkar, Tuhin — Massachusetts Institute of Technology
Rakhlin, Alexander — University of Pennsylvania
Dahleh, Munther A. — Massachusetts Institute of Technology

10:40-11:00 ThA23.3

Decentralized Verification for Dissipativity of Cascade Interconnected Systems (I), pp. 3629-3634.

Kanellopoulos, Aris — Georgia Institute of Technology
Vamvoudakis, Kyriakos G. — Georgia Institute of Technology
Gupta, Vijay — University of Notre Dame

11:00-11:20 ThA23.4

Non-Bayesian Social Learning with Uncertain Models Over Time-Varying Directed Graphs (I), pp. 3635-3640.

Uribe, Cesar — Massachusetts Institute of Technology
Hare, James — Army Research Laboratory
Kaplan, Lance — Army Research Laboratory
Jadbabaie, Ali — MIT

11:20-11:40 ThA23.5

Secure Linear Quadratic Regulator Using Sparse Model-Free Reinforcement Learning (I), pp. 3641-3647.

Kiumarsi, Bahare — University of Illinois, Urbana Champaign
Basar, Tamer — University of Illinois, Urbana Champaign

11:40-12:00 ThA23.6

Finite Sample Analysis of Stochastic System Identification (I), pp. 3648-3654.

Tsiamis, Anastasios — University of Pennsylvania
Pappas, George J. — University of Pennsylvania

ThA24 — Hermès

Machine Learning I (Regular Session)

Chair: Vidyasagar, Mathukumalli — Indian Institute of Technology Hyderabad
Co-Chair: Paschalidis, Ioannis Ch. — Boston University

10:00-10:20 ThA24.1

A Distributionally Robust Optimization Approach for Multivariate Linear Regression under the Wasserstein Metric, pp. 3655-3660.

Chen, Ruidi — Boston University

Paschalidis, Ioannis Ch.	Boston University

10:20-10:40 ThA24.2

Deterministic Construction of Bipolar Matrices for Compressed Sensing, pp. 3661-3663.

Ranjan, Shashank	Indian Institute of Technology, Hyderabad, India
Vidyasagar, Mathukumalli	Indian Institute of Technology Hyderabad

10:40-11:00 ThA24.3

Convergence of Parameter Estimates for Regularized Mixed Linear Regression Models, pp. 3664-3669.

Wang, Taiyao	Boston University
Paschalidis, Ioannis Ch.	Boston University

11:00-11:20 ThA24.4

Deep Convolutional Networks in System Identification, pp. 3670-3676.

Andersson, Carl	Uppsala University
H. Ribeiro, Antônio	UFMG
Tiels, Koen	Uppsala University
Wahlström, Niklas	Uppsala University
Schön, Thomas (Bo)	Uppsala University

11:20-11:40 ThA24.5

An Information-Theoretic On-Line Learning Principle for Specialization in Hierarchical Decision-Making Systems, pp. 3677-3684.

Hihn, Heinke	Ulm University
Gottwald, Sebastian	Ulm University
Braun, Daniel	Ulm University

ThA25 Athéna

Multi-Agent Systems IV (Regular Session)

Chair: Franceschelli, Mauro	University of Cagliari
Co-Chair: Dimarogonas, Dimos V.	KTH Royal Institute of Technology

10:00-10:20 ThA25.1

Herding an Adversarial Swarm in an Obstacle Environment, pp. 3685-3690.

Chipade, Vishnu S.	University of Michigan, Ann Arbor
Panagou, Dimitra	University of Michigan, Ann Arbor

10:20-10:40 ThA25.2

Dynamic Consensus on the Median Value in Open Multi-Agent Systems, pp. 3691-3697.

Sanai Dashti, Zohreh Al Zahra	University of Cagliari
Seatzu, Carla	University of Cagliari
Franceschelli, Mauro	University of Cagliari

10:40-11:00 ThA25.3

Control Barrier Functions for Multi-Agent Systems under Conflicting Local Signal Temporal Logic Tasks, pp. 3698-3703.

Lindemann, Lars	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

11:00-11:20 ThA25.4

On a Two Cutters and Fugitive Ship Differential Game, pp. 3704-3709.

Pachter, Meir	AFIT/ENG
Wasz, Patrick	US Air Force

11:20-11:40 ThA25.5

Robust Containment Control in Multi-Agent Systems with Common Coordinate Frames and Bearing Angle Measurements, pp. 3710-3717.

Santilli, Matteo	University of Roma Tre
Franceschelli, Mauro	University of Cagliari
Gasparri, Andrea	University of Roma Tre

11:40-12:00 ThA25.6

Consensus of Heterogeneous Systems with Constraints in a Switching Network - a Governor Approach, pp. 3718-3723.

Ong, Chong-Jin	National University of Singapore
Djamari, Djati Wibowo	National University of Singapore

ThA26 Apollon

Self-Tuning and Reinforcement Learning (Tutorial Session)

Chair: Matni, Nikolai	University of Pennsylvania
Co-Chair: Rantzer, Anders	Lund University
Organizer: Matni, Nikolai	University of Pennsylvania
Organizer: Rantzer, Anders	Lund University

10:00-10:05 ThA26.1

*Introduction to Control Theory for Reinforcement Learning (I)**.

Rantzer, Anders	Lund University

10:05-10:35 ThA26.2

From Self-Tuning Regulators to Reinforcement Learning and Back Again (I), pp. 3724-3740.

Matni, Nikolai	University of Pennsylvania
Proutiere, Alexandre	KTH Royal Institute of Technology
Rantzer, Anders	Lund University
Tu, Stephen	University of California, Berkeley

10:35-11:05 ThA26.3

*Optimally Controlling Unknown Discrete Systems (I)**.

Proutiere, Alexandre	KTH Royal Institute of Technology

11:05-11:35 ThA26.4

*Optimization Based Approaches to Exploration/exploitation (I)**.

Rantzer, Anders	Lund University

11:35-12:00 ThA26.5

Concentration Bounds for System Identification (I), pp. 3741-3749.

Matni, Nikolai	University of Pennsylvania
Tu, Stephen	University of California, Berkeley

ThB01 Méditerranée 1

Biological Applications (Regular Session)

Chair: Rizzo, Alessandro	Politecnico di Torino
Co-Chair: Srivastava, Vaibhav	Michigan State University

14:00-14:20 ThB01.1

A Mathematical Framework for Modeling Propagation of Infectious Diseases with Mobile Individuals, pp. 3750-3755.

Possieri, Corrado	Politecnico di Torino
Rizzo, Alessandro	Politecnico di Torino

14:20-14:40 ThB01.2

A Grey-Box Identification Approach for a Human Alertness Model, pp. 3756-3761.

Lima, Marcelo	Instituto Mauá de Tecnologia

Romano, Rodrigo Alvite	Instituto Mauá de Tecnologia
Pait, Felipe	University Sao Paulo
Folkard, Simon	University Paris Descartes
Parro, Vanderlei	Escola de Engenharia Maua

14:40-15:00 ThB01.3

Model Predictive Control of the Blood Glucose Concentration for Critically Ill Patients in Intensive Care Units, pp. 3762-3769.

Reenberg, Asbjørn	Technical University of Denmark
Boiroux, Dimitri	Technical University of Denmark
Ritschel, Tobias Kasper Skovborg	2-Control ApS
Jorgensen, John Bagterp	Technical University of Denmark

15:00-15:20 ThB01.4

Modeling and Control of Measles Epidemic Spread with Immunodepressed Individuals and Possible Complications, pp. 3770-3775.

Iacoviello, Daniela	University of Rome La Sapienza
Di Giamberardino, Paolo	University of Roma La Sapienza

15:20-15:40 ThB01.5

Epidemic Spreading in Time-Varying Networks with Activity-Driven Infectivity, pp. 3776-3781.

Zhang, Yuan	Fudan University
Jian-Bo, Wang	Fudan University
Li, Cong	Fudan University
Li, Xiang	Fudan University

ThB02 Méditerranée 2

Linear Parameter-Varying Systems (Regular Session)

Chair: Petreczky, Mihaly	UMR CNRS 9189, Ecole Centrale de Lille
Co-Chair: Castelan, Eugenio B.	Universidade Federal de Santa Catarina

14:00-14:20 ThB02.1

Input-To-State Stabilization of Discrete-Time LPV Systems with Bounded Time-Varying State Delay and Saturating Actuators through a Dynamic Controller, pp. 3782-3787.

de Souza, Carla	Universidade Federal de Santa Catarina
Castelan, Eugenio B.	Universidade Federal de Santa Catarina
Leite, Valter J. S.	CEFET/MG - Campus Divinopolis

14:20-14:40 ThB02.2

State Estimation of LPV Discrete-Time Systems with Application to Output Feedback Stabilization, pp. 3788-3792.

Chaib Draa, Khadidja	Université du Luxembourg
Zemouche, Ali	CRAN UMR CNRS 7039 & INRIA: EPI-DISCO
Rajamani, Rajesh	University of Minnesota
Wang, Yan	University of Minnesota
Bedouhene, Fazia	University of Mouloud Mammeri, Tizi-Ouzou
Karimi, Hamid Reza	Politecnico di Milano
Laleg-Kirati, Taous-Meriem	King Abdullah University of Science and Technology (KAUST)

14:40-15:00 ThB02.3

Passivity Analysis of Rational LPV Systems Using Finsler's Lemma, pp. 3793-3798.

Polcz, Péter	Pázmány Péter Catholic University
Kulcsar, Balazs	Chalmers University of Technology
Peni, Tamas	MTA-SZTAKI
Szederkényi, Gábor	Computer and Automation Research Institute

15:00-15:20 ThB02.4

Decoupling Unknown Input Observer for Nonlinear Quasi-LPV Systems, pp. 3799-3804.

Ichalal, Dalil	Université d'Evry Val d'Essonne, IBISC Lab
Guerra, Thierry Marie	University of Valenciennes and Hainaut Cambresis

15:20-15:40 ThB02.5

Consistent and Computationally Efficient Estimation for Stochastic LPV State-Space Models: Realization Based Approach, pp. 3805-3810.

Mejari, Manas	IDSIA Dalle Molle Institute for Artificial Intelligence
Petreczky, Mihaly	UMR CNRS 9189, Ecole Centrale de Lille

ThB03 Méditerranée 5

Autonomous Systems I (Regular Session)

Chair: Baillieul, John	Boston University
Co-Chair: Chung, Soon-Jo	California Institute of Technology

14:00-14:20 ThB03.1

Trajectory Optimization for Chance-Constrained Nonlinear Stochastic Systems, pp. 3811-3818.

Nakka, Yashwanth Kumar	California Institute of Technology
Chung, Soon-Jo	California Institute of Technology

14:20-14:40 ThB03.2

Perceptual Control with Large Feature and Actuator Networks, pp. 3819-3826.

Baillieul, John	Boston University

14:40-15:00 ThB03.3

Intent-Aware Probabilistic Trajectory Estimation for Collision Prediction with Uncertainty Quantification, pp. 3827-3832.

Patterson, Andrew	University of Illinois
Lakshmanan, Arun	University of Illinois
Hovakimyan, Naira	University of Illinois

15:00-15:20 ThB03.4

Adaptive Leader-Follower Coordination of Lagrangian Multi-Agent Systems under Transient Constraints, pp. 3833-3838.

Verginis, Christos	Electrical Engineering, KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

15:20-15:40 ThB03.5

Resilient Trajectory Planning in Adversarial Environments, pp. 3839-3846.

Clark, Andrew	Worcester Polytechnic Institute
Li, Zhouchi	Worcester Polytechnic Institute

15:40-16:00 ThB03.6

Optimal Distance-Based Formation Producing Control of Multi-Agent Systems with Energy Constraints and Collision Avoidance, pp. 3847-3853.

Babazadeh, Reza	Concordia University

Selmic, Rastko — Concordia University

ThB04 — Méditerranée A2

Fault Tolerant Systems (Regular Session)

Chair: Zocca, Alessandro — California Institute of Technology
Co-Chair: He, Wei — University of Science and Technology Beijing

14:00-14:20 — ThB04.1

Resilient Control Design for Hybrid Systems against Switching and Data Injection Attacks, pp. 3854-3859.

Sun, Dawei — Purdue University Sch of Aero and Astro
Hwang, Inseok — Purdue University

14:20-14:40 — ThB04.2

Fault-Tolerant Control for a Vibrating Nanobeam System, pp. 3860-3864.

Yue, Xinling — University of Electronic Science and Technology of China
He, Xiuyu — University of Science and Technology Beijing
Liu, Jinkun — Beihang University
He, Wei — University of Science and Technology Beijing

14:40-15:00 — ThB04.3

Sensor Redundancy for Robustness in Nonlinear State Estimation, pp. 3865-3870.

Yang, Guitao — Imperial College London
Rezaee, Hamed — Imperial College London
Parisini, Thomas — Imperial College & University of Trieste

15:00-15:20 — ThB04.4

Less Is More: Real-Time Failure Localization in Power Systems, pp. 3871-3877.

Guo, Linqi — California Institute of Technology
Liang, Chen — California Institute of Technology
Zocca, Alessandro — California Institute of Technology
Low, Steven — California Institute of Technology
Wierman, Adam — California Institute of Technology

15:20-15:40 — ThB04.5

Secure Networked Control Via Software Rejuvenation, pp. 3878-3884.

Griffioen, Paul — Carnegie Mellon University
Romagnoli, Raffaele — Carnegie Mellon University
Krogh, Bruce H. — Carnegie Mellon Univ
Sinopoli, Bruno — Washington University in St Louis

15:40-16:00 — ThB04.6

Fallback Strategies in Operation Control of Microgrids with Communication Failures, pp. 3885-3891.

Loeser, Inga — Technische Universität Berlin, Germany
Sampathirao, Ajay Kumar — Technische Universität Berlin, Germany
Hofmann, Steffen — TU Berlin
Raisch, Joerg — Technical University Berlin

ThB05 — Méditerranée C4

Distributed Sensing, Control and Automation (Invited Session)

Chair: Yang, Tao — University of North Texas
Co-Chair: Ghosh, Bijoy — Texas Tech University
Organizer: Yang, Tao — Northeastern University
Organizer: Ghosh, Bijoy — Texas Tech University
Organizer: Wu, Junfeng — KTH Royal Institute of Technology

14:00-14:20 — ThB05.1

State Estimation under Stochastic Event-Triggering Conditions with Quantized-Level Energy-Harvesting Sensors (I), pp. 3892-3897.

Yu, Hao — University of Alberta
Hao, Fei — Beijing University of Aeronautics and Astronautics
Chen, Tongwen — University of Alberta

14:20-14:40 — ThB05.2

Efficient Linear Sensor Fusion Over Multiple Lossy Channels with Local Observability, pp. 3898-3903.

Wu, Yuchi — The Hong Kong University of Science and Technology
Li, Yuzhe — Northeastern University
Shi, Ling — Hong Kong University of Science and Technology

14:40-15:00 — ThB05.3

Observer-Based Leader-Follower Tracking Control for High-Order Multi-Agent Systems with Limited Measurement Information (I), pp. 3904-3909.

Yan, Chuan — University of Kansas
Fang, Huazhen — University of Kansas

15:00-15:20 — ThB05.4

Distributed Consensus-Based Kalman Filtering for Estimation with Multiple Moving Targets (I), pp. 3910-3915.

Lian, Bosen — University of Texas, Arlington
Wan, Yan — University of Texas, Arlington
Zhang, Ya — Southeast University
Liu, Mushuang — University of Texas, Arlington
Lewis, Frank L. — University of Texas, Arlington
Abad, Alexandra — Lockheed Martin
Setter, Tina — Lockheed Martin Advanced Technology Laboratories
Chai, Tianyou — Northeastern University

15:20-15:40 — ThB05.5

Gaussianity-Preserving Event-Based State Estimation with an FIR-Based Stochastic Trigger, pp. 3916-3921.

Schmitt, Eva Julia — TU Dresden
Noack, Benjamin — Karlsruhe Institute of Technology
Krippner, Wolfgang — Karlsruhe Institute of Technology
Hanebeck, Uwe D. — Karlsruhe Institute of Technology

15:40-16:00 — ThB05.6

Credibility of State and Friction Coefficient Estimation in Vehicle Dynamics Using UKF, pp. 3922-3927.

Wielitzka, Mark — Leibniz Universität Hannover
Ortmaier, Tobias — Leibniz Universität Hannover

ThB06 Méditerranée A3

Optimization Algorithms II (Regular Session)

Chair: Poveda, Jorge I. — University of Colorado, Boulder
Co-Chair: Quijano, Nicanor — Universidad de Los Andes

14:00-14:20 ThB06.1

A Second-Order Saddle Point Method for Time-Varying Optimization, pp. 3928-3935.

Tang, Yujie — Harvard University
Low, Steven — California Institute of Technology

14:20-14:40 ThB06.2

Gradient Based Restart FISTA, pp. 3936-3941.

Alamo, Teodoro — University of Seville
Krupa, Pablo — University of Seville
Limon, Daniel — University of Seville

14:40-15:00 ThB06.3

Local Convergence of Generalized Gauss-Newton and Sequential Convex Programming, pp. 3942-3947.

Diehl, Moritz — University of Freiburg
Messerer, Florian — University of Freiburg

15:00-15:20 ThB06.4

Multiway K-Cut in Static and Dynamic Graphs: A Maximum Entropy Principle Approach, pp. 3948-3953.

Baranwal, Mayank — University of Michigan
Srivastava, Amber — University of Illinois, Urbana Champaign
Salapaka, Srinivasa M. — University of Illinois, Urbana Champaign

15:20-15:40 ThB06.5

Hybrid Robust Optimal Resource Allocation with Momentum, pp. 3954-3959.

Ochoa, Daniel E. — University of Colorado, Boulder
Poveda, Jorge I. — University of Colorado, Boulder
Uribe, Cesar — Massachusetts Institute of Technology
Quijano, Nicanor — Universidad de Los Andes

15:40-16:00 ThB06.6

A Stochastic Interpretation of Stochastic Mirror Descent: Risk-Sensitive Optimality, pp. 3960-3965.

Azizan Ruhi, Navid — Caltech
Hassibi, Babak — Caltech

ThB07 Méditerranée A1

Robotics V (Regular Session)

Chair: Arioui, Hichem — Evry Val d'Essonne University
Co-Chair: Prandini, Maria — Politecnico di Milano

14:00-14:20 ThB07.1

Robustness of Periodic Orbits of Impulsive Systems À La Poincaré, pp. 3966-3971.

Veer, Sushant — Princeton University
Poulakakis, Ioannis — University of Delaware

14:20-14:40 ThB07.2

Realization of R-Robust Formations in the Plane Using Control Barrier Functions, pp. 3972-3977.

Guerrero-Bonilla, Luis — University of Pennsylvania
Kumar, Vijay — University of Pennsylvania

14:40-15:00 ThB07.3

An Admissible Heuristic to Improve Convergence in Kinodynamic Planners Using Motion Primitives, pp. 3978-3983.

Sakcak, Basak — Politecnico di Milano
Bascetta, Luca — Politecnico di Milano
Ferretti, Gianni — Politecnico di Milano
Prandini, Maria — Politecnico di Milano

15:00-15:20 ThB07.4

Robust Barrier Functions for a Fully Autonomous, Remotely Accessible Swarm-Robotics Testbed, pp. 3984-3990.

Emam, Yousef — Georgia Institute of Technology
Glotfelter, Paul — Georgia Institute of Technology
Egerstedt, Magnus — Georgia Institute of Technology

15:20-15:40 ThB07.5

Depth Estimation for a Point Feature: Structure from Motion & Stability Analysis, pp. 3991-3996.

Benyoucef, Rayane — Evry, Paris Saclay
Nehaoua, lamri — Evry Univeristy
Hadj-Abdelkader, Hicham — University of Evry - Paris Saclay
Arioui, Hichem — Evry Val d'Essonne University

15:40-16:00 ThB07.6

Designing Image-Based Control Systems Considering Workload Variations, pp. 3997-4004.

Mohamed, Sajid — Eindhoven University of Technology
Awan, Asad Ullah — Technical University of Munich
Goswami, Dip — Eindhoven University of Technology
Basten, Twan — Eindhoven University of Technology

ThB08 Méditerranée 3

Estimation and Control of PDE Systems V (Invited Session)

Chair: Demetriou, Michael A. — Worcester Polytechnic Institute
Co-Chair: Fahroo, Fariba — AFOSR
Organizer: Demetriou, Michael A. — Worcester Polytechnic Institute
Organizer: Fahroo, Fariba — AFOSR
Organizer: Le Gorrec, Yann — Ensmm, Femto-St / As2m

14:00-14:20 ThB08.1

Distributed Modeling of Structural Systems Based on Finite Element Methods with Application to an Actuated Beam (I), pp. 4005-4010.

Heinke, Simon — Hamburg University of Technology
Schug, Ann-Kathrin — Hamburg University of Technology
Werner, Herbert — Hamburg University of Technology

14:20-14:40 ThB08.2

Well-Posedness of Networked Scalar Semilinear Balance Laws Subject to Nonlinear Boundary Control Operators (I), pp. 4011-4016.

Tang, Shuxia — Texas Tech University
Keimer, Alexander — University of California, Berkeley
Bayen, Alexandre — University of California, Berkeley

14:40-15:00 ThB08.3

Performance Output Tracking and Robustness of Multi-Dimensional Heat Equation with Non-Collocated Control and Unmatched Disturbance (I), pp. 4017-4022.

Zhou, Hua-Cheng	Tel Aviv University
Guo, Bao-Zhu	The Chinese Academy of Sciences

15:00-15:20 ThB08.4

Nonlinear Feedback Control of a Class of Semilinear Parabolic PDEs (I), pp. 4023-4028.

Franco-de los Reyes, Hugo Andrés	Institute of Engineering, National Autonomous University of Mexico
Schaum, Alexander	Christian-Albrechts-University Kiel
Meurer, Thomas	Kiel University
Alvarez, Jesus	Autonomous Metropolitan University, Iztapalapa

15:20-15:40 ThB08.5

On Local Finite-Time Stabilization of the Viscous Burgers Equation Via Boundary Switched Linear Feedback (I), pp. 4029-4034.

Espitia, Nicolas	INRIA
Polyakov, Andrey	INRIA Lille Nord-Europe
Fridman, Emilia	Tel-Aviv University

15:40-16:00 ThB08.6

Enthalpy-Based Full-State Feedback Control of the Stefan Problem with Hysteresis (I), pp. 4035-4040.

Chen, Zhelin	University of Illinois
Bentsman, Joseph	University of Illinois
Thomas, Brian G.	Colorado School of Mines

ThB09 Méditerranée B12

Game Theory III (Regular Session)

Chair: Lamperski, Andrew	University of Minnesota
Co-Chair: Ye, Maojiao	Nanjing University of Science and Technology

14:00-14:20 ThB09.1

When Smoothness Is Not Enough: Toward Exact Quantification and Optimization of the Price-Of-Anarchy, pp. 4041-4046.

Chandan, Rahul	University of California, Santa Barbara
Paccagnan, Dario	University of California, Santa Barbara
Marden, Jason R.	University of California, Santa Barbara

14:20-14:40 ThB09.2

A RISE-Based Distributed Robust Nash Equilibrium Seeking Strategy for Networked Games, pp. 4047-4052.

Ye, Maojiao	Nanjing University of Science and Technology

14:40-15:00 ThB09.3

Learning Equilibria in Stochastic Information Flow Tracking Games with Partial Knowledge, pp. 4053-4060.

Misra, Shruti	University of Washington
Moothedath, Shana	University of Washington
Hosseini, Hossein	University of Washington
Allen, Joey	Georgia Institute of Technology
Bushnell, Linda	University of Washington
Lee, Wenke	Georgia Institute of Technology
Poovendran, Radha	University of Washington

15:00-15:20 ThB09.4

Zero-Sum Stochastic Games with Asymmetric Information, pp. 4061-4066.

Kartik, Dhruva	University of Southern California
Nayyar, Ashutosh	University of Southern California

15:20-15:40 ThB09.5

Construction of the Barrier for Reach-Avoid Differential Games in Three-Dimensional Space with Four Equal-Speed Players, pp. 4067-4072.

Yan, Rui	Tsinghua University
Shi, Zongying	Tsinghua University
Zhong, Yisheng	Tsinghua University

15:40-16:00 ThB09.6

Newton's Method and Differential Dynamic Programming for Unconstrained Nonlinear Dynamic Games, pp. 4073-4078.

Di, Bolei	University of Minnesota
Lamperski, Andrew	University of Minnesota

ThB10 Méditerranée C12

Control for Large Scale Traffic Networks (Invited Session)

Chair: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Co-Chair: Canudas de Wit, Carlos	CNRS, GIPSA-Lab
Organizer: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Organizer: Bekiaris-Liberis, Nikolaos	Technical University of Crete
Organizer: Canudas de Wit, Carlos	CNRS, GIPSA-Lab

14:00-14:20 ThB10.1

Model-Based Deep Reinforcement Learning for CACC in Mixed-Autonomy Vehicle Platoons (I), pp. 4079-4084.

Chu, Tianshu	Stanford University
Kalabic, Uros V.	Mitsubishi Electric Research Laboratories (MERL)

14:20-14:40 ThB10.2

Robust Tracking Control Design for Fluid Traffic Dynamics (I), pp. 4085-4090.

Tumash, Liudmila	CNRS, GIPSA-Lab
Canudas de Wit, Carlos	CNRS, GIPSA-Lab
Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes

14:40-15:00 ThB10.3

On Routing Drivers through Persuasion in the Long Run (I), pp. 4091-4096.

Zhu, Yixian	University of Southern California
Savla, Ketan	University of Southern California

15:00-15:20 ThB10.4

A Study on Minimum Time Regulation of a Bounded Congested Road with Upstream Flow Control (I), pp. 4097-4102.

Tang, Shuxia	Texas Tech University
Keimer, Alexander	University of California, Berkeley
Goatin, Paola	INRIA
Bayen, Alexandre	University of California, Berkeley

15:20-15:40 ThB10.5

Optimal Tolling for Heterogeneous Traffic Networks with Mixed Autonomy, pp. 4103-4108.

Lazar, Daniel	University of California, Santa Barbara
Coogan, Samuel	Georgia Institute of Technology
Pedarsani, Ramtin	UCSB

15:40-16:00 ThB10.6

Behavior and Management of Stochastic Multiple-Origin-Destination Traffic Flows Sharing a Common Link, pp. 4109-4114.

Jin, Li	New York University
Wen, Yining	New York University

ThB11 Galliéni 1

Estimation II (Regular Session)

Chair: Farina, Francesco	University of Bologna
Co-Chair: Jauberthie, Carine	LAAS-CNRS

14:00-14:20 ThB11.1

Adaptive Input Estimation in Linear Dynamical Systems with Applications to Learning-From-Observations, pp. 4115-4120.

Curi, Sebastian Martin	ETH Zürich
Levy, Kfir. Y.	ETH Zürich
Krause, Andreas	ETH Zurich

14:20-14:40 ThB11.2

Distributed Set Membership Estimation with Time-Varying Graph Topology, pp. 4121-4126.

Farina, Francesco	University of Bologna
Garulli, Andrea	University of Siena
Giannitrapani, Antonio	University of Siena

14:40-15:00 ThB11.3

Unique Maximum Likelihood Localization of Nuclear Sources, pp. 4127-4132.

Anderson, Brian D.O.	Australian National University/NICTA
Dasgupta, Soura	University of Iowa
Baidoo-Williams, Henry Ernest	Amazon
Anjum, Md Fahim	University of Iowa
Mudumbai, Raghuraman	University of Iowa

15:00-15:20 ThB11.4

Distributed Secure State Estimation Using Diffusion Kalman Filters and Reachability Analysis, pp. 4133-4139.

Alanwar, Amr	Technische Universität München
Said, Hazem	Ain Shams University
Althoff, Matthias	Technische Universität München

15:20-15:40 ThB11.5

Zero-Order Moving Horizon Estimation, pp. 4140-4146.

Baumgärtner, Katrin	University of Freiburg
Zanelli, Andrea	University of Freiburg
Diehl, Moritz	University of Freiburg

15:40-16:00 ThB11.6

Optimal Experiment Design for Bounded-Error Estimation of Nonlinear Models, pp. 4147-4154.

Denis-Vidal, Lilianne	University of Compiegne
Jauberthie, Carine	LAAS-CNRS
Kieffer, Michel	Université Paris-Sud

ThB12 Galliéni 2

Communication Networks (Regular Session)

Chair: Malabre, Michel	CNRS
Co-Chair: Chen, Wei	Hong Kong University of Science and Technology

14:00-14:20 ThB12.1

Learning Arrival Rates to Improve Common Information Based Multiple Access Protocol, pp. 4155-4160.

Vasal, Deepanshu	University of Michigan, Ann Arbor

14:20-14:40 ThB12.2

Stabilizability of Discrete-Time SISO System Using MIMO Communication, pp. 4161-4165.

Srazhidinov, Radik	Hong Kong University of Science and Technology
Chen, Wei	Hong Kong University of Science and Technology
Qiu, Li	Hong Kong University of Science and Technology

14:40-15:00 ThB12.3

UAV Trajectory Planning for Delay Tolerant Communications, pp. 4166-4171.

Bonilla Licea, Daniel	Université Internationale de Rabat
Bonilla, Moises E.	CINVESTAV-IPN
Ghogho, Mounir	International University of Rabat
Malabre, Michel	CNRS-UMR6004-CD0962

15:00-15:20 ThB12.4

Efficient Consensus-Based Formation Control with Discrete-Time Broadcast Updates, pp. 4172-4177.

Molinari, Fabio	Technical University Berlin
Raisch, Joerg	Technical University Berlin

15:20-15:40 ThB12.5

Stochastic Control with Stale Information--Part I: Fully Observable Systems, pp. 4178-4182.

Soleymani, Touraj	KTH Royal Institute of Technology
Baras, John S.	University of Maryland
Johansson, Karl H.	KTH Royal Institute of Technology

15:40-16:00 ThB12.6

Theory and Implementation of Event-Triggered Stabilization Over Digital Channels (I), pp. 4183-4188.

Khojasteh, Mohammad Javad	University of California, San Diego
Hedayatpour, Mojtaba	DOT Technology Corporation
Franceschetti, Massimo	University of California, San Diego

ThB13 Galliéni 4

Control and Demand Response in Smart Grids (Invited Session)

Chair: Dvorkin, Yury	New York University
Co-Chair: Deka, Deepjyoti	Los Alamos National Lab
Organizer: Dvorkin, Yury	New York University
Organizer: Deka, Deepjyoti	Los Alamos National Lab

14:00-14:20 ThB13.1

A Tractable Formulation for Multi-Period Linearized Optimal Power Flow in Presence of Thermostatically Controlled Loads (I), pp. 4189-4194.

Benenati, Emilio	ETH Zürich
Colombino, Marcello	McGill University
Dall'Anese, Emiliano	University of Colorado, Boulder

14:20-14:40 ThB13.2

Kullback-Leibler-Quadratic Optimal Control of Flexible Power Demand (I), pp. 4195-4201.

Cammardella, Neil — University of Florida
Busic, Ana — INRIA
Ji, Yuting — Stanford University
Meyn, Sean P. — University of Florida

14:40-15:00 ThB13.3

Mitigation of Coincident Peak Charges Via Approximate Dynamic Programming (I), pp. 4202-4207.

Dowling, Chase — University of Washington
Zhang, Baosen — University of Washington

15:00-15:20 ThB13.4

Aggregate Capacity for TCLs Providing Virtual Energy Storage with Cycling Constraints (I), pp. 4208-4215.

Coffman, Austin — University of Florida
Busic, Ana — INRIA
Barooah, Prabir — University of Florida

15:20-15:40 ThB13.5

Optimal Strategic Pricing Attacks in Smart Grids: A Dynamic Programming Approach, pp. 4216-4221.

El Chamie, Mahmoud — United Technologies Research Center
Ren, Lingyu — United Technologies Research Center
Manikantan Shila, Devu — United Technologies Research Center

15:40-16:00 ThB13.6

A Distributionally Robust Joint Chance Constraint Approach to Smart Charging of Plug-In Electric Vehicles, pp. 4222-4227.

Casini, Marco — University of Siena
Vicino, Antonio — University of Siena
Zanvettor, Giovanni Gino — University of Siena

ThB14 — Galliéni 7

Nonlinear Feedback (Regular Session)

Chair: Mahony, Robert — Australian National University,
Co-Chair: Khorrami, Farshad — NYU Tandon School of Engineering

14:00-14:20 ThB14.1

Asymptotic Tracking Via Funnel Control, pp. 4228-4233.

Lee, Jin Gyu — University of Cambridge
Trenn, Stephan — University of Groningen

14:20-14:40 ThB14.2

Interconnection through U-Average Passivity in Discrete Time, pp. 4234-4239.

Moreschini, Alessio — University of Roma La Sapienza
Mattioni, Mattia — University of Roma La Sapienza
Monaco, Salvatore — University of Roma La Sapienza
Normand-Cyrot, Dorothée — CNRS

14:40-15:00 ThB14.3

Adaptive Output-Feedback Prescribed-Time Stabilization of Uncertain Nonlinear Strict-Feedback-Like Systems, pp. 4240-4245.

Krishnamurthy, Prashanth — NYU Tandon School of Engineering
Khorrami, Farshad — NYU Tandon School of Engineering
Krstic, Miroslav — University of California, San Diego

15:00-15:20 ThB14.4

Oracle-Based Economic Predictive Control, pp. 4246-4251.

Manzano, Jose Maria — Universidad de Sevilla
nadales, Juan — Universidad de Sevilla
Muñoz de la Peña, David — Universidad de Sevilla
Limon, Daniel — Universidad de Sevilla

15:20-15:40 ThB14.5

A Lyapunov-Based Approach to Exploit Asymmetries in Robotic Dual-Arm Task Resolution, pp. 4252-4258.

Rodrigues Marcal de Almeida, Diogo — KTH Royal Institute of Technology, EECS, RPL
Karayiannidis, Yiannis — Chalmers Univeristy of Technology

15:40-16:00 ThB14.6

A Novel Passivity-Based Trajectory Tracking Control for Conservative Mechanical Systems, pp. 4259-4266.

Mahony, Robert — Australian National University,

ThB15 — Rhodes GH

Optimal Control II (Regular Session)

Chair: Jorgensen, John Bagterp — Technical University of Denmark
Co-Chair: Hendrickx, Julien M. — Université Catholique de Louvain

14:00-14:20 ThB15.1

Reduced Order Modeling for Nonlinear PDE-Constrained Optimization Using Neural Networks, pp. 4267-4272.

Mücke, Nikolaj Takata — Technical University of Denmark
Hjuler Christiansen, Lasse — Technical University of Denmark
Engsig-Karup, Allan Peter — Technical University of Denmark
Jorgensen, John Bagterp — Technical University of Denmark

14:20-14:40 ThB15.2

Torque Control of a Hydrostatic Transmission Applied to a Wheel Loader, pp. 4273-4279.

Zips, Patrik — AIT Austrian Institute of Technology
Lobe, Amadeus Cosimo — Center for Vision, Automation & Control, AIT Austrian Institute
Trachte, Adrian — Robert Bosch GmbH
Kugi, Andreas — Vienna University of Technology

14:40-15:00 ThB15.3

Optimal Multi-Agent Persistent Monitoring of the Uncertain State of a Finite Set of Targets, pp. 4280-4285.

Pinto, Samuel C. — Boston University
Andersson, Sean B. — Boston University
Hendrickx, Julien M. — Université Catholique de Louvain
Cassandras, Christos G. — Boston University

15:00-15:20 ThB15.4

Robust Moment-Based Energy-Maximising Optimal Control of Wave Energy Converters, pp. 4286-4291.

Faedo, Nicolás — Centre for Ocean Energy Research, Maynooth University
García Violini, Demián — Centre for Ocean Energy Research, Maynooth Univeristy
Scarciotti, Giordano — Imperial College London

Astolfi, Alessandro	Imperial College & University of Rome
Ringwood, John V.	NUI Maynooth, Ireland

15:20-15:40 ThB15.5

Consistent Approximation of Optimal Control Problems Using Bernstein Polynomials, pp. 4292-4297.

Cichella, Venanzio	University of Iowa
Kaminer, Isaac	Naval Postgraduate School
Walton, Claire	Naval Postgraduate School, Monterey, CA
Hovakimyan, Naira	University of Illinois, Urbana Champaign
Pascoal, Antonio Manuel	Inst. Superior Tecnico

15:40-16:00 ThB15.6

On LP Formulations of Optimal Control Problems with Time Averaging and Time Discounting Criteria in Non-Ergodic Case, pp. 4298-4303.

Borkar, Vivek S.	Indian Institute of Technology
Gaitsgory, Vladimir	Macquarie University
Shvartsman, Ilya	Penn State Harrisburg

ThB16 Rhodes AB

Numerical Methods for Real-Time Model Predictive Control I (Invited Session)

Chair: Kerrigan, Eric C.	Imperial College London
Co-Chair: Nie, Yuanbo	Imperial College London
Organizer: McInerney, Ian	Imperial College London
Organizer: Kerrigan, Eric C.	Imperial College London
Organizer: Nie, Yuanbo	Imperial College London

14:00-14:20 ThB16.1

An Iterative Horizon-Splitting Method for Model Predictive Control (I), pp. 4304-4310.

Deng, Haoyang	Kyoto University
Ohtsuka, Toshiyuki	Kyoto University

14:20-14:40 ThB16.2

Alternating Direction of Multipliers Method for Block Circulant Model Predictive Control (I), pp. 4311-4316.

Kempf, Idris	University of Oxford
Goulart, Paul J.	University of Oxford
Duncan, Stephen	University of Oxford

14:40-15:00 ThB16.3

Exact Complexity Certification of a Standard Primal Active-Set Method for Quadratic Programming (I), pp. 4317-4324.

Arnström, Daniel	Linköping University
Axehill, Daniel	Linköping University

15:00-15:20 ThB16.4

QPALM: A Newton-Type Proximal Augmented Lagrangian Method for Quadratic Programs (I), pp. 4325-4330.

Hermans, Ben	Katholieke Universiteit Leuven
Themelis, Andreas	Katholieke Universiteit Leuven
Patrinos, Panagiotis	Katholieke Universiteit Leuven

15:20-15:40 ThB16.5

Modeling Round-Off Error in the Fast Gradient Method for Predictive Control (I), pp. 4331-4336.

McInerney, Ian	Imperial College London
Kerrigan, Eric C.	Imperial College London
Constantinides, George A.	Imperial College London

15:40-16:00 ThB16.6

A Hamiltonian Decomposition-Based Splitting Method for Interior Point Solvers in Model Predictive Control (I), pp. 4337-4342.

Poupard, Eduardo	Festo AG & Co.KG
Heath, William Paul	University of Manchester
Güttel, Stefan	University of Manchester

ThB17 Rhodes CD

Formal Verification and Synthesis I (Regular Session)

Chair: Zamani, Majid	University of Colorado Boulder
Co-Chair: Sadraddini, Sadra	Massachusetts Institute of Technology

14:00-14:20 ThB17.1

Dynamic Quantization Based Symbolic Abstractions for Nonlinear Control Systems, pp. 4343-4348.

Ren, Wei	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

14:20-14:40 ThB17.2

Approximately Symbolic Models for a Class of Continuous-Time Nonlinear Systems, pp. 4349-4354.

Yu, Pian	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

14:40-15:00 ThB17.3

Controller Synthesis for Nonlinear Systems with Reachability Specifications Using Monotonicity, pp. 4355-4360.

Sinyakov, Vladimir	CNRS
Girard, Antoine	CNRS

15:00-15:20 ThB17.4

Control from Signal Temporal Logic Specifications with Smooth Cumulative Quantitative Semantics, pp. 4361-4366.

Haghighi, Iman	Boston University
Mehdipour, Noushin	Boston University
Bartocci, Ezio	Vienna University of Technology
Belta, Calin	Boston University

15:20-15:40 ThB17.5

Linear Encodings for Polytope Containment Problems, pp. 4367-4372.

Sadraddini, Sadra	Massachusetts Institute of Technology
Tedrake, Russ	Massachusetts Institute of Technology

15:40-16:00 ThB17.6

Verification of Switched Stochastic Systems Via Barrier Certificates, pp. 4373-4378.

Anand, Mahathi	Ludwig Maximilian University of Munich
Jagtap, Pushpak	Technical University of Munich
Zamani, Majid	University of Colorado, Boulder

ThB18 Rhodes EF

Security in Cyber-Physical Systems I (Invited Session)

Chair: Ren, Xiaoqiang	KTH
Co-Chair: Sinopoli, Bruno	Washington University in St Louis
Organizer: Ren, Xiaoqiang	Shanghai University

Organizer: Mo, Yilin	Tsinghua University
Organizer: Sinopoli, Bruno	Washington University in St Louis
Organizer: Johansson, Karl H.	KTH Royal Institute of Technology

14:00-14:20 ThB18.1

A Network Monitoring Game with Heterogeneous Component Criticality Levels (I), pp. 4379-4384.

Milosevic, Jezdimir	KTH Royal Institute of Technology
Dahan, Mathieu	Georgia Institute of Technology
Amin, Saurabh	Massachusetts Institute of Technology
Sandberg, Henrik	KTH Royal Institute of Technology

14:20-14:40 ThB18.2

Optimal Stealthy Attacks on Actuators for Strictly Proper Systems, pp. 4385-4390.

Teixeira, André M. H.	Uppsala University

14:40-15:00 ThB18.3

Attack Resilient Interconnected Second Order Systems: A Game-Theoretic Approach, pp. 4391-4396.

Pirani, Mohammad	KTH Royal Institute of Technology
Taylor, Joshua A.	University of Toronto
Sinopoli, Bruno	Washington University in St Louis

15:00-15:20 ThB18.4

Secure Navigation of Robots in Adversarial Environments, pp. 4397-4402.

Bianchin, Gianluca	University of California, Riverside
Liu, Yin-Chen	University of California, RIverside
Pasqualetti, Fabio	University of California, Riverside

15:20-15:40 ThB18.5

On the Design of Security-Guaranteeing Dynamic Watermarks, pp. 4403-4408.

Satchidanandan, Bharadwaj	Texas A&M University
Kumar, P. R.	Texas A&M University

15:40-16:00 ThB18.6

Risk and Security Tradeoffs in Graphical Coordination Games, pp. 4409-4414.

Paarporn, Keith	University of California, Santa Barbara
Alizadeh, Mahnoosh	University of California Santa Barbara
Marden, Jason R.	University of California, Santa Barbara

ThB19 Galliéni 5

Stochastic Systems III (Regular Session)

Chair: Wisniewski, Rafal	Aalborg University
Co-Chair: Ossareh, Hamid	University of Vermont

14:00-14:20 ThB19.1

Mean Stability of a Class of Two-Time-Scale Markov Jump Linear Systems, pp. 4415-4420.

dos Santos, Felipe Otávio	National Laboratory for Scientific Computing-LNCC
Todorov, Marcos	LNCC
Fragoso, Marcelo	Lncc / Mct

14:20-14:40 ThB19.2

Robustness Margins for Continuous-Time Markov Jump Linear Systems with Uncertain Transition Rates, pp. 4421-4426.

Dos Santos, Dayana Cristine	National Laboratory for Scientific Computing - LNCC
Todorov, Marcos	LNCC
Fragoso, Marcelo	Lncc / Mct

14:40-15:00 ThB19.3

Semi-Parametric Uncertainty Bounds for Binary Classification, pp. 4427-4432.

Csáji, Balázs	SZTAKI
Tamás, Ambrus	Institute for Computer Science and Control, Hungarian Academy Of

15:00-15:20 ThB19.4

New Insights on P-Safety of Stochastic Systems, pp. 4433-4438.

Bujorianu, Luminita Manuela	University of Strathclyde
Wisniewski, Rafal	Aalborg University

15:20-15:40 ThB19.5

Lyapunov Exponent of Rank One Matrices: Ergodic Formula and Inapproximability of the Optimal Distribution, pp. 4439-4445.

Altschuler, Jason	MIT
Parrilo, Pablo A.	Massachusetts Institute of Technology

15:40-16:00 ThB19.6

Quasilinear Control of Feedback Systems with Multivariate Nonlinearities, pp. 4446-4452.

Brahma, Sarnaduti	University of Vermont
Ossareh, Hamid	University of Vermont

ThB20 Rhodes 10

Distributed Control II (Regular Session)

Chair: Zelazo, Daniel	Technion - Israel Institute of Technology
Co-Chair: Mylvaganam, Thulasi	Imperial College London

14:00-14:20 ThB20.1

Price Control for Heterogeneous Thermostatically Controlled Loads in Communication and Computation Delay Environments, pp. 4453-4458.

Zou, Suli	Beijing Institute of Technology
chen, zhe	EPFL
Lygeros, John	ETH Zurich

14:20-14:40 ThB20.2

Maximum Hands-Off Distributed Bearing-Based Formation Control, pp. 4459-4464.

Ikeda, Takuya	Kyoto University
Zelazo, Daniel	Technion - Israel Institute of Technology
Kashima, Kenji	Kyoto University

14:40-15:00 ThB20.3

Robust Nonlinear Consensus Seeking, pp. 4465-4470.

Stankovic, Srdjan S.	University of Belgrade
Beko, Marko	COPELABS, Universidade Lusófona de Humanidades e Tecnologias
Stankovic, Milos S.	Vlatacom Institute Ltd

15:00-15:20 ThB20.4

Distributed LQR Design for Identical Dynamically Coupled Systems: Application to Load Frequency Control of Multi-Area Power Grid, pp. 4471-4476.

Vlahakis, Eleftherios	City, University of London
Dritsas, Leonidas	ASPETE
Halikias, George	City University

15:20-15:40 ThB20.5

A Game Theoretic Framework for Distributed Control of Multi-Agent Systems with Acyclic Communication Topologies, pp. 4477-4482.

Cappello, Domenico	Imperial College London
Mylvaganam, Thulasi	Imperial College London

15:40-16:00 ThB20.6

Output-Feedback Formation Tracking of Second-Order Multi-Agent Systems with Asynchronous Variable Sampled Data, pp. 4483-4488.

Ajwad, Syed Ali	Université de Poitiers
Moulay, Emmanuel	Université de Poitiers
Defoort, Michael	UVHC
Menard, Tomas	University of Caen
Coirault, Patrick	ENSIP-LIAS

ThB21 Risso 6

Networked Control Systems II (Regular Session)

Chair: Altafini, Claudio	Linkoping University
Co-Chair: Knorn, Steffi	Uppsala University

14:00-14:20 ThB21.1

The Effect of Uniform Quantization on Parameter Estimation of Compound Distributions, pp. 4489-4494.

Seifullaev, Ruslan	Uppsala University
Knorn, Steffi	Uppsala University
Ahlen, Anders	Uppsala University

14:20-14:40 ThB21.2

Distributed Robust Optimal Filter Design Over Sensor Networks with Data Packet Dropouts, pp. 4495-4500.

Feng, Yu	Zhejiang University of Technology
Chen, Zhuoming	Zhejiang University of Technology

14:40-15:00 ThB21.3

A Dynamical Approach to Privacy Preserving Average Consensus, pp. 4501-4506.

Altafini, Claudio	Linkoping University

15:00-15:20 ThB21.4

Determination of Security Index for Linear Cyber-Physical Systems Subject to Malicious Cyber Attacks, pp. 4507-4513.

Baniamerian, Amir	Concordia University
Khorasani, Khashayar	Concordia University
Meskin, Nader	Qatar University

15:20-15:40 ThB21.5

Networked Control of Coupled Subsystems: Spectral Decomposition and Low-Dimensional Solutions, pp. 4514-4520.

Gao, Shuang	McGill University
Mahajan, Aditya	McGill University

15:40-16:00 ThB21.6

Finite Time Semistability and Consensus in Networks with Communication Uncertainty, pp. 4521-4526.

Haddad, Wassim M.	Georgia Institute of Technology
Rajpurohit, Tanmay	Georgia Institute of Technology
Jin, Xu	University of Kentucky

ThB22 Risso 7

Theoretical Foundations for the Representation and Identification of Dynamic Networks I (Invited Session)

Chair: Van den Hof, Paul M.J.	Eindhoven University of Technology
Co-Chair: Warnick, Sean	Brigham Young University
Organizer: Van den Hof, Paul M.J.	Eindhoven University of Technology
Organizer: Warnick, Sean	Brigham Young University

14:00-14:20 ThB22.1

On Random Matrix Theory and Autoregressive Modeling (I), pp. 4527-4532.

Solo, Victor	University of New South Wales

14:20-14:40 ThB22.2

A Dynamic Network Approach to Identification of Physical Systems (I), pp. 4533-4538.

Kivits, E.M.M. (Lizan)	Eindhoven University of Technology
Van den Hof, Paul M.J.	Eindhoven University of Technology

14:40-15:00 ThB22.3

Network Stability, Realisation and Random Model Generation (I), pp. 4539-4544.

Yue, Zuogong	University of New South Wales
Thunberg, Johan	Halmstad University
Goncalves, Jorge	University of Luxembourg

15:00-15:20 ThB22.4

Corruption Detection in Networks of Bi-Directional Dynamical Systems, pp. 4545-4550.

Subramanian, Venkat Ram	University of Minnesota
Lamperski, Andrew	University of Minnesota
Salapaka, Murti V.	University of Minnesota

15:20-15:40 ThB22.5

Sensor Placement Strategies for Some Classes of Nonlinear Dynamic Systems Via Lyapunov Theory, pp. 4551-4556.

Nugroho, Sebastian Adi	University of Texas, San Antonio
Taha, Ahmad	University of Texas, San Antonio

15:40-16:00 ThB22.6

Strong Structural Controllability of Signed Networks, pp. 4557-4562.

Mousavi, Shima Sadat	Sharif University of Technology
Haeri, Mohammad	Sharif University of Technology
Mesbahi, Mehran	University of Washington

ThB23 Risso 8

Machine Learning in Control, Theory and Applications II (Invited Session)

Chair: Annaswamy, Anuradha M.	Massachusetts Institute of Technology
Co-Chair: Gibson, Travis E.	Harvard Medical School
Organizer: Gaudio, Joseph E.	Massachusetts Institute of

	Technology
Organizer: Dibaji, Seyed Mehran	Massachusetts Institute of Technology
Organizer: Gibson, Travis E.	Harvard Medical School
Organizer: Annaswamy, Anuradha M.	Massachusetts Institute of Technology

14:00-14:20 ThB23.1

Connections between Adaptive Control and Optimization in Machine Learning (I), pp. 4563-4568.

Gaudio, Joseph E.	Massachusetts Institute of Technology
Gibson, Travis E.	Harvard Medical School
Annaswamy, Anuradha M.	Massachusetts Institute of Technology
Bolender, Michael	Air Force Research Laboratory
Lavretsky, Eugene	The Boeing Co.

14:20-14:40 ThB23.2

Shared Linear Quadratic Regulation Control: A Reinforcement Learning Approach (I), pp. 4569-4576.

Abu-Khalaf, Murad	Massachusetts Institute of Technology
Karaman, Sertac	Massachusetts Institute of Technology
Rus, Daniela	MIT

14:40-15:00 ThB23.3

Robust Model-Free Learning and Control without Prior Knowledge (I), pp. 4577-4582.

Ho, Dimitar	Caltech
Doyle, John C.	Caltech

15:00-15:20 ThB23.4

Optimal Delay Assignment in Delay-Aware Control of Cyber-Physical Systems: A Machine Learning Approach, pp. 4583-4588.

Pauli, Patricia	Universität Stuttgart
Dibaji, Seyed Mehran	Massachusetts Institute of Technology
Annaswamy, Anuradha M.	Massachusetts Institute of Technology
Chakrabortty, Aranya	North Carolina State University

15:20-15:40 ThB23.5

Cause Mining and Controller Synthesis with STL, pp. 4589-4594.

Saglam, Irmak	Middle East Technical University
Aydin Gol, Ebru	Middle East Technical University

15:40-16:00 ThB23.6

A Learning Framework for Versatile STL Controller Synthesis, pp. 4595-4600.

Varnai, Peter	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

ThB24 Hermès

Machine Learning II (Regular Session)

Chair: Peet, Matthew M.	Arizona State University
Co-Chair: alimo, shahrouz	NASA Jet Propulsion Laboratory (JPL)

14:00-14:20 ThB24.1

Deep Model Reference Adaptive Control, pp. 4601-4608.

Joshi, Girish	University of Illinois, Urbana Champaign
Chowdhary, Girish	University of Illinois, Urbana Champaign

14:20-14:40 ThB24.2

Transforming Policy Via Reward Advancement, pp. 4609-4614.

Wu, Guojun	WPI
Li, Yanhua	Worcester Polytechnic Institute (WPI)
Luo, Jun	Shenzhen Institutes of Advanced Technology

14:40-15:00 ThB24.3

Inferring Particle Interaction Physical Models and Their Dynamical Properties, pp. 4615-4621.

Matei, Ion	Palo Alto Research Center
Mavridis, Christos	University of Maryland
Baras, John S.	University of Maryland
Zhenirovskyy, Maksym	Palo Alto Research Center

15:00-15:20 ThB24.4

Using SDP to Parameterize Universal Kernel Functions, pp. 4622-4629.

Colbert, Brendon	Arizona State University
Peet, Matthew M.	Arizona State University

15:20-15:40 ThB24.5

Risk-Averse Explore-Then-Commit Algorithms for Finite-Time Bandits, pp. 4630-4635.

Yekkehkhany, Ali	University of Illinois, Urbana Champaign
Arian, Ebrahim	University of Illinois, Urbana Champaign
Hajiesmaili, Mohammad	University of Massachusetts, Amherst
Nagi, Rakesh	University of Illinois, Urbana Champaign

15:40-16:00 ThB24.6

Delaunay-Based Derivative-Free Optimization Via Global Surrogates with Safe and Exact Function Evaluations, pp. 4636-4641.

Zhao, Muhan	University of California, San Diego
Alimo, Shahrouz	NASA Jet Propulsion Laboratory (JPL)
Beyhaghi, Pooriya	University of California, San Diego
Bewley, Thomas	University of California, San Diego

ThB25 Athéna

Decentralized Control (Regular Session)

Chair: Fridman, Emilia	Tel-Aviv University
Co-Chair: Cannon, Mark	University of Oxford

14:00-14:20 ThB25.1

Decentralized Predictor Feedback of Large-Scale Systems under Input Delays, pp. 4642-4647.

Zhu, Yang	Zhejiang University
Fridman, Emilia	Tel-Aviv University

14:20-14:40 ThB25.2

A Port-Hamiltonian Approach to Plug-And-Play Voltage and Frequency Control in Islanded Inverter-Based AC Microgrids, pp. 4648-4655.

Strehle, Felix	Karlsruhe Institute of Technology
Malan, Albertus Johannes	Karlsruhe Institute of Technology
Krebs, Stefan	Karlsruhe Institute of Technology
Hohmann, Soeren	Karlsruhe Institute of Technology

14:40-15:00 ThB25.3

When Does a Multi-Channel Linear System Have a Structurally Fixed Spectrum?, pp. 4656-4661.

Liu, Fengjiao	Yale University
Morse, A. Stephen	Yale Univ

15:00-15:20 ThB25.4

Convex Symmetric Stochastic Dynamic Teams and Their Mean-Field Limit, pp. 4662-4667.

Sanjari, Seyed Sina	Queen's University
Yuksel, Serdar	Queen's University

15:20-15:40 ThB25.5

On Feasible Sets for Coalitional MPC, pp. 4668-4673.

Baldivieso Monasterios, Pablo Rodolfo	University of Sheffield
Trodden, Paul Anthony	University of Sheffield
Cannon, Mark	University of Oxford

15:40-16:00 ThB25.6

Distributed Off-Policy Actor-Critic Reinforcement Learning with Policy Consensus, pp. 4674-4679.

Zhang, Yan	Duke University
Zavlanos, Michael M.	Duke University

ThB26 Apollon

Autonomous Vehicles and Traffic Control in Mixed Autonomy Environments (Tutorial Session)

Chair: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Co-Chair: Sprinkle, Jonathan	University of Arizona
Organizer: Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Organizer: Sprinkle, Jonathan	University of Arizona
Organizer: Vasudevan, Ramanarayan	University of Michigan
Organizer: Work, Daniel B.	Vanderbilt University

16:30-16:35 ThB26.1

Autonomous Vehicles: From Vehicular Control to Traffic Control (I), pp. 4680-4696.

Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes
Sprinkle, Jonathan	University of Arizona
Vasudevan, Ramanarayan	University of Michigan
Work, Daniel B.	Vanderbilt University

16:35-17:05 ThB26.2

*Techniques for Online Verification of Autonomous Vehicle Control (I)**.

Vasudevan, Ramanarayan	University of Michigan

17:05-17:35 ThB26.3

*Realistic Control & Sensing for Autonomous Vehicles (I)**.

Sprinkle, Jonathan	University of Arizona

17:35-18:05 ThB26.4

*Traffic Modeling (I)**.

Delle Monache, Maria Laura	INRIA Grenoble Rhône - Alpes

18:05-18:30 ThB26.5

*Eulerian to Lagrangian Traffic Estimation & Control (I)**.

Work, Daniel B.	Vanderbilt University

ThC01 Méditerranée 1

Control Theory in Neuroscience (Invited Session)

Chair: Singh, Abhyudai	University of Delaware
Co-Chair: Pequito, Sergio	Rensselaer Polytechnic Institute
Organizer: Singh, Abhyudai	University of Delaware
Organizer: Chaillet, Antoine	CentraleSupélec
Organizer: Jafarian, Matin	KTH Royal Institute of Technology

16:30-16:50 ThC01.1

A Framework to Control Functional Connectivity in the Human Brain (I), pp. 4697-4704.

Menara, Tommaso	University of California, Riverside
Baggio, Giacomo	University of California, Riverside
Bassett, Danielle	University of Pennsylvania
Pasqualetti, Fabio	University of California, Riverside

16:50-17:10 ThC01.2

A Separation Principle for Discrete-Time Fractional-Order Dynamical Systems and Its Implications to Closed-Loop Neurotechnology, pp. 4705-4710.

Chatterjee, Sarthak	Rensselaer Polytechnic Institute
Romero, Orlando	Rensselaer Polytechnic Institute
Pequito, Sergio	Rensselaer Polytechnic Institute

17:10-17:30 ThC01.3

Synchronization of Quadratic Integrate-And-Fire Spiking Neurons: Constant versus Voltage-Dependent Couplings, pp. 4711-4716.

Jafarian, Matin	KTH Royal Institute of Technology
Johansson, Karl H.	KTH Royal Institute of Technology

17:30-17:50 ThC01.4

On Phase Reduction and Time Period of Noisy Oscillators (I), pp. 4717-4722.

Aminzare, Zahra	University of Iowa
Holmes, Philip	Princeton University
Srivastava, Vaibhav	Michigan State University

17:50-18:10 ThC01.5

The Sensitivity Function of Excitable Feedback Systems (I), pp. 4723-4728.

Franci, Alessio	Universidad Nacional Autónoma de Mexico
Drion, Guillaume	Montefiore Institute
Sepulchre, Rodolphe	University of Cambridge

18:10-18:30 ThC01.6

Modeling and Characterization of Neuronal Synapses Using Stochastic Hybrid Systems (I), pp. 4729-4734.

Vahdat, Zahra	University of Delaware
Xu, Zikai	University of Delaware
Singh, Abhyudai	University of Delaware

ThC02 Méditerranée 2

Control Applications (Regular Session)

Chair: Rapaport, Alain	U. Montpellier, INRA, Montpellier SupAgro

Co-Chair: Julius, Agung — Rensselaer Polytechnic Institute

16:30-16:50 — ThC02.1

Periodic Controls for Discriminating Density Dependent Growth in the Chemostat, pp. 4735-4740.

Tani, Fatima Zahra — Université de Montpellier
Rapaport, Alain — U. Montpellier, INRA, Montpellier SupAgro
Bayen, Térence — Université de Montpellier

16:50-17:10 — ThC02.2

Indicator of Alarm Risk on Product Degradation, Prediction for Alarms Grouping, Using Alarms Data in Semiconductor Manufacturing, pp. 4741-4746.

AL-KHARAZ, Mohammed — Laboratoire d'Informatique Et Systèmes (LIS) - Aix Marseille Uni
Ananou, Bouchra — LSIS
Ouladsine, Mustapha — Université D'aix Marseille III
Combal, Michel — ST Microelectronics
Pinaton, Jacques — STMicroelectronics

17:10-17:30 — ThC02.3

Nonlinear Model Predictive Control with Explicit Back-Offs for Gaussian Process State Space Models, pp. 4747-4754.

Bradford, Eric — Norwegian University of Science and Technology
Imsland, Lars — Norwegian University of Science and Technology
Del Rio Chanona, Antonio — Imperial College London

17:30-17:50 — ThC02.4

Parameter Identifiability in a Novel Kinetic Adsorption Isotherm for Multi-Modal Chromatography, pp. 4755-4760.

Cebulla, Dominik H. — TU Braunschweig
Kirches, Christian — Technical University of Braunschweig
Potschka, Andreas — Heidelberg

17:50-18:10 — ThC02.5

Graph Temporal Logic Inference for Classification and Identification, pp. 4761-4768.

Xu, Zhe — University of Texas, Austin
Nettekoven, Alexander — University of Texas, Austin
Julius, Agung — Rensselaer Polytechnic Institute
Topcu, Ufuk — University of Texas, Austin

18:10-18:30 — ThC02.6

Identification of Outliers in Graph Signals, pp. 4769-4776.

Gopalakrishnan, Karthik — Massachusetts Institute of Technology
Li, Max — Massachusetts Institute of Technology
Balakrishnan, Hamsa — Massachusetts Institute of Technology

ThC03 — Méditerranée 5

Autonomous Systems II (Regular Session)

Chair: Xue, Wenchao — Academy of Mathematics and Systems Science, Chinese Academy of Sciences
Co-Chair: Bopardikar, Shaunak D. — Michigan State University

16:30-16:50 — ThC03.1

Navigation of a Quadratic Potential with Ellipsoidal Obstacles, pp. 4777-4784.

Kumar, Harshat — University of Pennsylvania
Paternain, Santiago — University of Pennsylvania
Ribeiro, Alejandro — University of Pennsylvania

16:50-17:10 — ThC03.2

Consensus Control for Leader-Follower Multi-Agent Systems under Prescribed Performance Guarantees, pp. 4785-4790.

Chen, Fei — KTH
Dimarogonas, Dimos V. — KTH Royal Institute of Technology

17:10-17:30 — ThC03.3

On Active Disturbance Rejection Based Path Following Control for Unmanned Roller, pp. 4791-4796.

Chen, Sen — Academy of Mathematics and Systems Science, Chinese Academy of S
Song, Kang — Tianjin University
Zhao, Longtong — Tianjin University
Xue, Wenchao — Academy of Mathematics and Systems Science, Chinese Academy of S
Xie, Hui — Tianjin University
Huang, Yi — Chinese Academy of Sciences

17:30-17:50 — ThC03.4

Safe Policy Synthesis in Multi-Agent POMDPs Via Discrete-Time Barrier Functions, pp. 4797-4803.

Ahmadi, Mohamadreza — California Institute of Technology
Singletary, Andrew — Georgia Institute of Technology
Burdick, Joel W. — California Institute of Technology
Ames, Aaron D. — California Institute of Technology

17:50-18:10 — ThC03.5

Dynamic Boundary Guarding against Radially Incoming Targets, pp. 4804-4809.

Bajaj, Shivam — Michigan State University
Bopardikar, Shaunak D. — Michigan State University

18:10-18:30 — ThC03.6

Reachability-Based Safety Guarantees Using Efficient Initializations, pp. 4810-4816.

Herbert, Sylvia — University of California, Berkeley
Bansal, Somil — University of California, Berkeley
Ghosh, Shromona — University of California, Berkeley
Tomlin, Claire J. — University of California, Berkeley

ThC04 — Méditerranée A2

Fuzzy Systems and Evolutionary Computing (Regular Session)

Chair: Campos, Victor — Universidade Federal de Minas Gerais
Co-Chair: Chadli, Mohammed — Université de Picardie-Jules Verne

16:30-16:50 — ThC04.1

Vehicle Sideslip Angle Estimation Based on Switched Fuzzy Model, pp. 4817-4822.

Zhang, Qian — Harbin Institute of Technology
Liu, Zhiyuan — Harbin Institute of Technology
Gu, mingqin — Alibaba Group
zhao, chunming — Alibaba Group
Jia, Fengjiao — Harbin Institute of Technology

16:50-17:10 ThC04.2

Local Stability Analysis and Estimation of Domains of Attraction for Nonlinear Systems Via Takagi-Sugeno Fuzzy Modeling, pp. 4823-4828.

Gomes, Izabella O.	University of Campinas
Tognetti, Eduardo Stockler	University of Brasilia
Oliveira, Ricardo C. L. F.	University of Campinas - UNICAMP
Peres, Pedro L. D.	University of Campinas

17:10-17:30 ThC04.3

Simultaneous Estimation of State and Unknown Input with L_∞ Guarantee on Error-Bounds for Fuzzy Descriptor Systems, pp. 4829-4834.

Nguyen, Anh-Tu	Université Polytechnique Des Hauts-De-France
Guerra, Thierry Marie	University of Valenciennes and Hainaut Cambresis
Campos, Victor	Universidade Federal de Minas Gerais

17:30-17:50 ThC04.4

Development of Dynamic Multi-Objective Feature Extraction Optimization Method to Detect M/OD Impact Damages, pp. 4835-4840.

Xue, Ting	School of Automation Engineering, University of Electronic Scien
Yin, Chun	University of Electronic Science and Technology of China
Huang, Xuegang	Aerodynamics Institute, China Aerodynamics Research and Developm
Dadras, Sara	Ford Motor Company
Cheng, Yuhua	University of Electronic Science and Technology of China
Dadras, Soodeh	Utah State University

17:50-18:10 ThC04.5

On the Particle Swarm Optimization Improvement Using Time Delay Auto Synchronization, pp. 4841-4846.

Tomaszek, Lukas	VSB-TU Ostrava
Zelinka, Ivan	VSB-TU Ostrava
Chadli, Mohammed	University of Paris-Saclay

18:10-18:30 ThC04.6

A Proposal of the "Group Egogram" for Group Work Aptitude Analysis, pp. 4847-4851.

Matsuki, Hiroto	National Institute of Technology, Kumamoto College
Ohki, Makoto	National Institute of Technology, Kumamoto College

ThC05 Méditerranée C4

Energy Systems (Regular Session)

Chair: Diehl, Moritz	University of Freiburg
Co-Chair: Almassalkhi, Mads	University of Vermont

16:30-16:50 ThC05.1

An Adaptive Passivity-Based Controller for a Wind Energy Conversion System, pp. 4852-4857.

Cisneros, Rafael	Instituto Tecnológico Autónomo de México
Gao, Rui	North Carolina State University
Ortega, Romeo	LSS-SUPELEC
Husain, Iqbal	University of Akron

16:50-17:10 ThC05.2

Convex Inner Approximation of the Feeder Hosting Capacity Limits on Dispatchable Demand, pp. 4858-4864.

Nazir, Nawaf	University of Vermont
Almassalkhi, Mads	University of Vermont

17:10-17:30 ThC05.3

Optimal Control of Stacked Multi-Kite Systems for Utility-Scale Airborne Wind Energy, pp. 4865-4870.

De Schutter, Jochem	ALU Freiburg
Leuthold, Rachel	University of Freiburg
Bronnenmeyer, Thilo	Kiteswarms GmbH
Paelinck, Reinhart	Kiteswarms Ltd
Diehl, Moritz	University of Freiburg

17:30-17:50 ThC05.4

Optimal Design and Management of a Hybrid Energy Storage System, pp. 4871-4876.

Kim, Eugene	University of Michigan
Shin, Kang G.	University of Michigan

17:50-18:10 ThC05.5

Optimal Control for Scheduling and Pricing Intra-Day Natural Gas Transport on Pipeline Networks, pp. 4877-4884.

Zlotnik, Anatoly	Los Alamos National Laboratory
Sundar, Kaarthik	Los Alamos National Laboratory
Rudkevich, Alexandr	Newton Energy Group
Beylin, Alexandr	Newton Energy Group
Li, Xindi	Tabors Caramanis Rudkevich

18:10-18:30 ThC05.6

Fuzzy-Variable Gain Super Twisting Algorithm Control Design for Direct-Drive PMSG Wind Turbines, pp. 4885-4890.

Benzaouia, Soufyane	LGEM - Université Mohamed Premier - Oujda / MIS - Université De
Rabhi, Abdelhamid	MIS
Zouggar, Smail	University Mohammed First Oujda

ThC06 Méditerranée A3

Optimization Algorithms III (Regular Session)

Chair: Cucuzzella, Michele	University of Groningen
Co-Chair: Hu, Guoqiang	Nanyang Technological University

16:30-16:50 ThC06.1

QPDAS: Dual Active Set Solver for Mixed Constraint Quadratic Programming, pp. 4891-4897.

Fält, Mattias	Lund University
Giselsson, Pontus	Lund University

16:50-17:10 ThC06.2

On the Performance of Exact Diffusion Over Adaptive Networks, pp. 4898-4903.

Yuan, Kun	University of California, Los Angeles
Alghunaim, Sulaiman A.	University of California, Los Angeles
Ying, Bicheng	University of California, Los Angeles
Sayed, Ali H.	EPFL

17:10-17:30 ThC06.3

Charging Plug-In Electric Vehicles As a Mixed-Integer Aggregative Game, pp. 4904-4909.

Cenedese, Carlo	University of Groningen
Fabiani, Filippo	Delft University of Technology
Cucuzzella, Michele	University of Groningen
Scherpen, Jacquelien M.A.	University of Groningen
Cao, Ming	University of Groningen
Grammatico, Sergio	Delft University of Technology

17:30-17:50 ThC06.4

Randomized Gradient-Free Distributed Online Optimization with Time-Varying Objective Functions, pp. 4910-4915.

Pang, Yipeng	Nanyang Technological University
Hu, Guoqiang	Nanyang Technological University

17:50-18:10 ThC06.5

Chordal Decomposition in Rank Minimized Semidefinite Programs with Applications to Subspace Clustering, pp. 4916-4921.

Miller, Jared	Northeastern University
Zheng, Yang	University of Oxford
Roig-Solvas, Biel	Northeastern University
Sznaier, Mario	Northeastern University
Papachristodoulou, Antonis	University of Oxford

18:10-18:30 ThC06.6

SPSA Method Using Diagonalized Hessian Estimate, pp. 4922-4927.

Sun, Shiqing	Johns Hopkins University
Spall, James C.	Johns Hopkins Univ

ThC07 Méditerranée A1

Aerospace (Regular Session)

Chair: Invernizzi, Davide	Politecnico di Milano
Co-Chair: louembet, christophe	LAAS-CNRS

16:30-16:50 ThC07.1

Sliding Mode Control Applied to a Multivariate Underactuated Control Moment Gyroscope, pp. 4928-4933.

Toriumi, Fabio	Polytechnic School of University of São Paulo
Angelico, Bruno	University of Sao Paulo

16:50-17:10 ThC07.2

Impulsive Zone Model Predictive Control for Rendezvous Hovering Phase, pp. 4934-4939.

Louembet, Christophe	LAAS-CNRS
González, Alejandro H.	CONICET-Universidad Nacional Del Litoral
Arantes Gilz, Paulo Ricardo	LAAS-CNRS

17:10-17:30 ThC07.3

Time-Varying Radome Slope Estimation for Passive Homing Anti-Ship Missiles, pp. 4940-4945.

Ra, Won-Sang	Agency for Defense Development
Ahn, Sejoon	Agency for Defense Development
Lee Yunha	Cranfield University
Whang, Ick Ho	The Agency for Defense Development

17:30-17:50 ThC07.4

Sum-Of-Norms Model Predictive Control for Spacecraft Maneuvering, pp. 4946-4951.

Leomanni, Mirko	University of Siena
Bianchini, Gianni	University of Siena
Garulli, Andrea	University of Siena
Giannitrapani, Antonio	University of Siena
Quartullo, Renato	University of Siena

17:50-18:10 ThC07.5

Integral ISS-Based Cascade Stabilization for Vectored-Thrust UAVs, pp. 4952-4957.

Invernizzi, Davide	Politecnico di Milano
Lovera, Marco	Politecnico di Milano
Zaccarian, Luca	LAAS-CNRS and University of Trento

18:10-18:30 ThC07.6

Sliding Mode Fault Tolerant Control Allocation with Saturation Avoidance for a Blended Wing Body Aircraft, pp. 4958-4963.

Vile, Liam	University of Exeter
Alwi, Halim	University of Exeter
Edwards, Christopher	University of Exeter

ThC08 Méditerranée 3

Distributed Parameter Systems I (Regular Session)

Chair: Auriol, Jean	University of Calgary
Co-Chair: Polyakov, Andrey	INRIA Lille Nord-Europe

16:30-16:50 ThC08.1

Delay-Robust Stabilization of a Hyperbolic PDE-ODE System, pp. 4964-4970.

Auriol, Jean	University of Calgary
Bribiesca Argomedo, Federico	Université de Lyon, INSA Lyon, CNRS, Ampère

16:50-17:10 ThC08.2

On the Ball-Marsden-Slemrod Obstruction for Bilinear Control Systems, pp. 4971-4976.

Boussaïd, Nabile	Université de Franche-Comté
Caponigro, Marco	Conservatoire National Des Arts Et Métiers
Chambrion, Thomas	Université de Bourgogne

17:10-17:30 ThC08.3

A Maximum Principle-Based Approach for Input-To-State Stability Analysis of Parabolic Equations with Boundary Disturbances, pp. 4977-4983.

Zheng, Jun	Southwest Jiaotong University
Zhu, Guchuan	Ecole Polytechnique de Montreal

17:30-17:50 ThC08.4

Direct Predictive Boundary Control of a First-Order Quasilinear Hyperbolic PDE, pp. 4984-4989.

Strecker, Timm	University of Melbourne
Aamo, Ole Morten	NTNU
Cantoni, Michael	University of Melbourne

17:50-18:10 ThC08.5

Characterization of Finite/Fixed-Time Stability of Evolution Inclusions, pp. 4990-4995.

Polyakov, Andrey	INRIA Lille Nord-Europe

18:10-18:30 ThC08.6

Strictly Proper Control Design for the Stabilization of 2x2

Linear Hyperbolic ODE-PDE-ODE Systems, pp. 4996-5001.

Bou Saba, David	INSA de Lyon
Bribiesca Argomedo, Federico	Université de Lyon, INSA Lyon, CNRS, Ampère
Di Loreto, Michael	INSA Lyon
Eberard, Damien	Université de Lyon, INSA Lyon

ThC09 Méditerranée B12

Game Theory IV (Regular Session)

Chair: Marden, Jason R.	University of California, Santa Barbara
Co-Chair: Margellos, Kostas	University of Oxford

16:30-16:50 ThC09.1

Robustness of Stochastic Learning Dynamics to Player Heterogeneity in Games, pp. 5002-5007.

Jaleel, Hassan	Lahore University of Management Sciences
Abbas, Waseem	Vanderbilt University
Shamma, Jeff S.	King Abdullah University of Science and Technology (KAUST)

16:50-17:10 ThC09.2

Utilizing Information Optimally to Influence Distributed Network Routing, pp. 5008-5013.

Ferguson, Bryce L.	University of California, Santa Barbara
Brown, Philip N.	University of Colorado, Colorado Springs
Marden, Jason R.	University of California, Santa Barbara

17:10-17:30 ThC09.3

A Class of Near-Optimal Local Minima for Witsenhausen's Problem, pp. 5014-5019.

Ajorlou, Amir	Massachusetts Institute of Technology
Jadbabaie, Ali	MIT

17:30-17:50 ThC09.4

Distributed GNE Seeking Over Networks in Aggregative Games with Coupled Constraints Via Forward-Backward Operator Splitting, pp. 5020-5025.

Gadjov, Dian	University of Toronto
Pavel, Lacra	University of Toronto

17:50-18:10 ThC09.5

Probabilistic Sensitivity of Nash Equilibria in Multi-Agent Games: A Wait-And-Judge Approach, pp. 5026-5031.

Fele, Filiberto	University of Oxford
Margellos, Kostas	University of Oxford

18:10-18:30 ThC09.6

Q-Learning with Side Information in Multi-Agent Finite Games, pp. 5032-5037.

Sylvestre, Mathieu	University of Toronto
Pavel, Lacra	University of Toronto

ThC10 Méditerranée C12

Modeling, Estimation, and Control of Large-Scale Network Systems (Invited Session)

Chair: Deplano, Diego	University of Cagliari
Co-Chair: Niazi, Muhammad Umar B.	Gipsa-Lab / CNRS
Organizer: Niazi, Muhammad Umar B.	Gipsa-Lab / CNRS
Organizer: Deplano, Diego	University of Cagliari

16:30-16:50 ThC10.1

Structure-Based Clustering Algorithm for Model Reduction of Large-Scale Network Systems (I), pp. 5038-5043.

Niazi, Muhammad Umar B.	Gipsa-Lab / CNRS
Cheng, Xiaodong	Eindhoven University of Technology
Canudas de Wit, Carlos	CNRS, GIPSA-Lab
Scherpen, Jacquelien M.A.	University of Groningen

16:50-17:10 ThC10.2

Investigating Stability of Laplacians on Signed Digraphs Via Eventual Positivity (I), pp. 5044-5049.

Altafini, Claudio	Linkoping University

17:10-17:30 ThC10.3

Boundary Control for Output Regulation in Scale-Free Positive Networks (I), pp. 5050-5055.

Nikitin, Denis	CNRS, GIPSA-Lab
Canudas de Wit, Carlos	CNRS, GIPSA-Lab
Frasca, Paolo	CNRS, GIPSA-Lab, University Grenoble Alpes

17:30-17:50 ThC10.4

Scale-Free Estimation of the Average State in Large-Scale Systems, pp. 5056-5061.

Niazi, Muhammad Umar B.	Gipsa-Lab / CNRS
Deplano, Diego	University of Cagliari
Canudas de Wit, Carlos	CNRS, GIPSA-Lab
Kibangou, Alain	University Grenoble Alpes

17:50-18:10 ThC10.5

H2 Sub-Optimal Model Reduction for Second-Order Network Systems (I), pp. 5062-5067.

Yu, Lanlin	University of Science and Technology of China
Cheng, Xiaodong	Eindhoven University of Technology
Scherpen, Jacquelien M.A.	University of Groningen
Gort, Emma	University of Groningen

18:10-18:30 ThC10.6

Spectral Representations of Graphons in Very Large Network Systems Control (I), pp. 5068-5075.

Gao, Shuang	McGill University
Caines, Peter E.	McGill University

ThC11 Galliéni 1

Estimation III (Regular Session)

Chair: Meurer, Thomas	Kiel University
Co-Chair: Zorzi, Mattia	University of Padova

16:30-16:50 ThC11.1

Impulsive Observer Design for a Class of Continuous Biological Reactors, pp. 5076-5081.

Feketa, Petro	Christian-Albrechts-University Kiel
Schaum, Alexander	Christian-Albrechts-University Kiel
Jerono, Pascal	Kiel University
Meurer, Thomas	Kiel University

16:50-17:10 ThC11.2

Strong Consistency of the Distributed Stochastic Gradient Algorithm, pp. 5082-5087.

Gan, Die	Chinese Academy of Science
Liu, Zhixin	Academy of Mathematics and Systems Science, ChineseAcademyof Scie

17:10-17:30 ThC11.3

Fusion of Sensors Data in Automotive Radar Systems: A Spectral Estimation Approach, pp. 5088-5093.

Zhu, Bin	University of Padova
Ferrante, Augusto	University of Padova
Karlsson, Johan	KTH Royal Institute of Technology
Zorzi, Mattia	University of Padova

17:30-17:50 ThC11.4

Variable Exponential Forgetting for Estimation of the Statistics of the Normal-Wishart Distribution with a Constant Precision, pp. 5094-5100.

Dokoupil, Jakub	CEITEC, Brno University of Technology
Vaclavek, Pavel	Brno University of Technology

17:50-18:10 ThC11.5

Online Failure Probability Estimation under State Estimation Error and Its Application to Angle of Attack Control of a Reentry Vehicle, pp. 5101-5106.

Merlinge, Nicolas	ONERA
Cantou, Thibault	ONERA
Dahia, Karim	ONERA

18:10-18:30 ThC11.6

Attack-Resilient Estimation for Linear Discrete-Time Stochastic Systems with Input and State Constraints, pp. 5107-5112.

Wan, Wenbin	University of Illinois, Urbana Champaign
Kim, Hunmin	University of Illinois Urbana Champaign
Hovakimyan, Naira	University of Illinois, Urbana Champaign
Voulgaris, Petros G.	University of Illinois, Urbana Champaign

ThC12 Galliéni 2

Networks (Regular Session)

Chair: Paschalidis, Ioannis Ch.	Boston University
Co-Chair: Smith, Stephen L.	University of Waterloo

16:30-16:50 ThC12.1

Joint Estimation of OD Demands and Cost Functions in Transportation Networks from Data, pp. 5113-5118.

Wollenstein-Betech, Salomon	Boston University
Sun, Chuangchuang	Ohio State University
Zhang, Jing	Mitsubishi Electric Research Laboratories
Paschalidis, Ioannis Ch.	Boston University

16:50-17:10 ThC12.2

On Re-Balancing Self-Interested Agents in Ride-Sourcing Transportation Networks, pp. 5119-5125.

Sadeghi Yengejeh, Armin	University of Waterloo
Smith, Stephen L.	University of Waterloo

17:10-17:30 ThC12.3

Compositional Synthesis of Symbolic Models for Networks of Switched Systems, pp. 5126-5131.

Swikir, Abdalla	Technical University of Munich
Zamani, Majid	University of Colorado Boulder

17:30-17:50 ThC12.4

No Switching Policy Is Optimal for a Linear System with a Bottleneck Entrance, pp. 5132-5137.

Sadeghi, Mahdiar	Northeastern University
Ali Al-Radhawi, Muhammad	Massachussets Institute of Technology
Margaliot, Michael	Tel Aviv University
Sontag, Eduardo	Northeastern University

17:50-18:10 ThC12.5

Multi-Dimensional Continuous Type Population Potential Games, pp. 5138-5143.

Calderone, Dan	University of Washington
Ratliff, Lillian J.	University of Washington

18:10-18:30 ThC12.6

Towards Resilient Supervisors against Sensor Deception Attacks (I), pp. 5144-5149.

Meira-Goes, Romulo	University of Michigan
Marchand, Herve	INRIA Rennes - Bretagne Atlantique
Lafortune, Stephane	University of Michigan

ThC13 Galliéni 4

Smart Grid II (Regular Session)

Chair: Damm, Gilney	Evry University
Co-Chair: Khorrami, Farshad	NYU Tandon School of Engineering

16:30-16:50 ThC13.1

A Two-Stage Market Mechanism for Electricity with Renewable Generation, pp. 5150-5155.

Dahlin, Nathan	University of Southern California
Jain, Rahul	University of Southern California

16:50-17:10 ThC13.2

An Optimal Defense Strategy against Data Integrity Attacks in Smart Grids, pp. 5156-5161.

Salehghaffari, Hossein	NYU, Tandon School of Engineering
Khorrami, Farshad	NYU Tandon School of Engineering

17:10-17:30 ThC13.3

Privacy of Real-Time Pricing in Smart Grid, pp. 5162-5167.

GhoddousiBoroujeni, Mahrokh	Sharif University of Technology
Fay, Dominik	KTH Royal Institute of Technology
Dimitrakakis, Christos	Chalmers University of Technology
Kamgarpour, Maryam	ETH Zurich

17:30-17:50 ThC13.4

A Nonlinear Distributed Control Strategy for a DC MicroGrid Using Hybrid Energy Storage for Voltage Stability, pp. 5168-5173.

Perez, Filipe	UNIFEI, CentraleSupelec

Damm, Gilney	Evry University
Ribeiro, Paulo Fernando	UNIFEI
Lagarrigue, Francoise	Laboratoire Des Signaux Et Systèmes
Gali Dol, Lilia	Efficacity Institute

17:50-18:10 ThC13.5

Customer Incentives for Gaming Demand Response Baselines, pp. 5174-5179.

Ellman, Douglas	University of Hawaii, Manoa
Xiao, Yuanzhang	University of Hawaii, Manoa

18:10-18:30 ThC13.6

Energy Management for Timely Charging a System of Drones, pp. 5180-5186.

Liu, Jiashang	The Ohio State University
Li, Wenxin	The Ohio State University
Shroff, Ness B.	The Ohio State University
Sinha, Prasun	Ohio State University

ThC14 Galliéni 7

Time-Varying Systems (Regular Session)

Chair: Wirth, Fabian	University of Passau
Co-Chair: Scorletti, Gerard	Ecole Centrale de Lyon

16:30-16:50 ThC14.1

Coppel's Inequality for Linear Systems on Time Scales, pp. 5187-5192.

Russo, Giovanni	University College Dublin
Wirth, Fabian	University of Passau

16:50-17:10 ThC14.2

Stability Analysis of Time-Varying Systems with Harmonic Oscillations Using IQC Frequency Domain Multipliers, pp. 5193-5198.

AYALA-CUEVAS, Jorge	Ecole Centrale de Lyon
Saggin, Fabricio	Ecole Centrale de Lyon
Korniienko, Anton	Ecole Centrale de Lyon, Laboratoire Ampère
Scorletti, Gerard	Ecole Centrale de Lyon

17:10-17:30 ThC14.3

Gain Scheduled Control of Bounded Multilinear Discrete Time Systems with Uncertanties: An Iterative LMI Approach, pp. 5199-5205.

Grunert, Tim	Vaillant GmbH
Dehnert, Robert	University of Wuppertal
Kummert, Anton	University of Wuppertal
Tibken, Bernd	University of Wuppertal
Fielsch, Sven	University of Wuppertal

17:30-17:50 ThC14.4

Detectability Analysis and Observer Design for Linear Time Varying Systems, pp. 5206-5211.

Tranninger, Markus	Graz University of Technology
Seeber, Richard	Graz University of Technology
Zhuk, Sergiy	IBM
Steinberger, Martin	Graz University of Technology
Horn, Martin	Graz University of Technology

17:50-18:10 ThC14.5

Stabilization and Exponential Estimation of Linear Discrete-Time Systems with Input and State Delays Base on a Novel Controller Design Approach, pp. 5212-5216.

Li, Haifang	Heilongjiang University
Wang, Xin	Heilongjiang University
Xue, Yu	Heilongjiang University

18:10-18:30 ThC14.6

Maintaining Ferment, pp. 5217-5222.

Goyal, Mohak	Indian Institute of Technology, Bombay
Chatterjee, Debasish	Indian Institute of Technology, Bombay
Karamchandani, Nikhil	Indian Institute of Technology Bombay
Manjunath, D	INDIAN INSTITUTE OF TECHNOLOGY Bombay, India

ThC15 Rhodes GH

Optimal Control III (Regular Session)

Chair: Anderson, James	California Institute of Technology
Co-Chair: Leve, Frederick	AFOSR

16:30-16:50 ThC15.1

Spectrum Shaping Methods for Predictive Control Approaches Applied to a Grid-Connected Power Electronics Converter, pp. 5223-5230.

Stickan, Benjamin	Institute for Solar Energy Systems Freiburg
Rutquist, Per	Department of Microsystems Engineering, IMTEK
Geyer, Tobias	ABB Corporate Research
Diehl, Moritz	University of Freiburg

16:50-17:10 ThC15.2

On Closed-Loop Lyapunov Stability with Minimum-Time MPC Feedback Laws for Discrete-Time Systems, pp. 5231-5237.

Sutherland, Richard	University of Michigan
Kolmanovsky, Ilya V.	University of Michigan
Girard, Anouck	University of Michigan, Ann Arbor
Leve, Frederick	AFOSR
Petersen, Christopher	Air Force Research Laboratory

17:10-17:30 ThC15.3

Optimal Control for Continuous-Time Nonlinear Systems Based on a Linear-Like Policy Iteration, pp. 5238-5243.

TAHIROVIC, Adnan	University of Sarajevo
Astolfi, Alessandro	Imperial College & University of Rome

17:30-17:50 ThC15.4

Quasi-Stochastic Approximation and Off-Policy Reinforcement Learning, pp. 5244-5251.

Bernstein, Andrey	National Renewable Energy Lab (NREL)
Chen, Yue	National Renewable Energy Laboratory
Colombino, Marcello	McGill University
Dall'Anese, Emiliano	University of Colorado, Boulder
Mehta, Prashant G.	University of Illinois, Urbana Champaign
Meyn, Sean P.	University of Florida

17:50-18:10 ThC15.5

Distributed Optimization of Nonlinear Multi-Agent Systems:

A Small-Gain Approach, pp. 5252-5257.

Liu, Tengfei	Northeastern University
Qin, Zhengyan	Northeastern University
Hong, Yiguang	Chinese Academy of Sciences
Jiang, Zhong-Ping	New York University

18:10-18:30 ThC15.6

System Level Synthesis with State and Input Constraints, pp. 5258-5263.

Chen, Yuxiao	California Institute of Technology
Anderson, James	California Institute of Technology

ThC16 Rhodes AB

Numerical Methods for Real-Time Model Predictive Control II (Invited Session)

Chair: McInerney, Ian	Imperial College London
Co-Chair: Kerrigan, Eric C.	Imperial College London
Organizer: McInerney, Ian	Imperial College London
Organizer: Kerrigan, Eric C.	Imperial College London
Organizer: Nie, Yuanbo	Imperial College London

16:30-16:50 ThC16.1

A Parallel Decomposition Scheme for Solving Long-Horizon Optimal Control Problems (I), pp. 5264-5271.

Shin, Sungho	University of Wisconsin-Madison
Faulwasser, Timm	Karlsruhe Institute of Technology
Zanon, Mario	IMT Institute for Advanced Studies Lucca
Zavala, Victor M.	University of Wisconsin-Madison

16:50-17:10 ThC16.2

Nonlinear Model Predictive Control for Distributed Motion Planning in Road Intersections Using PANOC (I), pp. 5272-5278.

Katriniok, Alexander	Ford Research & Innovation Center
Sopasakis, Pantelis	Katholieke Universiteit Leuven
Schuurmans, Mathijs	Katholieke Universiteit Leuven
Patrinos, Panagiotis	Katholieke Universiteit Leuven

17:10-17:30 ThC16.3

Towards a Modular Framework for Distributed Model Predictive Control of Nonlinear Neighbor-Affine Systems (I), pp. 5279-5284.

Burk, Daniel	Friedrich-Alexander-University Erlangen-Nuremberg
Völz, Andreas	Friedrich-Alexander-University Erlangen-Nuremberg
Graichen, Knut	University Erlangen-Nürnberg (FAU)

17:30-17:50 ThC16.4

Real-Time Model Predictive Control Based on Prediction-Correction Algorithms (I), pp. 5285-5291.

Paternain, Santiago	University of Pennsylvania
Morari, Manfred	University of Pennsylvania
Ribeiro, Alejandro	University of Pennsylvania

17:50-18:10 ThC16.5

Efficient and More Accurate Representation of Solution Trajectories in Numerical Optimal Control, pp. 5292-5297.

Nie, Yuanbo	Imperial College London
Kerrigan, Eric C.	Imperial College London

18:10-18:30 ThC16.6

The Advanced Step Real Time Iteration for NMPC, pp. 5298-5305.

Nurkanović, Armin	Siemens AG
Zanelli, Andrea	University of Freiburg
Albrecht, Sebastian	Siemens AG
Diehl, Moritz	University of Freiburg

ThC17 Rhodes CD

Formal Verification and Synthesis II (Regular Session)

Chair: Pappas, George J.	University of Pennsylvania
Co-Chair: Ozay, Necmiye	University of Michigan

16:30-16:50 ThC17.1

Transfer Planning for Temporal Logic Tasks, pp. 5306-5311.

Luo, Xusheng	Duke University
Zavlanos, Michael M.	Duke University

16:50-17:10 ThC17.2

Average-Based Robustness for Continuous-Time Signal Temporal Logic, pp. 5312-5317.

Mehdipour, Noushin	Boston University
Vasile, Cristian Ioan	Massachusetts Institute of Technology
Belta, Calin	Boston University

17:10-17:30 ThC17.3

Tight Decomposition Functions for Mixed Monotonicity, pp. 5318-5322.

Yang, Liren	University of Michigan
Ozay, Necmiye	University of Michigan

17:30-17:50 ThC17.4

Opportunistic Synthesis in Reactive Games under Information Asymmetry, pp. 5323-5329.

Kulkarni, Abhishek	Worcester Polytechnic Institute
Fu, Jie	Worcester Polytechnic Institute

17:50-18:10 ThC17.5

Topological Approximate Dynamic Programming under Temporal Logic Constraints, pp. 5330-5337.

li, lening	Worcester Polytechnic Institute
Fu, Jie	Worcester Polytechnic Institute

18:10-18:30 ThC17.6

Reinforcement Learning for Temporal Logic Control Synthesis with Probabilistic Satisfaction Guarantees, pp. 5338-5343.

Hasanbeig, Hosein	University of Oxford
Kantaros, Yiannis	University of Pennsylvania
Abate, Alessandro	University of Oxford
kroening, Daniel	University of Oxford
Pappas, George J.	University of Pennsylvania
Lee, Insup	University of Pennsylvania

ThC18 Rhodes EF

Security in Cyber-Physical Systems II (Invited Session)

Chair: Johansson, Karl H.	KTH Royal Institute of Technology
Co-Chair: Mo, Yilin	Tsinghua University
Organizer: Ren, Xiaoqiang	Shanghai University
Organizer: Mo, Yilin	Tsinghua University
Organizer: Sinopoli, Bruno	Washington University in St Louis

Organizer: Johansson, Karl H. KTH Royal Institute of Technology

16:30-16:50 ThC18.1

Secure Distributed Filtering for Unstable Dynamics under Compromised Observations (I), pp. 5344-5349.

He, Xingkang KTH Royal Institute of Technology
Ren, Xiaoqiang KTH Royal Institute of Technology
Sandberg, Henrik KTH Royal Institute of Technology
Johansson, Karl H. KTH Royal Institute of Technology

16:50-17:10 ThC18.2

Supervisory Control of Discrete Event Systems in the Presence of Sensor and Actuator Attacks (I), pp. 5350-5355.

Wang, Yu Duke University
Pajic, Miroslav Duke University

17:10-17:30 ThC18.3

Filtering Approaches for Dealing with Noise in Anomaly Detection (I), pp. 5356-5361.

Hashemi, Navid University of Texas, Dallas
Verdugo, Eduardo Centro De Investigación Científica Y De Educación Superior De En
Peña, Jonatán Centro De Investigación Científica Y De Educación Superior De En
Ruths, Justin University of Texas, Dallas

17:30-17:50 ThC18.4

Study on Realizable Generalized Hold Functions As a Countermeasure against Zero Dynamics Attack (I), pp. 5362-5367.

Ha, Jongsoo Seoul National University
Shim, Hyungbo Seoul National University

17:50-18:10 ThC18.5

When Is the Secure State-Reconstruction Problem Hard? (I), pp. 5368-5373.

Mao, Yanwen University of California, Los Angeles
Mitra, Aritra Purdue University
Sundaram, Shreyas Purdue University
Tabuada, Paulo University of California, Los Angeles

18:10-18:30 ThC18.6

Protecting Assets with Heterogeneous Valuations under Behavioral Probability Weighting (I), pp. 5374-5379.

Abdallah, Mustafa Purdue University
Naghizadeh, Parinaz Purdue University
Cason, Timothy Purdue University
Bagchi, Saurabh Purdue University
Sundaram, Shreyas Purdue University

ThC19 Galliéni 5

Stochastic Systems IV (Regular Session)

Chair: Findeisen, Rolf OVG University Magdeburg
Co-Chair: Peaucelle, Dimitri LAAS-CNRS, Université de Toulouse

16:30-16:50 ThC19.1

Finite-Time Stabilization and Robust Control of Stochastic Nonlinear System Based on Hamiltonian Realizationn, pp. 5380-5385.

Wang, Min Zhengzhou University
Liu, Yanhong Zhengzhou University
Cao, Guizhou Zhengzhou University

16:50-17:10 ThC19.2

Linear Noisy Networks with Stochastic Components, pp. 5386-5391.

Sevuktekin, Noyan University of Illinois, Urbana Champaign
Raginsky, Maxim University of Illinois, Urbana Champaign
Singer, Andrew University of Illinois, Urbana Champaign

17:10-17:30 ThC19.3

Sequential Chance Optimization for Flow-Tube Based Control of Probabilistic Nonlinear Systems, pp. 5392-5399.

M. Jasour, Ashkan Massachusetts Institute of Technology
Williams, Brian Massachusetts Institute of Technology

17:30-17:50 ThC19.4

Static Output Feedback Stabilization of Discrete-Time Linear Systems with Stochastic Dynamics Determined by an I.i.d. Process, pp. 5400-5405.

Hosoe, Yohei Kyoto University
Peaucelle, Dimitri LAAS-CNRS, Université de Toulouse

17:50-18:10 ThC19.5

On Noise-To-State Stability of Stochastic Discrete-Time Systems Via Finite-Step Lyapunov Functions, pp. 5406-5411.

Noroozi, Navid Otto Von Guericke Universitat Magdeburg
Jackson, Roxanne R. University of Passau
Quevedo, Daniel E. Paderborn University
Wirth, Fabian University of Passau
Findeisen, Rolf Otto Von Guericke Universitat Magdeburg

18:10-18:30 ThC19.6

A Modified Technique for Spectral Factorization of Infinite-Dimensional Systems Using Subspace Techniques, pp. 5412-5419.

Lao, Yejun University of Michigan
Scruggs, Jeff University of Michigan

ThC20 Rhodes 10

Distributed Control III (Regular Session)

Chair: Nguyen, Dinh Hoa Kyushu University
Co-Chair: Panagou, Dimitra University of Michigan, Ann Arbor

16:30-16:50 ThC20.1

Robust Dynamic Average Consensus with Prescribed Performance, pp. 5420-5425.

Stamouli, Charalampia National Tech. Univ. of Athens
Bechlioulis, Charalampos P. National Tech. Univ. of Athens
Kyriakopoulos, Kostas J. National Tech. Univ. of Athens

16:50-17:10 ThC20.2

Adaptive Output Consensus Design in Clustered Networks of Heterogeneous Linear Multi-Agent Systems, pp. 5426-5431.

Pham, Van Thiem University of Reims Champagne-Ardenne
Messai, Nadhir Université de Reims Champagne-Ardenne

Nguyen, Dinh Hoa	Kyushu University
Manamanni, Noureddine	University of Reims

17:10-17:30 ThC20.3

Resilient Leader-Follower Consensus with Time-Varying Leaders in Discrete-Time Systems, pp. 5432-5437.

Usevitch, James	University of Michigan-Ann Arbor
Panagou, Dimitra	University of Michigan, Ann Arbor

17:30-17:50 ThC20.4

Resilient Exponential Consensus with Time-Varying Adversary Attacks and Asynchronous Events, pp. 5438-5443.

Xia, Weiguo	Dalian University of Technology
Liu, Ji	Stony Brook University
Li, Shuang	Dalian University of Technology
Sun, Xi-Ming	Dalian University of Technology
Han, Min	Dalian University of Technology

17:50-18:10 ThC20.5

Structural Robustness to Noise in Consensus Networks: Impact of Average Degrees and Average Distances, pp. 5444-5449.

Yazicioglu, Yasin	University of Minnesota
Abbas, Waseem	Information Technology University
Shabbir, Mudassir	Information Technology University

18:10-18:30 ThC20.6

Network Realizable Controllers with an Application to Strongly Connected Distributed Systems, pp. 5450-5455.

Kucuksayacigil, Gulnihal	Iowa State University
Naghnaeian, Mohammad	Clemson University
Elia, Nicola	University of Minnesota

ThC21 Risso 6

Networked Control Systems III (Regular Session)

Chair: Taha, Ahmad	University of Texas, San Antonio
Co-Chair: Kan, Zhen	University of Iowa

16:30-16:50 ThC21.1

Characterizing Herdability of Signed Networks Via Graph Walks, pp. 5456-5461.

She, Baike	University of Iowa
Cai, Mingyu	University of Iowa
Kan, Zhen	University of Iowa

16:50-17:10 ThC21.2

Asynchronous Consensus of Continuous-Time Multiagent Systems with Minimum Communication, pp. 5462-5467.

Sawant, Vishal	Indian Institute of Technology, Bombay
Chakraborty, Debraj	Indian Institute of Technology, Bombay
Pal, Debasattam	Indian Institute of Technology, Bombay

17:10-17:30 ThC21.3

On the Computation of a Lower Bound on Strong Structural Controllability in Networks, pp. 5468-5473.

Shabbir, Mudassir	Information Technology University
Abbas, Waseem	Vanderbilt University
Yazicioglu, Yasin	University of Minnesota

17:30-17:50 ThC21.4

State Estimation in Water Distribution Networks through a New Successive Linear Approximation, pp. 5474-5479.

Wang, Shen	University of Texas, San Antonio
Taha, Ahmad	University of Texas, San Antonio
Sela, Lina	University of Texas, Austin
Gatsis, Nikolaos	University of Texas, San Antonio
Giacomoni, Marcio	University of Texas, San Antonio

17:50-18:10 ThC21.5

Reverse Average Dwell-Times for Networked Control Systems, pp. 5480-5485.

Heijmans, Stefan H. J.	Eindhoven University of Technology
Postoyan, Romain	CNRS, CRAN, Université de Lorraine
Nesic, Dragan	University of Melbourne
Heemels, W.P.M.H.	Eindhoven University of Technology

18:10-18:30 ThC21.6

Constrained Online Learning in Networks with Sublinear Regret and Fit, pp. 5486-5493.

Paternain, Santiago	University of Pennsylvania
Lee, Soomin	Georgia Institute of Technology
Zavlanos, Michael M.	Duke University
Ribeiro, Alejandro	University of Pennsylvania

ThC22 Risso 7

Theoretical Foundations for the Representation and Identification of Dynamic Networks II (Invited Session)

Chair: Warnick, Sean	Brigham Young University
Co-Chair: Van den Hof, Paul M.J.	Eindhoven University of Technology
Organizer: Van den Hof, Paul M.J.	Eindhoven University of Technology
Organizer: Warnick, Sean	Brigham Young University

16:30-16:50 ThC22.1

Local Module Identification in Dynamic Networks with Correlated Noise: The Full Input Case (I), pp. 5494-5499.

Van den Hof, Paul M.J.	Eindhoven University of Technology
Ramaswamy, Karthik R.	Eindhoven University of Technology
Dankers, Arne	University of Calgary
Bottegal, Giulio	TU Eindhoven

16:50-17:10 ThC22.2

Network Identification with Partial Excitation and Measurement (I), pp. 5500-5506.

Bazanella, Alexandre S.	Univ. Federal do Rio Grande do Sul
Gevers, Michel	Université Catholique de Louvain
Hendrickx, Julien M.	Université Catholique de Louvain

17:10-17:30 ThC22.3

Allocation of Excitation Signals for Generic Identifiability of Dynamic Networks (I), pp. 5507-5512.

Cheng, Xiaodong	Eindhoven University of Technology
Shi, Shengling	Eindhoven University of Technology
Van den Hof, Paul M.J.	Eindhoven University of Technology

17:30-17:50 ThC22.4

Topology Identification of Heterogeneous Networks of Linear Systems (I), pp. 5513-5518.

van Waarde, Henk J.	University of Groningen
Tesi, Pietro	University of Firenze
Camlibel, M. Kanat	University of Groningen

17:50-18:10 ThC22.5

Generalized Sensing and Actuation Schemes for Local Module Identification in Dynamic Networks (I), pp. 5519-5524.

Ramaswamy, Karthik R.	Eindhoven University of Technology
Van den Hof, Paul M.J.	Eindhoven University of Technology
Dankers, Arne	University of Calgary

18:10-18:30 ThC22.6

Designing Local Inputs to Identify Link Failures in a Diffusive Network: A Graph Perspective (I), pp. 5525-5530.

Xue, Mengran	Washington State University

ThC23 Risso 8

Machine Learning in Complex Networks I (Invited Session)

Chair: Basar, Tamer	University of Illinois, Urbana Champaign
Co-Chair: Liu, Ji	Stony Brook University
Organizer: Basar, Tamer	University of Illinois, Urbana Champaign
Organizer: Liu, Ji	Stony Brook University
Organizer: Shi, Wei	Arizona State University
Organizer: Zhang, Kaiqing	University of Illinois, Urbana Champaign

16:30-16:50 ThC23.1

Policy Gradient Using Weak Derivatives for Reinforcement Learning (I), pp. 5531-5537.

Bhatt, Sujay	Cornell University
Koppel, Alec	U.S. Army Research Laboratory
Krishnamurthy, Vikram	Cornell University

16:50-17:10 ThC23.2

Distributed Stochastic Gradient Method for Non-Convex Problems with Applications in Supervised Learning (I), pp. 5538-5543.

George, Jemin	U.S. Army Research Laboratory
Yang, Tao	Northeastern University
Bai, He	Oklahoma State University
Gurram, Prudhvi	Booz Allen Hamilton

17:10-17:30 ThC23.3

Distributed Learning in Network Games: A Dual Averaging Approach (I), pp. 5544-5549.

Talebi, Shahriar	University of Washington
Alemzadeh, Siavash	University of Washington
Ratliff, Lillian J.	University of Washington
Mesbahi, Mehran	University of Washington

17:30-17:50 ThC23.4

Stochastic Bregman Parallel Direction Method of Multipliers for Distributed Optimization, pp. 5550-5555.

Yu, Yue	University of Washington
Acikmese, Behcet	University of Washington

17:50-18:10 ThC23.5

Reinforcement Learning for Decentralized Stochastic Control (I), pp. 5556-5561.

Yongacoglu, Bora	Queen's University
Arslan, Gurdal	University of Hawaii, Manoa
Yuksel, Serdar	Queen's University

18:10-18:30 ThC23.6

A Communication-Efficient Multi-Agent Actor-Critic Algorithm for Distributed Reinforcement Learning (I), pp. 5562-5567.

Lin, Yixuan	Stony Brook University
Zhang, Kaiqing	University of Illinois, Urbana Champaign
Yang, Zhuoran	Princeton University
Wang, Zhaoran	Northwestern University
Basar, Tamer	University of Illinois, Urbana Champaign
Sandhu, Romeil	Stony Brook University
Liu, Ji	Stony Brook University

ThC24 Hermès

Recent Advances in Iterative Learning Control and Repetitive Learning Control: From Theory to Applications (Invited Session)

Chair: Tan, Ying	University of Melbourne
Co-Chair: Li, Yanan	University of Sussex
Organizer: Sebastian, Gijo	University of Melbourne
Organizer: Tan, Ying	University of Melbourne
Organizer: Oomen, Tom	Eindhoven University of Technology
Organizer: Chu, Bing	University of Southampton
Organizer: Freeman, Christopher T.	University of Southampton
Organizer: Barton, Kira	University of Michigan, Ann Arbor

16:30-16:50 ThC24.1

Spatial Repetitive Learning Control for Trajectory Learning in Human-Robot Collaboration (I), pp. 5568-5573.

Xia, Jingkang	Southwest Jiaotong University, School of Electrical Engineering
Li, Yanan	University of Sussex
Yang, Lin	Southwest Jiaotong University, School of Electrical Engineering
Huang, Deqing	Southwest Jiaotong University

16:50-17:10 ThC24.2

Distributed Norm Optimal Iterative Learning Control for Formation of Networked Dynamical Systems (I), pp. 5574-5579.

Chen, Bin	University of Southampton
Chu, Bing	University of Southampton

17:10-17:30 ThC24.3

Flexible-Time Economic Iterative Learning Control: A Case Study in Airborne Wind Energy (I), pp. 5580-5586.

Cobb, Mitchell	North Carolina State University
Wu, Maxwell	University of Michigan
Barton, Kira	University of Michigan, Ann Arbor
Vermillion, Christopher	North Carolina State University

17:30-17:50 ThC24.4

Iterative Learning Control of FES with Embedded Simultaneous Volitional EMG (I), pp. 5587-5592.

Sa-e, Sakariya	University of Southampton
Freeman, Christopher T.	University of Southampton
Yang, Kai	University of Southampton

17:50-18:10 ThC24.5

Iterative Learning Control of the Displacements of a Cantilever Beam (I), pp. 5593-5598.

Patan, Maciej	University of Zielona Gora
Klimkowicz, Kamil	University of Zielona Gora
Maniarski, Robert	University of Zielona Góra
Patan, Krzysztof	University of Zielona Gora
Rogers, Eric	University of Southampton

18:10-18:30 ThC24.6

Frequency Domain Design of a Robust Iterative Learning Control Via Convex Optimization Techniques (I), pp. 5599-5604.

Mandra, Slawomir	Nicolaus Copernicus University
Galkowski, Krzysztof	University of Zielona Gora
Aschemann, Harald	University of Rostock
Rauh, Andreas	University of Rostock

ThC25 Athéna

Large-Scale Systems (Regular Session)

Chair: Görges, Daniel	University of Kaiserslautern
Co-Chair: Mironchenko, Andrii	University of Passau

16:30-16:50 ThC25.1

Detectability of Intermittent Zero-Dynamics Attack in Networked Control Systems, pp. 5605-5610.

Mao, Yanbing	Binghamton University-SUNY
Jafarnejadsani, Hamidreza	University of Illinois, Urbana Champaign
Zhao, Pan	University of Illinois, Urbana Champaign
Akyol, Emrah	SUNY Binghamton
Hovakimyan, Naira	University of Illinois, Urbana Champaign

16:50-17:10 ThC25.2

Social Power Convergence on Duplex Influence Networks with Self-Appraisals, pp. 5611-5616.

Kang, Rongrong	Fudan University
Li, Cong	Fudan University
Li, Xiang	Fudan University

17:10-17:30 ThC25.3

Small-Gain Theorems for Stability of Infinite Networks, pp. 5617-5622.

Mironchenko, Andrii	University of Passau

17:30-17:50 ThC25.4

A Distributed Approach for the Detection of Covert Attacks in Interconnected Systems with Stochastic Uncertainties, pp. 5623-5628.

Barboni, Angelo	Imperial College London
Gallo, Alexander	Imperial College London
Boem, Francesca	University College London
Parisini, Thomas	Imperial College & University of Trieste

17:50-18:10 ThC25.5

Robust Finite Frequency $H\infty$ Model Reduction for Uncertain 2D Continuous Systems, pp. 5629-5634.

El-Amrani, Abderrahim	University of Sidi Mohammed Ben Abdellah
Boukili, Bensalem	Fez
El Hajjaji, Ahmed	University of Picardie-Jules Verne
Hmamed, Abdelaziz	Faculty of Science Dhar Elmhraz
Boumhidi, Ismail	USMBA

18:10-18:30 ThC25.6

Stabilizing Distributed Model Predictive Control Using the Consensus Form of ADMM, pp. 5635-5640.

Rostami, Ramin	University of Kaiserslautern
Costantini, Giuliano	University of Kaiserslautern
Görges, Daniel	University of Kaiserslautern

FrP1 Apollon

Feedback and Uncertainty: Some Basic Problems and Theorems (Plenary Session)

Chair: Bitmead, Robert R. — University of California San Diego

08:30-09:30 FrP1.1

*Feedback and Uncertainty: Some Basic Problems and Theorems**.

Guo, Lei — Academy of Mathematics and Systems Science, Chinese Acdemy of Sciences

FrA01 Méditerranée 1

Nonlinear Modeling and Estimation in Biomedical Systems (Invited Session)

Chair: Medvedev, Alexander V. — Uppsala University

Co-Chair: Knorn, Steffi — Uppsala University

Organizer: Medvedev, Alexander V. — Uppsala University

Organizer: Knorn, Steffi — Otto-Von-Guericke University Magdeburg

10:00-10:20 FrA01.1

Identification of Continuous Volterra Models with Explicit Time Delay through Series of Laguerre Functions (I), pp. 5641-5646.

Bro, Viktor — Uppsala University

Medvedev, Alexander V. — Uppsala University

10:20-10:40 FrA01.2

Data-Driven Modelling of Fatigue in Pelvic Floor Muscles When Performing Kegel Exercises (I), pp. 5647-5653.

Kask, Nathalie — Luleå University of Technology

Budgett, David M — Auckland Bioengineering Institute, University of Auckland

Kruger, Jennifer A — Auckland Bioengineering Institute, University of Auckland

Nielsen, Poul M F — Department of Engineering Science, University of Auckland

Varagnolo, Damiano — NTNU - Norwegian University of Science and Technology

Knorn, Steffi — Otto-Von-Guericke University Magdeburg

10:40-11:00 FrA01.3

Meal Estimation from Continuous Glucose Monitor Data Using Kalman Filtering and Hypothesis Testing (I), pp. 5654-5661.

Staal, Odd Martin — NTNU, Norwegian University of Science and Technology

Sælid, Steinar — Prediktor Medical AS

Fougner, Anders Lyngvi — Norwegian University of Science and Technology (NTNU)

Stavdahl, Øyvind — NTNU, Norwegian University of Science and Technology

11:00-11:20 FrA01.4

Optimal Control Modulation of HIV Reservoir Formation Rate by Antigen Infusion (I), pp. 5662-5667.

Jagarapu, Aditya — University of Delaware

Piovoso, Michael J. — University of Delaware

Zurakowski, Ryan — University of Delaware

11:20-11:40 FrA01.5

Sensorless Nonlinear Stroke Controller for an Implantable Undulating Membrane Pump, pp. 5668-5673.

Scheffler, Mattias — Pimm Umr Cnrs

Mechbal, Nazih — Arts Et Métiers ParisTech

Rebillat, Marc — Arts & Metiers Paristech

Monteiro, Eric — Arts & Metiers Paristech

Barabino, Nicolas — CORWAVE

11:40-12:00 FrA01.6

Optimal Duration and Planning of Switching Treatments Taking Drug Toxicity into Account: A Convex Optimisation Approach, pp. 5674-5679.

Devia, Carlos Andres — Delft University of Technology

Giordano, Giulia — Delft University of Technology

FrA02 Méditerranée 2

Linear Systems I (Regular Session)

Chair: Niemann, Henrik — Technical University of Denmark

Co-Chair: Dilip, Sanand — Indian Institute of Technology, Kharagpur

10:00-10:20 FrA02.1

Towards Data-Driven LPV Controller Synthesis Based on Frequency Response Functions, pp. 5680-5685.

Bloemers, Tom — Eindhoven University of Technology

Tóth, Roland — Eindhoven University of Technology

Oomen, Tom — Eindhoven University of Technology

10:20-10:40 FrA02.2

Gramian Optimization with Input-Power Constraints, pp. 5686-5691.

Baggio, Giacomo — University of California, Riverside

Zampieri, Sandro — University of Padova

Scherer, Carsten W. — University of Stuttgart

10:40-11:00 FrA02.3

A Controller Architecture with Anti-Windup, pp. 5692-5697.

Niemann, Henrik — Technical University of Denmark

11:00-11:20 FrA02.4

The Controllability Gramian, the Hadamard Product and the Optimal Actuator and Sensor Placement Problem, pp. 5698-5703.

Dilip, Sanand — Indian Institute of Technology, Kharagpur

11:20-11:40 FrA02.5

On Reachability and Null-Controllability of Nonstrict Convex Processes, pp. 5704-5709.

Eising, Jaap — University of Groningen

Camlibel, M. Kanat — University of Groningen

11:40-12:00 FrA02.6

Fractional-Order Memory Reset Control for Integer-Order LTI Systems, pp. 5710-5715.

Weise, Christoph — TU Ilmenau

Wulff, Kai — TU Ilmenau

Reger, Johann — TU Ilmenau

FrA03 Méditerranée 5

Autonomous Vehicles (Regular Session)

Chair: Liu, Lantao — Indiana University
Co-Chair: Ferrari, Riccardo M.G. — Delft University of Technology

10:00-10:20 FrA03.1

Multi-Objective and Model-Predictive Tree Search for Spatiotemporal Informative Planning, pp. 5716-5722.

Chen, Weizhe — Indiana University Bloomington
Liu, Lantao — Indiana University

10:20-10:40 FrA03.2

Decentralized Radial Segregation in Heterogeneous Swarms of Robots, pp. 5723-5728.

Bernardes Ferreira Filho, Edson — Universidade Federal de Minas Gerais
Pimenta, Luciano — Universidade Federal de Minas Gerais

10:40-11:00 FrA03.3

Dynamic Vehicle Routing in Presence of Random Recalls, pp. 5729-5734.

Bopardikar, Shaunak D. — Michigan State University
Srivastava, Vaibhav — Michigan State University

11:00-11:20 FrA03.4

An Observer-Based Longitudinal Control of Car-Like Vehicles Platoon Navigating in an Urban Environment, pp. 5735-5741.

Khalifa, Ahmed — Faculty of Electronics Engineering, Menoufia University
Kermorgant, Olivier — École Centrale Nantes
Dominguez, Salvador — Ecole Centrale de Nantes
Martinet, Philippe — IRCCyN

11:20-11:40 FrA03.5

A Sliding Mode Observer Approach for Attack Detection and Estimation in Autonomous Vehicle Platoons Using Event Triggered Communication, pp. 5742-5747.

Keijzer, Twan — Delft University of Technology
Ferrari, Riccardo M.G. — Delft University of Technology

11:40-12:00 FrA03.6

A Predictive Vector-Field Based Lane-Changing Controller, pp. 5748-5753.

Huang, Lixing — University of Michigan
Panagou, Dimitra — University of Michigan, Ann Arbor

FrA04 Méditerranée A2

Modern Computational and Algorithmic Challenges on Switched Systems (Invited Session)

Chair: Mason, Paolo — CNRS, Laboratoire Des Signaux Et Systèmes, Supélec
Co-Chair: Jungers, Raphaël M. — University of Louvain
Organizer: Girard, Antoine — CNRS
Organizer: Jungers, Raphaël M. — University of Louvain
Organizer: Wang, Zheming — University of Louvain

10:00-10:20 FrA04.1

Estimation Entropy for Regular Linear Switched Systems (I), pp. 5754-5759.

Scabin Vicinansa, Guilherme — University of Illinois, Urbana Champaign
Liberzon, Daniel — University of Illinois, Urbana Champaign

10:20-10:40 FrA04.2

Dissipativeness and Dissipativation of Discrete-Time Switched Linear Systems (I), pp. 5760-5765.

Jungers, Marc — CNRS - Université de Lorraine
Ferrante, Francesco — GIPSA-Lab and Université Grenoble Alpes
Loheac, Jerome — CNRS, Université de Lorraine

10:40-11:00 FrA04.3

Stabilizability of Markov Jump Linear Systems Modeling Wireless Networked Control Scenarios (I), pp. 5766-5772.

Zacchia Lun, Yuriy — IMT School for Advanced Studies Lucca
D'Innocenzo, Alessandro — University of L'Aquila

11:00-11:20 FrA04.4

Extended Projected Dynamical Systems with Applications to Hybrid Integrator-Gain Systems (I), pp. 5773-5778.

Sharif, Bardia — Eindhoven University of Technology
Heertjes, Marcel — Eindhoven University of Technology
Heemels, W.P.M.H. — Eindhoven University of Technology

11:20-11:40 FrA04.5

Fault Detectability Analysis of Switched Affine Systems with Linear Temporal Logic Constraints (I), pp. 5779-5786.

Yang, Liren — University of Michigan
Ozay, Necmiye — University of Michigan

11:40-12:00 FrA04.6

Lyapunov Functions for Shuffle Asymptotic Stability of Discrete-Time Switched Systems, pp. 5787-5792.

Girard, Antoine — CNRS
Mason, Paolo — CNRS, Laboratoire Des Signaux Et Systèmes, Supélec

FrA05 Méditerranée C4

Robust Control I (Regular Session)

Chair: Ossmann, Daniel — German Aerospace Center (DLR)
Co-Chair: Yagoubi, Mohamed — IMT Atlantique

10:00-10:20 FrA05.1

Robust Derivative Feedback Control for Systems with Uncertain Equilibrium States, pp. 5793-5798.

Arthur, Khalid M. — University of New Hampshire
Yoon, Se Young (Pablo) — University of New Hampshire

10:20-10:40 FrA05.2

A Robust Tracking Control for Unicycle Mobile Robots: An Attractive Ellipsoid Approach, pp. 5799-5804.

Martínez, Contreras, Edgar Alejandro — Tecnologico Nacional de Mexico/ Instituto Tecnológico de La Laguna
Ríos, Héctor — CONACYT-Tecnológico Nacional de México/ Instituto Tecnológico de La Laguna
Mera, Manuel — UPIBI-IPN
González-Sierra, Jaime — Instituto Tecnológico de La Laguna

10:40-11:00 FrA05.3

Robustness Analysis of Continuous Periodic Systems Using Integral Quadratic Constraints, pp. 5805-5810.

Ossmann, Daniel — Munich University of Applied Sciences
Pfifer, Harald — University of Nottingham

11:00-11:20 FrA05.4

Projection/Reflection-Based Techniques for Multi-Objective Control Synthesis under Information Structure Constraints, pp. 5811-5818.

Yagoubi, Mohamed — CNRS-UMR 6004-CD0962

11:20-11:40 FrA05.5

Revisit of LQG Control--A New Paradigm with Recovered Robustness, pp. 5819-5825.

Chen, Xiang — University of Windsor
Zhou, Kemin — Shandong University of Science and Technology
Tan, Ying — University of Melbourne

11:40-12:00 FrA05.6

Robust Nash Static Output Feedback Strategy for Uncertain Markov Jump Delay Stochastic Systems, pp. 5826-5831.

Mukaidani, Hiroaki — Hiroshima University
Ramasamy, Saravanakumar — Hiroshima University
Xu, Hua — University of Tsukuba
Zhuang, Weihua — University of Waterloo

FrA06 Méditerranée A3

Optimization Algorithms IV (Regular Session)

Chair: Poveda, Jorge I. — University of Colorado, Boulder
Co-Chair: Han, Shuo — University of Illinois, Chicago

10:00-10:20 FrA06.1

Byzantine-Resilient Stochastic Gradient Descent for Distributed Learning: A Lipschitz-Inspired Coordinate-Wise Median Approach, pp. 5832-5837.

Yang, Haibo — Iowa State University
Zhang, Xin — Iowa State University
Fang, Minghong — Iowa State University
Liu, Jia — Iowa State University

10:20-10:40 FrA06.2

First-Order Optimization Algorithms with Resets and Hamiltonian Flows, pp. 5838-5843.

Teel, Andrew R. — University of California, Santa Barbara
Poveda, Jorge I. — University of Colorado, Boulder
Le, Justin — University of California, Santa Barbara

10:40-11:00 FrA06.3

Distributed Algorithm for Economic Dispatch Problem with Separable Losses, pp. 5844-5849.

Lee, Seungjoon — Seoul National University
Shim, Hyungbo — Seoul National University

11:00-11:20 FrA06.4

A Control-Theoretic Approach to Analysis and Parameter Selection of Douglas-Rachford Splitting, pp. 5850-5855.

Seidman, Jacob H. — University of Pennsylvania
Fazlyab, Mahyar — University of Pennsylvania
Preciado, Victor M. — University of Pennsylvania
Pappas, George J. — University of Pennsylvania

11:20-11:40 FrA06.5

Systematic Design of Decentralized Algorithms for Consensus Optimization, pp. 5856-5861.

Han, Shuo — University of Illinois, Chicago

11:40-12:00 FrA06.6

Distributed Alternating Direction Method of Multipliers for Linearly-Constrained Optimization Over a Network, pp. 5862-5867.

Carli, Raffaele — Politecnico di Bari
Dotoli, Mariagrazia — Politecnico di Bari

FrA07 Méditerranée A1

Flight Control (Regular Session)

Chair: Hamel, Tarek — Université de Nice Sophia Antipolis
Co-Chair: Pucci, Daniele — Istituto Italiano Di Tecnologia

10:00-10:20 FrA07.1

Robust Multivariable Sliding Mode Attitude Control for Enhanced Helicopter Handling Qualities, pp. 5868-5873.

Halbe, Omkar — Technical University of Munich
Hajek, Manfred — Technical University of Munich

10:20-10:40 FrA07.2

Stabilizing a VTOL Aircraft Based on Controlled Lagrangian Method, pp. 5874-5879.

Chen, Guanjun — Beihang University
Huo, Wei — Beijing University of Aero. & Astro

10:40-11:00 FrA07.3

Automatic Control of Convertible Fixed-Wing Drones with Vectorized Thrust, pp. 5880-5887.

anglade, andre — I3S, Université Cote D Azur, CNRS, Sophia Antipolis, France,
KAI, Jean-Marie — I3S CNRS Université Côte D'Azur
Hamel, Tarek — Université de Nice Sophia Antipolis
Samson, Claude — I3s/CNRS

11:00-11:20 FrA07.4

An Algebraic Solution for Tracking Bernoulli's Lemniscate Flight Trajectory in Airborne Wind Energy Systems, pp. 5888-5893.

Saraiva da Silva, Ramiro — Federal University of Santa Catarina
De Lellis, Marcelo — Federal University of Santa Catarina
Bruhns Bastos, Matheus — Federal University of Santa Catarina
Trofino, Alexandre — Federal University of Santa Catarina

11:20-11:40 FrA07.5

On the Existence of Flight Equilibria in Longitudinal Dynamics, pp. 5894-5899.

Pucci, Daniele — Istituto Italiano Di Tecnologia

11:40-12:00 FrA07.6

Limitations in Filtering Structural Vibrations for Unstable Missiles Control, pp. 5900-5905.

Hexner, Gyorgy — RAFAEL, Haifa ISRAEL

Kristalny, Maxim	Technion-IIT
Mirkin, Leonid	Technion-IIT

FrA08 Méditerranée 3

Distributed Parameter Systems II (Regular Session)

Chair: Georges, Didier	Grenoble Institute of Engineering
Co-Chair: Zare, Armin	University of Southern California

10:00-10:20 FrA08.1

Stabilization of PDE-ODE Cascade Systems Using Sylvester Equations, pp. 5906-5911.

Natarajan, Vivek	Indian Institute of Technology, Bombay

10:20-10:40 FrA08.2

A Variational Calculus Approach to Wildfire Monitoring Using a Low-Discrepancy Sequence-Based Deployment of Sensors, pp. 5912-5917.

Georges, Didier	Grenoble Institute of Engineering

10:40-11:00 FrA08.3

Drag Reduction in Turbulent Channel Flow Over Spatially Periodic Surfaces, pp. 5918-5923.

Ran, Wei	University of Southern California
Zare, Armin	University of Texas, Dallas
Jovanovic, Mihailo R.	University of Southern California

11:00-11:20 FrA08.4

Sensor and Actuator Placement for Proportional Feedback Control in Advection-Diffusion Equations, pp. 5924-5929.

Veldman, Daniël	Eindhoven University of Technology
Fey, Rob H.B.	Eindhoven University of Technology
Zwart, Hans	University of Twente
van de Wal, Marc	ASML
van den Boom, Joris	ASML
Nijmeijer, Hendrik	Eindhoven University of Technology

11:20-11:40 FrA08.5

Combined Backstepping/second-Order Sliding-Mode Boundary Stabilization of an Unstable Reaction-Diffusion Process, pp. 5930-5935.

Pisano, Alessandro	University of Cagliari
Orlov, Yury	CICESE
Pilloni, Alessandro	University of Cagliari
Usai, Elio	University of Cagliari

11:40-12:00 FrA08.6

Optimal Control for Cancer Chemotherapy under Tumor Heterogeneity, pp. 5936-5941.

Wang, Shuo	University of Texas, Arlington

FrA09 Méditerranée B12

Game Theory V (Regular Session)

Chair: Grammatico, Sergio	Delft University of Tech
Co-Chair: Pavel, Lacra	University of Toronto

10:00-10:20 FrA09.1

Discounted Mirror Descent Dynamics in Concave Games, pp. 5942-5947.

Gao, Bolin	University of Toronto
Pavel, Lacra	University of Toronto

10:20-10:40 FrA09.2

Distributed Generalized Nash Equilibrium Seeking in Aggregative Games under Partial-Decision Information Via Dynamic Tracking, pp. 5948-5954.

Belgioioso, Giuseppe	Eindhoven University of Technology
Nedich, Angelia	Arizona State University
Grammatico, Sergio	Delft University of Technology

10:40-11:00 FrA09.3

Entropy-Regularized Stochastic Games, pp. 5955-5962.

Savas, Yagiz	University of Texas, Austin
Ahmadi, Mohamadreza	California Institute of Technology
Tanaka, Takashi	University of Texas, Austin
Topcu, Ufuk	University of Texas, Austin

11:00-11:20 FrA09.4

Solving Ergodic Markov Decision Processes and Perfect Information Zero-Sum Stochastic Games by Variance Reduced Deflated Value Iteration, pp. 5963-5970.

Akian, Marianne	INRIA and CMAP, Ecole Polytechnique CNRS
Gaubert, Stephane	INRIA and Ecole Polytechnique
Qu, Zheng	University of Edinburgh
Saadi, Omar	CMAP, Ecole Polytechnique and INRIA

11:20-11:40 FrA09.5

Linear Equilibria for Dynamic LQG Games with Asymmetric Information and Dependent Types, pp. 5971-5976.

Heydaribeni, Nasimeh	University of Michigan, Ann Arbor
Anastasopoulos, Achilleas	University of Michigan

11:40-12:00 FrA09.6

Characterizing the Interplay between Information and Strength in Blotto Games, pp. 5977-5982.

Paarporn, Keith	University of California, Santa Barbara
Chandan, Rahul	University of California, Santa Barbara
Alizadeh, Mahnoosh	University of California Santa Barbara
Marden, Jason R.	University of California, Santa Barbara

FrA10 Méditerranée C12

Sliding-Mode Control I (Regular Session)

Chair: Orlov, Yury	CICESE
Co-Chair: Levant, Arie	Tel-Aviv University

10:00-10:20 FrA10.1

Robust and Optimal Control of Systems with Time Varying Unilateral Constraints Using Non-Smooth Transformation, pp. 5983-5988.

Oza, Harshal B.	Ahmedabad University
Orlov, Yury	CICESE

10:20-10:40 FrA10.2

On the Discretization of the Super-Twisting Algorithm, pp. 5989-5994.

Koch, Stefan	Graz University of Technology
Reichhartinger, Markus	Graz University of Technology

Horn, Martin	Graz University of Technology

10:40-11:00 FrA10.3

Semi-Implicit Discretization of the Uniform Robust Exact Differentiator, pp. 5995-6000.

Wetzlinger, Maximilian	Graz University of Technology
Reichhartinger, Markus	Graz University of Technology
Horn, Martin	Graz University of Technology
Fridman, Leonid	Universidad Nacional Autonoma de Mexico
Moreno, Jaime A.	Universidad Nacional Autonoma de Mexico

11:00-11:20 FrA10.4

Continuous Sliding-Mode Control for a Class of Underactuated Systems, pp. 6001-6006.

Ovalle, Luis	TecNM/Instituto Tecnológico de La Laguna
Ríos, Héctor	CONACYT-Tecnológico Nacional de México/ Instituto Tecnológico de La Laguna
Llama, Miguel	Instituto Tecnológico de La Laguna

11:20-11:40 FrA10.5

Discrete-Time Model Reference Adaptive Sliding Mode Control for Systems in State-Space Representation, pp. 6007-6012.

Steinberger, Martin	Graz University of Technology
Horn, Martin	Graz University of Technology
Ferrara, Antonella	University of Pavia

11:40-12:00 FrA10.6

Homogeneous Filtering and Differentiation Based on Sliding Modes, pp. 6013-6018.

Levant, Arie	Tel-Aviv University

FrA11 Galliéni 1

Estimation IV (Regular Session)

Chair: Antunes, Duarte	Eindhoven University of Technology
Co-Chair: Cantoni, Michael	University of Melbourne

10:00-10:20 FrA11.1

A Robust State Estimator for Multi-Agent Systems under Impulsive Noise and Missing Measurements, pp. 6019-6024.

Xie, Junfei	San Diego State University
Garcia Carrillo, Luis Rodolfo	Texas A&M University - Corpus Christi
Jin, Lei	Texas A&M University-Corpus Christi
Hespanha, Joao P.	University of California, Santa Barbara

10:20-10:40 FrA11.2

An Adaptive and Incremental Approach to Quantile Estimation, pp. 6025-6031.

Joseph, Ajin	Indian Institute of Science
Bhatnagar, Shalabh	Indian Institute of Science

10:40-11:00 FrA11.3

Optimization Based Input Preview Filtering for Dynamical Systems, pp. 6032-6037.

Lang, Adair	University of Melbourne
Cantoni, Michael	University of Melbourne

11:00-11:20 FrA11.4

Filtering and Smoothing in the Presence of Outliers Using Duality and Relaxed Dynamic Programming, pp. 6038-6043.

Andrien, Alex Rudolf Petrus	Eindhoven University of Technology
Antunes, Duarte	Eindhoven University of Technology

11:20-11:40 FrA11.5

Tracking of Multiple Targets across Distributed Platforms with FOV Constraints, pp. 6044-6049.

Allik, Bethany	US Army Research Laboratory

11:40-12:00 FrA11.6

Distributed Tracking Via Simultaneous Perturbation Stochastic Approximation-Based Consensus Algorithm, pp. 6050-6055.

Erofeeva, Victoria	Saint Petersburg State University
Granichin, Oleg	Saint Petersburg State University
Amelina, Natalia	Saint Petersburg State University
Ivanskiy, Yury	Saint Petersburg State University
Jiang, Yuming	Norwegian University of Science and Technology

FrA12 Galliéni 2

System Cones and Phase Bounded Systems (Invited Session)

Chair: Qiu, Li	Hong Kong University of Science and Technology
Co-Chair: Chen, Wei	Hong Kong University of Science and Technology
Organizer: Chen, Wei	Peking University
Organizer: Qiu, Li	Hong Kong University of Science and Technology

10:00-10:20 FrA12.1

Input-Feedforward-Passivity-Based Distributed Optimization Over Directed and Switching Topologies (I), pp. 6056-6061.

Li, Mengmou	University of Hong Kong
Chesi, Graziano	University of Hong Kong
Hong, Yiguang	Chinese Academy of Sciences

10:20-10:40 FrA12.2

Phase Analysis of MIMO LTI Systems (I), pp. 6062-6067.

Chen, Wei	Peking University
Wang, Dan	Hong Kong University of Science and Technology
Khong, Sei Zhen	University of Hong Kong
Qiu, Li	Hong Kong University of Science and Technology

10:40-11:00 FrA12.3

On the Optimal Control of Relaxation Systems (I), pp. 6068-6073.

Pates, Richard	Lund University
Bergeling, Carolina	Lund University
Rantzer, Anders	Lund University

11:00-11:20 FrA12.4

Karpelevich Theorem and the Positive Realization of Matrices, pp. 6074-6079.

Cacace, Filippo	Università Campus Biomedico di Roma
Germani, Alfredo	University of L'Aquila

Manes, Costanzo — University of L'Aquila

11:20-11:40 — FrA12.5

Controllability-Gramian Submatrices for a Network Consensus Model, pp. 6080-6085.

Roy, Sandip — Washington State University
Xue, Mengran — Washington State University

11:40-12:00 — FrA12.6

Finding Cones for K-Cooperative Systems, pp. 6086-6091.

Kousoulidis, Dimitris — University of Cambridge
Forni, Fulvio — University of Cambridge

FrA13 — Galliéni 4

Uncertain Systems I (Regular Session)

Chair: Guay, Martin — Queens University
Co-Chair: Campi, M. C. — University of Brescia

10:00-10:20 — FrA13.1

Change Detection with the Kernel Cumulative Sum Algorithm, pp. 6092-6099.

Flynn, Thomas — Brookhaven National Laboratory
Yoo, Shinjae — Brookhaven National Laboratory

10:20-10:40 — FrA13.2

Sieving Out Unnecessary Constraints in Scenario Optimization with an Application to Power Systems, pp. 6100-6105.

Picallo, Miguel — ETH Zurich
Dörfler, Florian — ETH Zurich

10:40-11:00 — FrA13.3

Extremum Seeking Regulator Design with Derivative Action for Uncertain Systems, pp. 6106-6111.

Guay, Martin — Queens University
Atta, Khalid — Luleå University of Technology

11:00-11:20 — FrA13.4

Switching-Based Rejection of Multi-Sinusoidal Disturbance in Uncertain Stable Linear Systems under Measurement Noise, pp. 6112-6117.

Wang, Yang — Imperial College London
Pin, Gilberto — Electrolux Italia S.p.A. (Italy)
Serrani, Andrea — The Ohio State University
Parisini, Thomas — Imperial College & University of Trieste

11:20-11:40 — FrA13.5

Non-Stochastic Hypothesis Testing with Application to Privacy against Hypothesis-Testing Adversary, pp. 6118-6123.

Farokhi, Farhad — University of Melbourne and CSIRO

11:40-12:00 — FrA13.6

The Scenario Approach Meets Uncertain Game Theory and Variational Inequalities, pp. 6124-6129.

Paccagnan, Dario — University of California, Santa Barbara
Campi, M. C. — University of Brescia

FrA14 — Galliéni 7

Stability of Nonlinear Systems I (Regular Session)

Chair: Morgansen, Kristi A. — University of Washington
Co-Chair: Efimov, Denis — INRIA

10:00-10:20 — FrA14.1

Model Development and Stability Analysis for a Shape-Controlled, Bluff-Body Hydrodynamic Vehicle, pp. 6130-6137.

Adibi, Sierra A. — University of Washington
Morgansen, Kristi A. — University of Washington

10:20-10:40 — FrA14.2

Geometric Attitude Control Via Contraction on Manifolds with Automatic Gain Selection, pp. 6138-6145.

Vang, Bee — Boston University
Tron, Roberto — Boston University

10:40-11:00 — FrA14.3

Higher Order Derivatives of Lyapunov Functions for Stability of Systems with Inputs, pp. 6146-6151.

Liu, Shenyu — Coordinated Science Laboratory, University of Illinois, Urbana Champaign
Liberzon, Daniel — University of Illinois, Urbana Champaign

11:00-11:20 — FrA14.4

Towards Enhancing Robustness of Prescribed Performance Controllers in the Presence of Control Input Delays, pp. 6152-6157.

Bikas, Lampros N. — Aristotle University of Thessaloniki
Rovithakis, George A. — Aristotle University of Thessaloniki

11:20-11:40 — FrA14.5

Long-Term Behavior of Mean-Field Noisy Bounded Confidence Models with Distributed Radicals, pp. 6158-6163.

Sharifi Kolarijani, Mohamad Amin — Delft University of Technology
Proskurnikov, Anton V. — Politecnico di Torino
Mohajerin Esfahani, Peyman — Delft University of Technology

11:40-12:00 — FrA14.6

Robust Stability Analysis and Implementation of Persidskii Systems, pp. 6164-6168.

Efimov, Denis — INRIA
Aleksandrov, Alexander — Saint Petersburg State University

FrA15 — Rhodes GH

Optimal Control IV (Regular Session)

Chair: van Keulen, Thijs — Eindhoven University of Technology
Co-Chair: Maggistro, Rosario — Università Ca' Foscari Venezia

10:00-10:20 — FrA15.1

Online Active Perception for Partially Observable Markov Decision Processes with Limited Budget, pp. 6169-6174.

Ghasemi, Mahsa — University of Texas, Austin
Topcu, Ufuk — University of Texas, Austin

10:20-10:40 — FrA15.2

A Framework for the Control of Bilevel Sweeping Processes, pp. 6175-6180.

T. Khalil, Nathalie — Universidade do Porto
Lobo Pereira, Fernando — Universidade do Porto

10:40-11:00 — FrA15.3

State Space Collapse in Resource Allocation for Demand Dispatch, pp. 6181-6188.

Mathias, Joel	University of Florida
Moye, Robert	University of Florida
Meyn, Sean P.	University of Florida
Warrington, Joseph	ETH Zurich

11:00-11:20 FrA15.4

Adaptive Dynamic Programming Using Lyapunov Function Constraints, pp. 6189-6194.

Göhrt, Thomas	Technische Universität Chemnitz
Osinenko, Pavel	Technische Universität Chemnitz
Streif, Stefan	Technische Universität Chemnitz

11:20-11:40 FrA15.5

Optimal Motion of a Scallop: Some Case Studies, pp. 6195-6200.

Zoppello, Marta	Politecnico di Torino
Maggistro, Rosario	Università Ca' Foscari Venezia

11:40-12:00 FrA15.6

Solution for the Continuous-Time Infinite-Horizon Linear Quadratic Regulator Subject to Scalar State Constraints, pp. 6201-6206.

van Keulen, Thijs	Eindhoven University of Technology

FrA16 Rhodes AB

Real-Time Optimization Methods for Power Systems (Invited Session)

Chair: Colombino, Marcello	NREL
Co-Chair: Scherpen, Jacquelien M.A.	University of Groningen
Organizer: Colombino, Marcello	McGill University

10:00-10:20 FrA16.1

Towards Robustness Guarantees for Feedback-Based Optimization (I), pp. 6207-6214.

Colombino, Marcello	McGill University
Simpson-Porco, John W.	University of Waterloo
Bernstein, Andrey	National Renewable Energy Lab (NREL)

10:20-10:40 FrA16.2

Distributed Control of DC Microgrids Using Primal-Dual Dynamics (I), pp. 6215-6220.

Kosaraju, Krishna Chaitanya	University of Groningen
Cucuzzella, Michele	University of Groningen
Scherpen, Jacquelien M.A.	University of Groningen

10:40-11:00 FrA16.3

On the Convergence of the Inexact Running Krasnosel'skii-Mann Method, pp. 6221-6226.

Dall'Anese, Emiliano	University of Colorado, Boulder
Simonetto, Andrea	IBM Research Ireland
Bernstein, Andrey	National Renewable Energy Lab (NREL)

11:00-11:20 FrA16.4

Sufficient Conditions for Exact Semidefinite Relaxation of Optimal Power Flow in Unbalanced Multiphase Radial Networks, pp. 6227-6233.

Zhou, Fengyu	California Institute of Technology
Chen, Yue	Tsinghua University
Low, Steven	California Institute of Technology

11:20-11:40 FrA16.5

Penalized Push-Sum Algorithm for Constrained Distributed Optimization with Application to Energy Management in Smart Grid, pp. 6234-6241.

Tatarenko, Tatiana	Technical University of Darmstadt
Zimmermann, Jan	Technical University of Darmstadt
Willert, Volker	Technical University of Darmstadt
Adamy, Jürgen	Technical University of Darmstadt

11:40-12:00 FrA16.6

Distributed Model Predictive Control for Autonomous Droop-Controlled Inverter-Based Microgrids, pp. 6242-6248.

Anderson, Sean	University of California, Berkeley
Hidalgo-Gonzalez, Patricia	University of California, Berkeley
Dobbe, Roel	University of California, Berkeley
Tomlin, Claire J.	University of California, Berkeley

FrA17 Rhodes CD

Formal Methods in Control (Invited Session)

Chair: Reissig, Gunther	Bundeswehr University Munich
Co-Chair: Kong, Zhaodan	University of California, Davis
Organizer: Reissig, Gunther	Bundeswehr University Munich
Organizer: Ehlers, Ruediger	Clausthal University of Technology

10:00-10:20 FrA17.1

Computing Controlled Invariant Sets in Two Moves (I), pp. 6249-6254.

Anevlavis, Tzanis	University of California, Los Angeles
Tabuada, Paulo	University of California, Los Angeles

10:20-10:40 FrA17.2

Efficient Synthesis for Monotone Transition Systems and Directed Safety Specifications (I), pp. 6255-6260.

Saoud, Adnane	CentraleSupélec
Ivanova, Elena	CNRS, CentraleSupelec, Université Paris-Sud, Université Paris-Sa
Girard, Antoine	CNRS

10:40-11:00 FrA17.3

Incremental Abstraction Computation for Symbolic Controller Synthesis in a Changing Environment (I), pp. 6261-6268.

Bai, Yunjun	SKLCS, Institute of Software, Chinese Academy of Sciences, Univ
Mallik, Kaushik	MPI-SWS (Max Planck Institute for Software Systems)
Schmuck, Anne-Kathrin	MPI-SWS
Zufferey, Damien	MPI-SWS
Majumdar, Rupak	University of California, Los Angeles

11:00-11:20 FrA17.4

Semantic Inference for Cyber-Physical Systems with Signal Temporal Logic, pp. 6269-6274.

Chen, Gang	University of California, Davis
Liu, Mei	University of Hong Kong
Kong, Zhaodan	University of California, Davis

11:20-11:40 FrA17.5

Strategy Synthesis for Surveillance-Evasion Games with Learning-Enabled Visibility Optimization (I), pp. 6275-6281.

Bharadwaj, Sudarshanan	University of Texas, Austin
Ly, Louis	University of Texas, Austin
Wu, Bo	University of Texas, Austin
Tsai, Yen Hsi Richard	University of Texas, Austin
Topcu, Ufuk	University of Texas, Austin

11:40-12:00 FrA17.6

Temporal Logic Planning in Uncertain Environments with Probabilistic Roadmaps and Belief Spaces, pp. 6282-6287.

Haesaert, Sofie	Eindhoven University of Technology
Thakker, Rohan A	Jet Propulsion Lab
Nilsson, Petter	California Institute of Technology
Agha-mohammadi, Ali-akbar	NASA-JPL, California Institute of Technology
Murray, Richard M.	California Institute of Technology

FrA18 Rhodes EF

Hybrid Systems I (Regular Session)

Chair: Normand-Cyrot, Dorothée	CNRS
Co-Chair: Sanfelice, Ricardo G.	University of California, Santa Cruz

10:00-10:20 FrA18.1

Disturbance Decoupling in Nonlinear Impulsive Systems, pp. 6288-6294.

Zattoni, Elena	Università di Bologna
Perdon, Anna Maria	Università Politecnica delle Marche
Conte, Giuseppe	Università Politecnica delle Marche
Moog, Claude H.	CNRS

10:20-10:40 FrA18.2

Optimal Walking Speed Transitions for Fully Actuated Bipedal Robots, pp. 6295-6300.

Murali, Vishal	Georgia Institute of Technology
Ames, Aaron D.	California Institute of Technology
Verriest, Erik I.	Georgia Institute of Technology

10:40-11:00 FrA18.3

Time-Optimal Control for the Hybrid Double Integrator with State-Driven Jumps, pp. 6301-6306.

Cristofaro, Andrea	University of Oslo
Possieri, Corrado	Politecnico di Torino
Sassano, Mario	University of Rome, Tor Vergata

11:00-11:20 FrA18.4

On the Zero-Dynamics of a Class of Hybrid LTI Systems: A Geometric Approach, pp. 6307-6312.

Mattioni, Mattia	University of Roma La Sapienza
Monaco, Salvatore	University of Roma La Sapienza
Normand-Cyrot, Dorothée	CNRS

11:20-11:40 FrA18.5

Robust Regulation for Linear Systems Using Impulsive Observers, pp. 6313-6318.

Jaramillo, Oscar David	Center for Research and Advanced Studies of the National Polytec.
Castillo-Toledo, Bernardino	CINVESTAV-GDL, Mexico
Di Gennaro, Stefano	University of L'Aquila

11:40-12:00 FrA18.6

Multiple Barrier Function Certificates for Weak Forward Invariance in Hybrid Inclusions, pp. 6319-6324.

Maghenem, Mohamed Adlene	University of California, Santa Cruz
Sanfelice, Ricardo G.	University of California, Santa Cruz

FrA19 Galliéni 5

Stochastic Optimal Control I (Regular Session)

Chair: Basar, Tamer	University of Illinois, Urbana Champaign
Co-Chair: Jain, Rahul	University of Southern California

10:00-10:20 FrA19.1

Convex Optimization Over Sequential Linear Feedback Policies with Continuous-Time Chance Constraints, pp. 6325-6331.

Oguri, Kenshiro	University of Colorado
Ono, Masahiro	Jet Propulsion Laboratory, California Institute of Technology
McMahon, Jay	University of Colorado

10:20-10:40 FrA19.2

Monte Carlo Tree Search with Optimal Computing Budget Allocation, pp. 6332-6337.

Li, Yunchuan	University of Maryland
Fu, Michael C.	University of Maryland
Xu, Jie	George Mason University

10:40-11:00 FrA19.3

Sequential Dynamic Resource Allocation for Epidemic Control, pp. 6338-6343.

Fekom, Mathilde	ENS Paris-Saclay
Vayatis, Nicolas	Ecole Normale Superieure de Cachan
Kalogeratos, Argyris	ENS Paris Saclay

11:00-11:20 FrA19.4

Empirical Algorithms for Stochastic Systems with Continuous States and Actions, pp. 6344-6349.

Sharma, Hiteshi	USC
Jain, Rahul	University of Southern California
Haskell, William B.	National University of Singapore

11:20-11:40 FrA19.5

Stochastic Zero-Sum Differential Games for Forward-Backward SDEs, pp. 6350-6355.

Moon, Jun	University of Seoul
Basar, Tamer	University of Illinois, Urbana Champaign

11:40-12:00 FrA19.6

Optimization-Based Estimation of Expected Values with Application to Stochastic Programming, pp. 6356-6361.

Chinchilla, Raphael	University of California, Santa Barbara
Hespanha, Joao P.	University of California, Santa Barbara

FrA20 Rhodes 10

Distributed Control IV (Regular Session)

Chair: Sandberg, Henrik — KTH Royal Institute of Technology
Co-Chair: Notarstefano, Giuseppe — University of Bologna

10:00-10:20 FrA20.1

A Randomized Block Subgradient Approach to Distributed Big Data Optimization, pp. 6362-6367.

Farina, Francesco — University of Bologna
Notarstefano, Giuseppe — University of Bologna

10:20-10:40 FrA20.2

A Graph-Theoretic Approach to the H_infty Performance of Leader-Follower Consensus on Directed Networks, pp. 6368-6373.

Pirani, Mohammad — KTH Royal Institute of Technology
Sandberg, Henrik — KTH Royal Institute of Technology
Johansson, Karl H. — KTH Royal Institute of Technology

10:40-11:00 FrA20.3

Distributed Constraint-Coupled Optimization Over Random Time-Varying Graphs Via Primal Decomposition and Block Subgradient Approaches, pp. 6374-6379.

Camisa, Andrea — University of Bologna
Farina, Francesco — University of Bologna
Notarnicola, Ivano — University of Bologna
Notarstefano, Giuseppe — University of Bologna

11:00-11:20 FrA20.4

Asynchronous Distributed Optimization Via Dual Decomposition and Block Coordinate Ascent, pp. 6380-6385.

Lin, Yankai — University of Melbourne
Shames, Iman — University of Melbroune
Nesic, Dragan — University of Melbourne

11:20-11:40 FrA20.5

A General Framework of Exact Primal-Dual First-Order Algorithms for Distributed Optimization, pp. 6386-6391.

Mansoori, Fatemeh — Northwestern University
Wei, Ermin — Northwestern Univeristy

11:40-12:00 FrA20.6

Dynamic Reduction of the Iterations Requirement in a Distributed Model Predictive Control, pp. 6392-6397.

DAI, XIANG — CentraleSupélec
Bourdais, Romain — CentraleSupelec
Gueguen, Herve — CentraleSupelec

FrA21 Risso 6

Networked Control Systems IV (Regular Session)

Chair: Hanebeck, Uwe D. — Karlsruhe Institute of Technology
Co-Chair: Touri, Behrouz — University of California, San Diego

10:00-10:20 FrA21.1

Scheduling for Stabilization Over Capacity-Constrained Channels, pp. 6398-6403.

Rokade, Kiran — Indian Institute of Technology, Madras
Kamath, Gopal Krishna — Texas A&M University
Kalaimani, Rachel Kalpana — Indian Institute of Technology, Madras

10:20-10:40 FrA21.2

Near-Optimal Solution to Non-Uniform Sampling Problem in Kalman Filtering, pp. 6404-6411.

Hartman, David — University of Maryland, College Park
Baras, John S. — University of Maryland

10:40-11:00 FrA21.3

Event-Triggered Approximate Leader-Follower Consensus with Resilience to Byzantine Adversaries, pp. 6412-6417.

Zegers, Federico — University of Florida
Deptula, Patryk — University of Florida
Shea, John M. — University of Florida
Dixon, Warren E. — University of Florida

11:00-11:20 FrA21.4

On Discrete-Time H-Inf Optimization under Intermittent Communications, pp. 6418-6423.

Braksmayer, Maor — Technion - IIT
Mirkin, Leonid — Technion - IIT

11:20-11:40 FrA21.5

Sequence-Based Stochastic Receding Horizon Control Using IMM Filtering and Value Function Approximation, pp. 6424-6430.

Rosenthal, Florian — Karlsruhe Institute of Technology
Hanebeck, Uwe D. — Karlsruhe Institute of Technology

11:40-12:00 FrA21.6

On Graphs with Bounded and Unbounded Convergence Times in Social Hegselmann-Krause Dynamics, pp. 6431-6436.

Parasnis, Rohit Yashodhar — University of California, San Diego
Franceschetti, Massimo — University of California, San Diego
Touri, Behrouz — University of California, San Diego

FrA22 Risso 7

Nonlinear Systems Identification I (Regular Session)

Chair: Prandini, Maria — Politecnico di Milano
Co-Chair: Andersson, Sean B. — Boston University

10:00-10:20 FrA22.1

Local Model Networks for the Identification of Nonlinear State Space Models, pp. 6437-6442.

Schüssler, Max — University of Siegen
Münker, Tobias — University of Siegen
Nelles, Oliver — University of Siegen

10:20-10:40 FrA22.2

Variable Selection for a Nonparametric Nonlinear System by Directional Regression, pp. 6443-6448.

Cheng, Changming — Shang Jiaotong University
Bai, Er-Wei — University of Iowa

10:40-11:00 FrA22.3

Data-Based Robust MPC with Componentwise Hölder Kinky Inference, pp. 6449-6454.

Manzano, Jose Maria — University of Seville
Limon, Daniel — University of Seville
Muñoz de la Peña, David — University of Seville
Calliess, Jan-Peter — University of Oxford

11:00-11:20 FrA22.4

Occupation Kernels and Densely Defined Liouville Operators for System Identification, pp. 6455-6460.

Rosenfeld, Joel A.	University of South Florida
Kamalapurkar, Rushikesh	Oklahoma State University
Russo, Benjamin	Farmingdale State College
Johnson, Taylor T	Vanderbilt University

11:20-11:40 FrA22.5

Nonlinear System Identification with Model Structure Selection Via Distributed Computation, pp. 6461-6466.

Bianchi, Federico	Politecnico di Milano
Falsone, Alessandro	Politecnico di Milano
Prandini, Maria	Politecnico di Milano
Piroddi, Luigi	Politecnico di Milano

11:40-12:00 FrA22.6

Simultaneous Localization and Parameter Estimation for Single Particle Tracking Via Sigma Points Based EM, pp. 6467-6472.

Lin, Ye	Boston University
Andersson, Sean B.	Boston University

FrA23 Risso 8

Machine Learning in Complex Networks II (Invited Session)

Chair: Patrinos, Panagiotis	Katholieke Universiteit Leuven
Co-Chair: Zhang, Kaiqing	University of Illinois, Urbana Champaign
Organizer: Basar, Tamer	University of Illinois, Urbana Champaign
Organizer: Liu, Ji	Stony Brook University
Organizer: Shi, Wei	Arizona State University
Organizer: Zhang, Kaiqing	University of Illinois, Urbana Champaign

10:00-10:20 FrA23.1

Off-Policy Reinforcement-Learning Algorithm to Solve Minimax Games on Graphs (I), pp. 6473-6478.

Lopez Mejia, Victor Gabriel	University of Texas, Arlington
Vamvoudakis, Kyriakos G.	Georgia Institute of Technology
Wan, Yan	University of Texas, Arlington
Lewis, Frank L.	University of Texas, Arlington

10:20-10:40 FrA23.2

Exploiting Fast Decaying and Locality in Multi-Agent MDP with Tree Dependence Structure (I), pp. 6479-6486.

Qu, Guannan	Harvard University
Li, Na	Harvard University

10:40-11:00 FrA23.3

Completion of Rectangular Matrices Using Asymmetric Ramanujan Graphs, pp. 6487-6490.

Burnwal, Shantanu Prasad	Indian Institute of Technology, Hyderabad
Vidyasagar, Mathukumalli	Indian Institute of Technology, Hyderabad

11:00-11:20 FrA23.4

Learning Safe Policies Via Primal-Dual Methods, pp. 6491-6497.

Paternain, Santiago	University of Pennsylvania
Calvo-Fullana, Miguel	University of Pennsylvania
de Oliveira Chamon, Luiz Fernando	University of Pennsylvania
Ribeiro, Alejandro	University of Pennsylvania

11:20-11:40 FrA23.5

Safe Learning-Based Control of Stochastic Jump Linear Systems: A Distributionally Robust Approach (I), pp. 6498-6503.

Schuurmans, Mathijs	Katholieke Universiteit Leuven
Sopasakis, Pantelis	Katholieke Universiteit Leuven
Patrinos, Panagiotis	Katholieke Universiteit Leuven

11:40-12:00 FrA23.6

Avoiding Chatter in an Online Co-Learning Algorithm Predicting Human Intention (I), pp. 6504-6509.

Young, Carol	Georgia Institute of Technology
Yao, Ningshi	Georgia Institute of Technology
Zhang, Fumin	Georgia Institute of Technology

FrA24 Hermès

Iterative Learning Control I (Regular Session)

Chair: Rogers, Eric	University of Southampton
Co-Chair: Lin, Zongli	University of Virginia

10:00-10:20 FrA24.1

Using Reinforcement Learning for Model-Free Linear Quadratic Control with Process and Measurement Noises, pp. 6510-6517.

Adib Yaghmaie, Farnaz	Linkoping University
Gustafsson, Fredrik	Linkoping University

10:20-10:40 FrA24.2

Design of Iterative Learning Control Schemes for Spatially Interconnected Systems, pp. 6518-6523.

Maniarski, Robert	University of Zielona Góra
Klimkowicz, Kamil	University of Zielona Gora
Paszke, Wojciech	University of Zielona Gora
Rogers, Eric	University of Southampton

10:40-11:00 FrA24.3

Motion Control of a Soft Circular Crawling Robot Via Iterative Learning Control, pp. 6524-6529.

Chi, Haozhen	Zhejiang University
Li, Xuefang	Imperial College London
Liang, Wenyu	National University of Singapore
Wu, Yan	A*STAR Institute for Infocomm Research
Ren, Qinyuan	Zhejiang University

11:00-11:20 FrA24.4

Constrained Observer Based Iterative Learning Control Design in the Repetitive Process Setting, pp. 6530-6535.

Emelianova, Julia	Arzamas Polytechnic Institute of R.E. Alekseev Nizhny Novgorod
Pakshin, Pavel	Arzamas Polytechnic Institute of R.E. Alekseev Nizhny Novgorod
Galkowski, Krzysztof	University of Zielona Gora
Rogers, Eric	University of Southampton

11:20-11:40 FrA24.5

Model-Free Optimal Stabilization of Unknown Time Delay Systems Using Adaptive Dynamic Programming, pp. 6536-6541.

Rizvi, Syed Ali Asad	University of Virginia
Wei, Yusheng	University of Virginia
Lin, Zongli	University of Virginia

11:40-12:00 FrA24.6

Intermittent Sampling in Iterative Learning Control: A Monotonically-Convergent Gradient-Descent Approach with Application to Time Stamping, pp. 6542-6547.

Strijbosch, Nard — Eindhoven University of Technology

Oomen, Tom — Eindhoven University of Technology

FrA25 Athéna

Power Systems I (Regular Session)

Chair: Ferrari-Trecate, Giancarlo — Ecole Polytechnique Fédérale de Lausanne

Co-Chair: Henrion, Didier — LAAS-CNRS

10:00-10:20 FrA25.1

Generalized Active Disturbance Rejection Controller for Load Frequency Control in Power Systems, pp. 6548-6553.

Jain, Shivam — Indian Institute of Technology, Roorkee

Hote, Yogesh Vijay — Indian Institute of Technology, Roorkee

10:20-10:40 FrA25.2

Learning Graph Parameters from Linear Measurements: Fundamental Trade-Offs and Application to Electric Grids, pp. 6554-6559.

Li, Tongxin — 1993

Werner, Lucien — California Institute of Technology

Low, Steven — California Institute of Technology

10:40-11:00 FrA25.3

A Nonlinear Coordinated Approach to Enhance the Transient Stability of Wind Energy-Based Power Systems, pp. 6560-6565.

Morshed, Mohammad Javad — University of Louisiana, Lafayette

sardoueinasab, zahra — University of Louisiana, Lafayette

Fekih, Afef — University of Louisiana, Lafayette

11:00-11:20 FrA25.4

A Supervisory Control Structure for Voltage-Controlled Islanded DC Microgrids, pp. 6566-6571.

La Bella, Alessio — Politecnico di Milano

Nahata, Pulkit — École Polytechnique Fédérale de Lausanne

Ferrari-Trecate, Giancarlo — École Polytechnique Fédérale de Lausanne

11:20-11:40 FrA25.5

Maximal Positively Invariant Set Determination for Transient Stability Assessment in Power Systems, pp. 6572-6577.

Oustry, Antoine — École Polytechnique and RTE

Cardozo, Carmen — RTE

Panciatici, Patrick — RTE

Henrion, Didier — LAAS-CNRS

11:40-12:00 FrA25.6

Robust Real-Time Inverter-Based Reactive PowerCompensation, pp. 6578-6583.

Gwynn, Benjamin — None

de Callafon, Raymond A. — University of California, San Diego

FrA26 Apollon

Payoff Dynamics and Higher-Order Learning in Population Games (Tutorial Session)

Chair: Park, Shinkyu — Princeton University

Co-Chair: Martins, Nuno C. — University of Maryland

Organizer: Park, Shinkyu — Princeton University

Organizer: Martins, Nuno C. — University of Maryland

Organizer: Shamma, Jeff S. — King Abdullah University of Science and Technology (KAUST)

10:00-10:05 FrA26.1

Introduction to Payoff Dynamics and Higher Order Learning in Population Games (I).*

Shamma, Jeff S. — King Abdullah University of Science and Technology (KAUST)

10:05-10:35 FrA26.2

Population Games: Motivation and Foundational Concepts (I).*

Shamma, Jeff S. — King Abdullah University of Science and Technology (KAUST)

10:35-11:10 FrA26.3

Stability Analysis: Potential and Contractive Games (I).*

Martins, Nuno C. — University of Maryland

11:10-12:00 FrA26.4

From Population Games to Payoff Dynamics Models: A Passivity-Based Approach (I), pp. 6584-6601.

Park, Shinkyu — Princeton University

Martins, Nuno C. — University of Maryland

Shamma, Jeff S. — King Abdullah University of Science and Technology (KAUST)

FrB01 Méditerranée 1

Biomolecular Systems (Regular Session)

Chair: Zechner, Christoph — Max Planck Institute of Molecular Cell Biology and Genetics

Co-Chair: Gyorgy, Andras — New York University, Abu Dhabi

14:00-14:20 FrB01.1

Combining Transcriptional and Translational Resource Allocation Controllers for Synthetic Circuits, pp. 6602-6609.

Darlington, Alexander — University of Warwick

Bates, Declan G. — University of Warwick

14:20-14:40 FrB01.2

Path Mutual Information for a Class of Biochemical Reaction Networks, pp. 6610-6615.

Duso, Lorenzo — Max Planck Institute of Molecular Cell Biology and Genetics

Zechner, Christoph — Max Planck Institute of Molecular Cell Biology and Genetics

14:40-15:00 FrB01.3

Time-Scale Separation Based Design of Biomolecular Feedback Controllers, pp. 6616-6621.

Grunberg, Theodore — Massachusetts Institute of Technology

Del Vecchio, Domitilla — Massachusetts Institute of Technology

15:00-15:20 FrB01.4

How Cell-To-Cell Heterogeneity and Scarce Resources Shape the Population-Level Stability Profile of Toggle Switches, pp. 6622-6627.

Gyorgy, Andras	New York University, Abu Dhabi

15:20-15:40 FrB01.5

Qualitative Behavior and Robustness of Dendritic Trafficking, pp. 6628-6633.

Aljaberi, Saeed	University of Cambridge
O'Leary, Timothy	University of Cambridge
Forni, Fulvio	University of Cambridge

15:40-16:00 FrB01.6

PID and State Feedback Controllers Using DNA Strand Displacement Reactions, pp. 6634-6639.

Paulino, Nuno	University of Warwick
Foo, Mathias	Coventry University
Kim, Jongmin	Pohang University of Science and Technology
Bates, Declan G.	University of Warwick

FrB02 Méditerranée 2

Linear Systems II (Regular Session)

Chair: Azuma, Shun-ichi	Nagoya University
Co-Chair: Hu, Xiaoming	KTH Royal Institute of Technology

14:00-14:20 FrB02.1

Globally Optimal Least-Squares ARMA Model Identification Is an Eigenvalue Problem, pp. 6640-6645.

Vermeersch, Christof	Katholieke Universiteit Leuven
De Moor, Bart L.R.	Katholieke Universiteit Leuven

14:20-14:40 FrB02.2

Data-Driven Output Channel Design for Maximizing Passivity Index, pp. 6646-6650.

Tanemura, Masaya	Shinshu University
Azuma, Shun-ichi	Nagoya University

14:40-15:00 FrB02.3

A Probabilistic Measure for Optimal Actuator and Sensor Placement for Linear Systems with Packet Dropouts, pp. 6651-6656.

Dilip, Sanand	Indian Institute of Technology, Kharagpur

15:00-15:20 FrB02.4

An Input-Output Parametrization of Stabilizing Controllers: Amidst Youla and System Level Synthesis, pp. 6657-6662.

Furieri, Luca	ETH Zurich
Zheng, Yang	University of Oxford
Papachristodoulou, Antonis	University of Oxford
Kamgarpour, Maryam	ETH Zurich

15:20-15:40 FrB02.5

Inverse Optimal Control for Finite-Horizon Discrete-Time Linear Quadratic Regulator under Noisy Output, pp. 6663-6668.

Zhang, Han	KTH Royal Institute of Technology
Li, Yibei	KTH Royal Institute of Technology
Hu, Xiaoming	KTH Royal Institute of Technology

FrB03 Méditerranée 5

Automotive Control I (Regular Session)

Chair: Kolmanovsky, Ilya V.	University of Michigan
Co-Chair: Donkers, M.C.F.	Eindhoven University of Technology

14:00-14:20 FrB03.1

Nonlinear Traction Control Design, Stability Analysis and Experiments for Vehicles with On-Demand 4WD Torque Bias Systems, pp. 6669-6674.

Reichensdörfer, Elias	Technical University of Munich and BMW Group
Degel, Wolfgang	BMW M
Odenthal, Dirk	German Aerospace Center (dlr) Oberpfaffenhofen
Wollherr, Dirk	Technische Universität München

14:20-14:40 FrB03.2

Global Solutions to the Complete Vehicle Energy Management Problem Via Forward-Backward Operator Splitting, pp. 6675-6680.

Padilla Cazar, G. P.	Eindhoven University of Technology
Belgioioso, Giuseppe	Eindhoven University of Technology
Donkers, M.C.F.	Eindhoven University of Technology

14:40-15:00 FrB03.3

Bayesian Learning of Tire Friction with Automotive-Grade Sensors by Gaussian-Process State-Space Models, pp. 6681-6686.

Berntorp, Karl	Mitsubishi Electric Research Labs
Kitano, Hiroaki	Mitsubishi Electric Corp., Adv. Technology R&D Center

15:00-15:20 FrB03.4

A One-Step Feasible Negotiation Algorithm for Distributed Trajectory Generation of Autonomous Vehicles, pp. 6687-6693.

Kneissl, Maximilian	DENSO Automotive Deutschland GmbH
Molin, Adam	DENSO Automotive Deutschland GmbH
Esen, Hasan	DENSO Automotive Deutschland GmbH
Hirche, Sandra	Technische Universität München

15:20-15:40 FrB03.5

Robust Hierarchical MPC for Handling Long Horizon Demand Forecast Uncertainty with Application to Automotive Thermal Management, pp. 6694-6699.

Amini, Mohammad Reza	University of Michigan
Kolmanovsky, Ilya V.	University of Michigan
Sun, Jing	University of Michigan

15:40-16:00 FrB03.6

A Time-Efficient Integrated Path-Tracking and Control Allocation Method for Autonomous Electric Vehicle, pp. 6700-6705.

Li, Boyuan	Cranfield University
Siampis, Efstathios	Delta Motorsport
Lin, Chenhui	Cranfield University
Longo, Stefano	Cranfield University
Velenis, Efstathios	Cranfield University

FrB04 Méditerranée A2

Analysis and Control Methods to Improve Resilience of Discrete-Event Systems (Invited Session)

Chair: Su, Rong	Nanyang Technological University

Co-Chair: Yin, Xiang — Shanghai Jiao Tong University
Organizer: Su, Rong — Nanyang Technological University
Organizer: Yin, Xiang — Shanghai Jiao Tong University

14:00-14:20 FrB04.1

Online Supervisory Control of Networked Discrete-Event Systems with Control Delays (I), pp. 6706-6711.

Liu, Zhaocong — Shanghai Jiao Tong University
Yin, Xiang — Shanghai Jiao Tong University
Shu, Shaolong — Tongji University
Li, Shaoyuan — Shanghai Jiao Tong University

14:20-14:40 FrB04.2

Verification of AA-Diagnosability in Probabilistic Finite Automata Is PSPACE-Hard (I), pp. 6712-6717.

Keroglou, Christoforos — University of Michigan, Ann Arbor
Hadjicostis, Christoforos N. — University of Cyprus

14:40-15:00 FrB04.3

Verification of Nonblockingness in Bounded Petri Nets with a Semi-Structural Approach (I), pp. 6718-6723.

Gu, Chao — Xidian University & University of Cagliari
Ma, Ziyue — Xidian University
Li, Zhiwu — Xidian University
Giua, Alessandro — University of Cagliari

15:00-15:20 FrB04.4

Predictive Supervisory Control for Timed Discrete Event Systems under Communication Delays (I), pp. 6724-6729.

Miao, Chengshi — Tongji University
Shu, Shaolong — Tongji University
Lin, Feng — Wayne State University

15:20-15:40 FrB04.5

Supervisor Synthesis for Networked Discrete Event Systems with Communication Delays and Lossy Channels (I), pp. 6730-6735.

Zhu, Yuting — Nanyang Technological University
Lin, Liyong — University of Toronto
Ware, Simon — Nanyang Technological University
Su, Rong — Nanyang Technological University

15:40-16:00 FrB04.6

Opacity of Networked Discrete Event Systems (I), pp. 6736-6741.

Yang, Jingkai — Sun Yat-Sen University
Deng, Weilin — Sun Yat-Sen University
Jiang, Cheng — Sun Yat-Sen University
Qiu, Daowen — Sun Yat-Sen University

FrB05 — Méditerranée C4

Robust Control II (Regular Session)

Chair: Manchester, Ian R. — University of Sydney
Co-Chair: Mohajerin Esfahani, Peyman — Delft University of Technology

14:00-14:20 FrB05.1

Robust Linear Quadratic Regulator: Exact Tractable Reformulation, pp. 6742-6747.

Jongeneel, W. — Delft University of Technology
Summers, Tyler H. — University of Texas, Dallas
Mohajerin Esfahani, Peyman — Delft University of Technology

14:20-14:40 FrB05.2

The $H_{\infty,P}$ Norm As the Differential $L_{2,P}$ Gain of a p-Dominant System, pp. 6748-6753.

Padoan, Alberto — University of Cambridge
Forni, Fulvio — University of Cambridge
Sepulchre, Rodolphe — University of Cambridge

14:40-15:00 FrB05.3

Output Strictly Negative Imaginary Systems and Its Connections to Dissipativity Theory, pp. 6754-6759.

Bhowmick, Parijat — University of Manchester
Lanzon, Alexander — University of Manchester

15:00-15:20 FrB05.4

Robust LQG for Markov Jump Linear Systems, pp. 6760-6765.

Tzortzis, Ioannis — University of Cyprus
Charalambous, Charalambos D. — University of Cyprus
Hadjicostis, Christoforos N. — University of Cyprus

15:20-15:40 FrB05.5

Robust Contraction Analysis of Nonlinear Systems Via Differential IQC, pp. 6766-6771.

Wang, Ruigang — University of Sydney
Manchester, Ian R. — University of Sydney

15:40-16:00 FrB05.6

H-Infinity Static Output-Feedback Control for Positive Uncertain Discrete-Time Linear Systems, pp. 6772-6777.

Spagolla, Amanda — University of Campinas
Morais, Cecilia F. — University of Campinas
Oliveira, Ricardo C. L. F. — University of Campinas
Peres, Pedro L. D. — University of Campinas

FrB06 — Méditerranée A3

Neural Networks (Regular Session)

Chair: Khargonekar, Pramod — University of California, Irvine
Co-Chair: Ushio, Toshimitsu — Osaka University

14:00-14:20 FrB06.1

Expanding Kinodynamic Optimization Solutions with Recurrent Neural Networks and Path-Tracking Control, pp. 6778-6784.

Shaffer, Joshua — University of Maryland
Xu, Huan — University of Maryland, College Park

14:20-14:40 FrB06.2

Working Memory Augmentation for Improved Learning in Neural Adaptive Control, pp. 6785-6792.

Muthirayan, Deepan — University of California, Irvine
Khargonekar, Pramod — University of California, Irvine

14:40-15:00 FrB06.3

Networked Control of Nonlinear Systems under Partial Observation Using Continuous Deep Q-Learning, pp. 6793-6798.

Ikemoto, Junya — Osaka University
Ushio, Toshimitsu — Osaka University

15:00-15:20 FrB06.4

Port-Hamiltonian Approach to Neural Network Training, pp. 6799-6806.

Massaroli, Stefano — The Univeristy of Tokyo

Poli, Michael	Korea Advanced Institute of Science and Technology
Califano, Federico	University of Twente
Faragasso, Angela	University of Tokyo
Park, Jinkyoo	Korea Advanced Institute of Science and Technology
Yamashita, Atsushi	Univerisity of Tokyo
Asama, Hajime	University of Tokyo

15:20-15:40 FrB06.5

Deep Forward-Backward SDEs for Min-Max Control, pp. 6807-6814.

Wang, Ziyi	Georgia Institute of Technology
Lee, Keuntaek	Georgia Institute of Technology
Pereira, Marcus	Georgia Institute of Technology
Exarchos, Ioannis	Georgia Institute of Technology
Theodorou, Evangelos A.	Georgia Institute of Technology

15:40-16:00 FrB06.6

Reduced Order Observer for Structure from Motion Using Concurrent Learning, pp. 6815-6820.

Rotithor, Ghananeel	University of Connecticut
Trombetta, Daniel	University of Connecticut
Kamalapurkar, Rushikesh	Oklahoma State University
Dani, Ashwin P	University of Connecticut

FrB07 Méditerranée A1

Methodologies for the Design and for the Control of Miniaturized Mechatronic Systems (Invited Session)

Chair: Rakotondrabe, Micky	FEMTO-ST Institute
Co-Chair: Boudaoud, Mokrane	Sorbonne Université
Organizer: Rakotondrabe, Micky	ENIT Tarbes
Organizer: Boudaoud, Mokrane	Sorbonne Université
Organizer: Al Janaideh, Mohammad	Memorial University

14:00-14:20 FrB07.1

An RST Control Design Based on Interval Technique for Piezomicropositoning Systems with Rate-Dependent Hysteresis Nonlinearities (I), pp. 6821-6826.

Rakotondrabe, Micky	ENIT Tarbes
Al Janaideh, Mohammad	Memorial University

14:20-14:40 FrB07.2

Simple Technique for Integrating Position and Force Sensors in Space Constrained Piezoelectric Driven Micro-Positioners (I), pp. 6827-6831.

Zarif Mansour, Sepehr	1990
Seethaler, Rudolf	UBC

14:40-15:00 FrB07.3

Iterative Learning Control for High-Speed Rosette Trajectory Tracking (I), pp. 6832-6837.

Nikooienejad, Nastaran	University of Texas, Dallas
Maroufi, Mohammad	University of Texas, Dallas
Moheimani, S.O. Reza	University of Texas, Dallas

15:00-15:20 FrB07.4

3D Hinf CONTROLLER DESIGN for an EXPERIMENTAL SCANNING TUNNELING MICROSCOPE DEVICE (I), pp. 6838-6843.

Popescu, Andrei	Grenoble Alps University
Voda, Alina	Grenoble University
Besancon, Gildas	GIPSA-Lab, Grenoble INP, CNRS
Wu, Yujin	GIPSA-Lab

15:20-15:40 FrB07.5

Output Feedback Synthesis for a Two-Agent Nonlinear Microrobotic System (I), pp. 6844-6850.

Sun, Yixin	Insa Cvl - University of Orléans
Fruchard, Matthieu	University of Orleans
Ferreira, Antoine	INSA Centre Val de Loire

15:40-16:00 FrB07.6

Inverse Hysteresis Control of Stick-Slip SEM Integrated Nano-Robotic Systems (I), pp. 6851-6856.

Al Janaideh, Mohammad	Memorial University
Boudaoud, Mokrane	Sorbonne Université
Al Saaideh, Mohammad I.	University of Jordan
Liang, Shuai	Université Pierre Et Marie Curie, ISIR
Régnier, Stéphane	ISIR

FrB08 Méditerranée 3

Structure Preserving Discretization of PDEs for Control and Applications (Invited Session)

Chair: Lefevre, Laurent	Grenoble Institute of Technology (Grenoble INP)
Co-Chair: Matignon, Denis	ISAE
Organizer: Lefevre, Laurent	Grenoble Institute of Technology (Grenoble INP)
Organizer: Matignon, Denis	ISAE

14:00-14:20 FrB08.1

Interconnection of the Kirchhoff Plate within the Port-Hamiltonian Framework (I), pp. 6857-6862.

Brugnoli, Andrea	ISAE-SUPAERO
Alazard, Daniel	ISAE
Pommier-Budinger, Valerie	Université de Bordeaux
Matignon, Denis	ISAE

14:20-14:40 FrB08.2

Structure-Preserving Discretization for Port-Hamiltonian Descriptor Systems (I), pp. 6863-6868.

Morandin, Riccardo	Technische Universität Berlin
Mehrmann, Volker	Technische Universität Berlin

14:40-15:00 FrB08.3

Lumped Port-Hamiltonian Burning Plasma Control Model (I), pp. 6869-6874.

Vincent, Benjamin	Université Catholique de Louvain
Nouailletas, Rémy	CEA - IRFM
Artaud, Jean-François	CEA
Hudon, Nicolas	Queen's University
Lefevre, Laurent	Grenoble Institute of Technology (Grenoble INP)
Dochain, Denis	Université Catholique de Louvain

15:00-15:20 FrB08.4

Finite-Dimensional Observers for Port-Hamiltonian Systems of Conservation Laws (I), pp. 6875-6880.

Kotyczka, Paul	Technical University of Munich
Joos, Henning	Technical University of Munich

Wu, Yongxin	FEMTO-ST/ENSMM
Le Gorrec, Yann	Ensmm, Femto-St / As2m

15:20-15:40 FrB08.5

Port-Hamiltonian Modeling, Discretization and Feedback Control of a Circular Water Tank (I), pp. 6881-6886.

Cardoso-Ribeiro, Flávio Luiz	Instituto Tecnológico de Aeronáutica
Brugnoli, Andrea	ISAE-SUPAERO
Matignon, Denis	ISAE
Lefevre, Laurent	Grenoble Institute of Technology (Grenoble INP)

15:40-16:00 FrB08.6

Active Control of the Axisymmetric Vibration Modes of a Tom-Tom Drum (I), pp. 6887-6892.

Wijnand, Marc Gerard Albert	Sorbonne Université
D'Andrea-Novel, Brigitte	Mines ParisTech
Fabre, Benoit	Sorbonne Université, LAM Institut D'Alembert
Helie, Thomas	CNRS UMR 9912, Ircam - Centre Georges Pompidou
Rosier, Lionel	Paris MinesTech
Roze, David	Team Sound Signals and Systems: Audio/Acoustics, instruMents

FrB09 Méditerranée B12

Game Theory VI (Regular Session)

Chair: Srivastava, Vaibhav	Michigan State University
Co-Chair: Eksin, Ceyhun	Texas A&M University

14:00-14:20 FrB09.1

Control of Stochastic Disease Network Games Via Influential Individuals, pp. 6893-6898.

Eksin, Ceyhun	Texas A&M University

14:20-14:40 FrB09.2

Local Nash Equilibria Are Isolated, Strict Local Nash Equilibria in 'Almost All' Zero-Sum Continuous Games, pp. 6899-6904.

Mazumdar, Eric	University of California, Berkeley
Ratliff, Lillian J.	University of Washington

14:40-15:00 FrB09.3

Adaptive Learning in Two-Player Stackelberg Games with Continuous Action Sets, pp. 6905-6911.

Yang, Guosong	University of California, Santa Barbara
Poovendran, Radha	University of Washington
Hespanha, Joao P.	University of California, Santa Barbara

15:00-15:20 FrB09.4

Heterogeneous Mixed Populations of Best-Responders and Imitators: Equilibrium Convergence, pp. 6912-6917.

Le, Hien	University of Alberta
Ramazi, Pouria	University of Alberta

15:20-15:40 FrB09.5

Learning in Repeated Stochastic Network Aggregative Games, pp. 6918-6923.

Meigs, Emily	Massachusetts Institute of Technology
Parise, Francesca	Massachusetts Institute of Technology
Ozdaglar, Asu	Massachusetts Institute of Technology

15:40-16:00 FrB09.6

Achieving Efficient Collaboration in Decentralized Heterogeneous Teams Using Common-Pool Resource Games, pp. 6924-6929.

Gupta, Piyush	Michigan State University
Bopardikar, Shaunak D.	Michigan State University
Srivastava, Vaibhav	Michigan State University

FrB10 Méditerranée C12

Sliding-Mode Control II (Regular Session)

Chair: Seeber, Richard	Graz University of Technology
Co-Chair: Koch, Stefan	Graz University of Technology

14:00-14:20 FrB10.1

A Generalization of Ackermann's Formula for the Design of Continuous and Discontinuous Observers, pp. 6930-6935.

Niederwieser, Helmut	Graz University of Technology, BIOENERGY 2020+ GmbH
Koch, Stefan	Graz University of Technology
Reichhartinger, Markus	Graz University of Technology

14:20-14:40 FrB10.2

Adaptive Robust Control of Floating Offshore Wind Turbine Based on Sliding Mode, pp. 6936-6941.

Zhang, Cheng	CNRS-SCTD-UMR6004-CD0962
Tahoumi, Elias	Ecole Centrale de Nantes-CNRS
Gutierrez, Susana	FIME-UANL
Plestan, Franck	Ecole Centrale de Nantes-LS2N
De Leon Morales, Jesus	Universidad Autonoma de Nuevo Leon

14:40-15:00 FrB10.3

Finite-Time Stabilization of High-Order Sliding Mode Dynamics with Lower-Triangular Structure, pp. 6942-6946.

Liu, Lu	Jiangsu University
Zheng, Wei Xing	Western Sydney University
Ding, Shihong	Jiangsu University

15:00-15:20 FrB10.4

An Anti-Windup Scheme for the Super-Twisting Algorithm, pp. 6947-6952.

Golkani, Mohammad Ali	Graz University of Technology
Koch, Stefan	Graz University of Technology
Seeber, Richard	Graz University of Technology
Reichhartinger, Markus	Graz University of Technology
Horn, Martin	Graz University of Technology

15:20-15:40 FrB10.5

Sliding Motions on SO(3), Sliding Subgroups, pp. 6953-6958.

Gomez-Cortes, Gian C.	CINVESTAV-IPN
Castaños, Fernando	CINVESTAV
Davila, Jorge	Instituto Politecnico Nacional

15:40-16:00 FrB10.6

Sliding Mode Control of Discrete-Time 2-D Roesser Systems Via Event-Based Scheme, pp. 6959-6964.

Yang, Rongni	Shandong University
Zheng, Wei Xing	Western Sydney University

FrB11 Galliéni 1

Estimation V (Regular Session)

Chair: Wahlberg, Bo — KTH Royal Institute of Technology
Co-Chair: Regruto, Diego — Politecnico di Torino

14:00-14:20 FrB11.1

An Unknown Input Switched Functional Interval Observer for Vehicle Lateral Velocity Estimation, pp. 6965-6970.

Ifqir, Sara — IBISC, Paris-Saclay University
Ichalal, Dalil — Université d'Evry, IBISC
Ait Oufroukh, Naima — Université d'Evry, IBISC
Mammar, Said — Université d'Evry, IBISC

14:20-14:40 FrB11.2

Sparse Linear Regression with Compressed and Low-Precision Data Via Concave Quadratic Programming, pp. 6971-6976.

Cerone, Vito — Politecnico di Torino
Fosson, Sophie — Politecnico di Torino
Regruto, Diego — Politecnico di Torino

14:40-15:00 FrB11.3

Topology Selection Using Monte Carlo Expectation and Maximization Algorithm with L_1-Type Regularization for Count Data, pp. 6977-6982.

Sathish, Vurukonda — Indian Institute of Technology, Bombay
Chakraborty, Debraj — Indian Institute of Technology, Bombay
Mukhopadhyay, Siuli — Indian Institute of Technology, Bombay

15:00-15:20 FrB11.4

Efficient Computation of the Continuous-Discrete Extended Kalman Filter Sensitivities Applied to Maximum Likelihood Estimation, pp. 6983-6988.

Boiroux, Dimitri — Technical University of Denmark
Ritschel, Tobias Kasper Skovborg — 2-Control ApS
Poulsen, Niels Kjølstad — Technical University of Denmark
Madsen, Henrik — Technical University of Denmark
Jorgensen, John Bagterp — Technical University of Denmark

15:20-15:40 FrB11.5

Estimating Private Beliefs of Bayesian Agents Based on Observed Decisions, pp. 6989-6994.

Mattila, Robert — KTH Royal Institute of Technology
Lourenço, Inês — KTH Royal Institute of Technology
Rojas, Cristian R. — KTH Royal Institute of Technology
Krishnamurthy, Vikram — Cornell University
Wahlberg, Bo — KTH Royal Institute of Technology

15:40-16:00 FrB11.6

Iterative Approximate Nonlinear Inference Via Gaussian Message Passing on Factor Graphs, pp. 6995-7000.

Herzog, né Hoffmann, Christian — University of Lübeck
Petersen, Eike — University of Lübeck
Rostalski, Philipp — University of Lübeck

FrB12 Galliéni 2

Advances in Constructive Techniques and Use of Lyapunov Functions (Invited Session)

Chair: Ito, Hiroshi — Kyushu Institute of Technology
Co-Chair: Pepe, Pierdomenico — University of L'Aquila
Organizer: Ito, Hiroshi — Kyushu Institute of Technology
Organizer: Pepe, Pierdomenico — University of L'Aquila

14:00-14:20 FrB12.1

On Robust Stability of Sine-Gordon Equation (I), pp. 7001-7006.

Efimov, Denis — INRIA
Fridman, Emilia — Tel-Aviv University
Richard, Jean-Pierre — Ecole Centrale de Lille

14:20-14:40 FrB12.2

A Fusion of Max and Sum-Separable Lyapunov Functions Capable of Addressing iISS in Networks (I), pp. 7007-7012.

Ito, Hiroshi — Kyushu Institute of Technology

14:40-15:00 FrB12.3

Stabilization and Robustness Analysis for a Chain of Saturating Integrators Arising in the Visual Landing of Aircraft (I), pp. 7013-7018.

Burlion, Laurent — Rutgers, the State University of New Jersey
Malisoff, Michael — Louisiana State University
Mazenc, Frederic — INRIA Saclay

15:00-15:20 FrB12.4

Adaptive Tracking Control Via Immersion and Invariance: An (i)ISS Perspective (I), pp. 7019-7024.

Wang, Lei — University of Newcastle
Kellett, Christopher M. — University of Newcastle

15:20-15:40 FrB12.5

Discrete Finite-Time Stable Position Tracking Control of Unmanned Vehicles, pp. 7025-7030.

Hamrah, Reza — Syracuse University
Sanyal, Amit — Syracuse University
Viswanathan, Sasi Prabhakaran — Akrobotix LLC

15:40-16:00 FrB12.6

Weighted Polar Finite Time Control Barrier Functions with Applications to Multi-Robot Systems, pp. 7031-7036.

Srinivasan, Mohit — Georgia Institute of Technology
Hyun, Nak-seung Patrick — Harvard University
Coogan, Samuel — Georgia Institute of Technology

FrB13 Galliéni 4

Uncertain Systems II (Regular Session)

Chair: Bakker, Craig — Pacific Northwest National Laboratory
Co-Chair: Efimov, Denis — INRIA

14:00-14:20 FrB13.1

Asymptotic Stability of Uncertain Lagrangian Systems with Prescribed Transient Response, pp. 7037-7042.

Verginis, Christos — KTH Royal Institute of Technology
Dimarogonas, Dimos V. — KTH Royal Institute of Technology

14:20-14:40 FrB13.2

Switching between Sensor Configurations for Uncertain Systems; Application to Control of Anesthesia, pp. 7043-7048.

van Heusden, Klaske — University of British Columbia
Dumont, Guy A. — University of British Columbia

14:40-15:00 FrB13.3

Interval Prediction for Continuous-Time Systems with Parametric Uncertainties, pp. 7049-7054.

Leurent, Edouard — INRIA
Efimov, Denis — INRIA
Raïssi, Tarek — Conservatoire National Des Arts Et Métiers
Perruquetti, Wilfrid — Ecole Centrale de Lille

15:00-15:20 FrB13.4

Robustness Analysis of Initial Excitation Based Adaptive Control, pp. 7055-7062.

Basu Roy, Sayan — Indraprastha Institute of Information Technology Delhi
Bhasin, Shubhendu — Indian Institute of Technology, Delhi

15:20-15:40 FrB13.5

Learning and Information Manipulation: Repeated Hypergames for Cyber-Physical Security, pp. 7063-7068.

Bakker, Craig — Pacific Northwest National Laboratory
Bhattacharya, Arnab — Pacific Northwest National Laboratory
Chatterjee, Samrat — Pacific Northwest National Laboratory
Vrabie, Draguna — Pacific Northwest National Laboratory

15:40-16:00 FrB13.6

Improved Discretization Method for Uncertain Linear Systems: A Descriptor System Based Approach, pp. 7069-7074.

Braga, Marcio F. — Federal University of Ouro Preto (UFOP)
Campos, Victor — Universidade Federal de Minas Gerais
Frezzatto, Luciano — Universidade Federal de Minas Gerais

FrB14 — Galliéni 7

Stability of Nonlinear Systems II (Regular Session)

Chair: Polyakov, Andrey — INRIA Lille Nord-Europe
Co-Chair: Chitour, Yacine — Universit\'e Paris-Sud, CNRS, Supelec

14:00-14:20 FrB14.1

Scattering Transformation for Planar Conic Systems with Nonlinear Sector Boundaries, pp. 7075-7080.

Polushin, Ilia G. — Western University
Dashkovskiy, Sergey N. — University of Wuerzburg

14:20-14:40 FrB14.2

Optimal Feedback Stabilization of Systems on Manifolds, pp. 7081-7086.

Kim, Minwoo — Korea Advanced Institute of Science & Technology (KAIST)
Phogat, Karmvir Singh — IIT Bombay
Chang, Dong Eui — Korea Advanced Institute of Science and Technology

14:40-15:00 FrB14.3

Generalized Lyapunov Exponents of Homogeneous Systems, pp. 7087-7092.

Polyakov, Andrey — INRIA Lille Nord-Europe
Zhuk, Sergiy — IBM

15:00-15:20 FrB14.4

Saturated Control without Velocity Measurements for Planar Robots with Flexible Joints, pp. 7093-7098.

Wesselink, Thomas — University of Groningen
Borja, Pablo — University of Groningen
Scherpen, Jacquelien M.A. — University of Groningen

15:20-15:40 FrB14.5

On Condition for Output Finite-Time Stability and Adaptive Finite-Time Control Scheme, pp. 7099-7103.

Zimenko, Konstantin — ITMO University
Efimov, Denis — INRIA
Polyakov, Andrey — INRIA Lille Nord-Europe

15:40-16:00 FrB14.6

Stabilization of a Perturbed Chain of Integrators in Prescribed Time, pp. 7104-7109.

Chitour, Yacine — Universit\'e Paris-Sud, CNRS, Supelec
Ushirobira, Rosane — INRIA

FrB15 — Rhodes GH

Optimal Control V (Regular Session)

Chair: De Marchi, Alberto — Bundeswehr University Munich
Co-Chair: Streif, Stefan — Technische Universität Chemnitz

14:00-14:20 FrB15.1

Model Predictive Control with Stage Cost Shaping Inspired by Reinforcement Learning, pp. 7110-7115.

Beckenbach, Lukas — Chemnitz University of Technology
Osinenko, Pavel — Technische Universitaet Chemnitz
Streif, Stefan — Technische Universität Chemnitz

14:20-14:40 FrB15.2

Optimal Control of Thermostatic Loads for Planning Aggregate Consumption: Characterization of Solution and Explicit Strategies, pp. 7116-7121.

Fontes, Fernando A. C. C. — UniversidadedoPorto
Halder, Abhishek — University of California, Santa Cruz
Becerril, Jorge — UniversidadedoPorto
Kumar, P. R. — Texas A&M University

14:40-15:00 FrB15.3

On the Mixed-Integer Linear-Quadratic Optimal Control with Switching Cost, pp. 7122-7127.

De Marchi, Alberto — Bundeswehr University Munich

15:00-15:20 FrB15.4

Time-Dependent Surveillance-Evasion Games, pp. 7128-7133.

Cartee, Elliot — Cornell University
Lai, Lexiao — University of Hong Kong
Song, Qianli — University of Hong Kong
Vladimirsky, Alexander — Cornell University

15:20-15:40 FrB15.5

A Switching Cost Aware Rounding Method for Relaxations of Mixed-Integer Optimal Control Problems, pp. 7134-7139.

Bestehorn, Felix	Technical University of Braunschweig
Hansknecht, Christoph	TU Braunschweig
Kirches, Christian	Technical University of Braunschweig
Manns, Paul	Technische Universität Braunschweig

15:40-16:00 FrB15.6

Actuator Placement for Optimizing Network Performance under Controllability Constraints, pp. 7140-7147.

Guo, Baiwei	ETH Zurich
Karaca, Orcun	ETH Zurich
Summers, Tyler H.	University of Texas, Dallas
Kamgarpour, Maryam	ETH Zurich

FrB16 Rhodes AB

Low-Rank Approximation (Invited Session)

Chair: Markovsky, Ivan	Vrije Universiteit Brussel
Co-Chair: Rantzer, Anders	Lund University
Organizer: Markovsky, Ivan	Vrije Universiteit Brussel
Organizer: Usevich, Konstantin	CNRS, Université de Lorraine

14:00-14:20 FrB16.1

Extended Kalman Filtering with Low-Rank Tensor Networks for MIMO Volterra System Identification (I), pp. 7148-7153.

Batselier, Kim	Delft University of Technology
Ko, Ching-Yun	University of Hong Kong
Wong, Ngai	University of Hong Kong

14:20-14:40 FrB16.2

A Convex Approach to Frisch-Kalman Problem (I), pp. 7154-7158.

Zhao, Di	Hong Kong University of Sci. and Tech
Rantzer, Anders	Lund University
Qiu, Li	Hong Kong University of Sci. & Tech

14:40-15:00 FrB16.3

Low-Rank Approximations of Hyperbolic Embeddings (I), pp. 7159-7164.

Jawanpuria, Pratik	Microsoft
Meghwanshi, Mayank	Microsoft
Mishra, Bamdev	Microsoft

15:00-15:20 FrB16.4

Software Package for Mosaic-Hankel Structured Low-Rank Approximation, pp. 7165-7170.

Usevich, Konstantin	Vrije Universiteit Brussel
Markovsky, Ivan	Vrije Universiteit Brussel

15:20-15:40 FrB16.5

A Convex Relaxation for Model Predictive Control of a Class of Hammerstein Systems, pp. 7171-7176.

Vincent, Tyrone L.	Colorado School of Mines
Tang, Gongguo	Colorado School of Mines
Weddle, Peter	Colorado School of Mines

15:40-16:00 FrB16.6

Robust Maximization of Correlated Submodular Functions, pp. 7177-7183.

Hou, Qiqiang	Worcester Polytechnic Institute
Clark, Andrew	Worcester Polytechnic Institute

FrB17 Rhodes CD

Encrypted Control and Optimization (Invited Session)

Chair: Schulze Darup, Moritz	University of Paderborn
Co-Chair: Alexandru, Andreea B.	University of Pennsylvania
Organizer: Schulze Darup, Moritz	University of Paderborn
Organizer: Alexandru, Andreea B.	University of Pennsylvania

14:00-14:20 FrB17.1

Stability Analysis and Dynamic Quantizer for Controller Encryption (I), pp. 7184-7189.

Teranishi, Kaoru	University of Electro-Communications
Shimada, Naoki	National Institute of Technology, Ishikawa College
Kogiso, Kiminao	University of Electro-Communications

14:20-14:40 FrB17.2

Encrypted State Estimation in Networked Control Systems (I), pp. 7190-7195.

Kim, Junsoo	Seoul National University
Shim, Hyungbo	Seoul National University

14:40-15:00 FrB17.3

Encrypted Cooperative Control Revisited (I), pp. 7196-7202.

Alexandru, Andreea B.	University of Pennsylvania
Schulze Darup, Moritz	University of Paderborn
Pappas, George J.	University of Pennsylvania

15:00-15:20 FrB17.4

Privacy Preservation in Distributed Optimization Via Dual Decomposition and ADMM (I), pp. 7203-7208.

Tjell, Katrine	Aalborg University
Wisniewski, Rafal	Aalborg University

15:20-15:40 FrB17.5

Symmetries and Privacy in Control Over the Cloud: Uncertainty Sets and Side Knowledge (I), pp. 7209-7214.

Sultangazin, Alimzhan	University of California, Los Angeles
Tabuada, Paulo	University of California, Los Angeles

15:40-16:00 FrB17.6

Encrypted Cloud-Based Control Using Secret Sharing with One-Time Pads (I), pp. 7215-7221.

Schulze Darup, Moritz	University of Paderborn
Jager, Tibor	Paderborn University

FrB18 Rhodes EF

Hybrid Systems II (Regular Session)

Chair: Teel, Andrew R.	University of California, Santa Barbara

Co-Chair: Saccon, Alessandro — Eindhoven University of Technology

14:00-14:20 FrB18.1

A New Hybrid Control Strategy for the Global Attitude Tracking Problem, pp. 7222-7227.

Wang, Miaomiao — Western University
Tayebi, Abdelhamid — Lakehead University

14:20-14:40 FrB18.2

Monotonicity of Functions Along Flows of Hybrid Inclusions, pp. 7228-7233.

Maghenem, Mohamed Adlene — University of California Santa Cruz
Melis, Alessandro — University of Bologna
Sanfelice, Ricardo G. — University of California, Santa Cruz

14:40-15:00 FrB18.3

Global Optimization on the Sphere with Half-Space Constraints: A Stochastic Hybrid Systems Approach, pp. 7234-7239.

Baradaran Hosseini, Matina — University of California, Santa Barbara
Teel, Andrew R. — University of California, Santa Barbara

15:00-15:20 FrB18.4

Lattice Piecewise Affine Representations on Convex Projection Regions, pp. 7240-7245.

Xu, Jun — Harbin Institute of Technology, Shenzhen
Wang, Shuning — Tsinghua University

15:20-15:40 FrB18.5

On Linear Quadratic Optimal Control for Time-Varying Multimodal Linear Systems with Time-Triggered Jumps, pp. 7246-7251.

de Carolis, Giovanni — University of Roma Tor Vergata
Saccon, Alessandro — Eindhoven University of Technology

15:40-16:00 FrB18.6

A Graph-Based Optimization Framework for the Energy Management of District Systems, pp. 7252-7257.

Manganini, Giorgio — United Technologies Research Centre
Riverso, Stefano — United Technologies Research Centre Ireland Ltd
Kouramas, Konstantinos — United Technologies Research Center

FrB19 — Galliéni 5

Stochastic Optimal Control II (Regular Session)

Chair: Mahajan, Aditya — McGill University
Co-Chair: Chakravorty, Suman — Texas A&M University

14:00-14:20 FrB19.1

Distributed Control of Thermostatically Controlled Loads: Kullback-Leibler Optimal Control in Continuous Time, pp. 7258-7265.

Busic, Ana — INRIA
Meyn, Sean P. — University of Florida

14:20-14:40 FrB19.2

The Maximal Hitting-Time Stochastic Reachability Problem, pp. 7266-7272.

Gleason, Joseph — University of New Mexico
P. Vinod, Abraham — University of Texas, Austin
Oishi, Meeko — University of New Mexico

14:40-15:00 FrB19.3

Affine Controller Synthesis for Stochastic Reachability Via Difference of Convex Programming, pp. 7273-7280.

P. Vinod, Abraham — University of Texas, Austin
Oishi, Meeko — University of New Mexico

15:00-15:20 FrB19.4

A Decoupled Data Based Control (D2C) Approach to Generalized Motion Planning Problems, pp. 7281-7286.

Yu, Dan — Nanjing University of Aeronautics and Astronautics
Chakravorty, Suman — Texas A&M University

15:20-15:40 FrB19.5

Stochastic Subgradient Methods for Dynamic Programming in Continuous State and Action Spaces, pp. 7287-7293.

Jang, Sunho — Seoul National University
Yang, Insoon — Seoul National University

15:40-16:00 FrB19.6

Restless Bandits with Controlled Restarts: Indexability and Computation of Whittle Index, pp. 7294-7300.

Akbarzadeh, Nima — Student
Mahajan, Aditya — McGill University

FrB20 — Rhodes 10

Cooperative Control I (Regular Session)

Chair: Cai, Kai — Osaka City University
Co-Chair: Qu, Zhihua — University of Central Florida

14:00-14:20 FrB20.1

Robust Output Regulation of Networked Heterogeneous Linear Agents by Distributed Internal Model Principle, pp. 7301-7306.

Kawamura, Satoshi — Osaka City University
Cai, Kai — Osaka City University
Kishida, Masako — National Institute of Informatics

14:20-14:40 FrB20.2

Global and Semi-Global Regulated State Synchronization for Homogeneous Networks of Non-Introspective Agents in Presence of Input Saturation, pp. 7307-7312.

Liu, Zhenwei — Northeastern University
Saberi, Ali — Washington State Univ
Stoorvogel, Anton A. — University of Twente
Nojavanzadeh, Donya — Washington State University

14:40-15:00 FrB20.3

Cooperative Design of Systems of Systems against Attack on One Subsystem, pp. 7313-7318.

Talebi, Shahriar — University of Washington
Simaan, Marwan A. — University of Central Florida
Qu, Zhihua — University of Central Florida

15:00-15:20 FrB20.4

Strategies for Defending a Coastline against Multiple Attackers, pp. 7319-7324.

Garcia, Eloy — Air Force Research Laboratory
Von Moll, Alexander — Air Force Research Laboratory
Casbeer, David W. — Air Force Research Laboratory

Pachter, Meir	AFIT/ENG

15:20-15:40 FrB20.5

Team Composition for Perimeter Defense with Patrollers and Defenders, pp. 7325-7332.

Shishika, Daigo	University of Pennsylvania
Paulos, James	University of Pennsylvania
Dorothy, Michael	Combat Capabilities Development Command Army Research Laboratory
Hsieh, M. Ani	University of Pennsylvania
Kumar, Vijay	University of Pennsylvania

15:40-16:00 FrB20.6

On the Observability of Relative Positions in Left-Invariant Multi-Agent Control Systems and Its Application to Formation Control, pp. 7333-7338.

Colombo, Leonardo Jesus	Consejo Superior de Investigaciones Científicas (CSIC)
Garcia de Marina, Hector	University of Southern Denmark
Barbero-Linan, Maria	Technical University of Madrid
Martin de Diego, David	High Council for Scientific Research

FrB21 Risso 6

Networked Control Systems V (Regular Session)

Chair: Tanaka, Takashi	University of Texas, Austin
Co-Chair: Lucia, Walter	Concordia University

14:00-14:20 FrB21.1

Differential Privacy-Preserving Distributed Machine Learning, pp. 7339-7344.

Wang, Xin	Zhejiang University
Ishii, Hideaki	Tokyo Institute of Technology
Du, Linkang	Zhejiang University
Cheng, Peng	Zhejiang University
Chen, Jiming	Zhejiang University

14:20-14:40 FrB21.2

Sparse LQR Synthesis Via Information Regularization, pp. 7345-7351.

Stefan, Jeb	University of Texas, Austin
Tanaka, Takashi	University of Texas, Austin

14:40-15:00 FrB21.3

Global Synchronization of Clocks in Directed Rooted Acyclic Graphs: A Hybrid Systems Approach, pp. 7352-7357.

Javed, Muhammad Umar	University of Colorado, Boulder
Poveda, Jorge I.	University of Colorado, Boulder
Chen, Xudong	University of Colorado, Boulder

15:00-15:20 FrB21.4

Network Feedback Passivation of Passivity-Short Multi-Agent Systems, pp. 7358-7363.

Sharf, Miel	Israel Institute of Technology
Zelazo, Daniel	Technion - Israel Institute of Technology

15:20-15:40 FrB21.5

Effects of Jamming Attacks on a Control System with Energy Harvesting, pp. 7364-7369.

Knorn, Steffi	Otto-Von-Guericke University Magdeburg
Teixeira, André M. H.	Uppsala University

15:40-16:00 FrB21.6

Resilient Control for Cyber-Physical Systems Subject to Replay Attacks, pp. 7370-7375.

Franze', Giuseppe	University of Calabria
Tedesco, Francesco	University of Calabria
Lucia, Walter	Concordia University

FrB22 Risso 7

Nonlinear Systems Identification II (Regular Session)

Chair: Garulli, Andrea	University of Siena
Co-Chair: Jungers, Raphaël M.	University of Louvain

14:00-14:20 FrB22.1

A Bilevel Programming Framework for Piecewise Affine System Identification, pp. 7376-7381.

Paoletti, Simone	University of Siena
Savelli, Iacopo	University of Siena
Garulli, Andrea	University of Siena
Vicino, Antonio	University of Siena

14:20-14:40 FrB22.2

Bayesian Identification of State-Space Models Via Adaptive Thermostats, pp. 7382-7388.

Umenberger, Jack	Uppsala University
Schön, Thomas (Bo)	Uppsala University
Lindsten, Fredrik	Uppsala University

14:40-15:00 FrB22.3

Learning Discrepancy Models from Experimental Data, pp. 7389-7396.

Kaheman, Kadierdan	University of Washington
Kaiser, Eurika	University of Washington
Strom, Benjamin	University of Washington
Kutz, J. Nathan	University of Washington
Brunton, Steven L.	University of Washington

15:00-15:20 FrB22.4

Decoupling Multivariate Polynomials for Nonlinear State-Space Models, pp. 7397-7402.

Decuyper, Jan	Vrije Universiteit Brussel
Dreesen, Philippe	Vrije Universiteit Brussel
Schoukens, Johan	Vrije Universiteit Brussel
Runacres, Mark C	Vrije Universiteit Brussel
Tiels, Koen	Uppsala University

15:20-15:40 FrB22.5

Nonlinear Input Design As Optimal Control of a Hamiltonian System, pp. 7403-7408.

Umenberger, Jack	Uppsala University
Schön, Thomas (Bo)	Uppsala University

15:40-16:00 FrB22.6

Formal Methods for Computing Hyperbolic Invariant Sets for Nonlinear Systems, pp. 7409-7414.

Berger, Guillaume O.	University of Louvain
Jungers, Raphaël M.	University of Louvain

FrB23 Risso 8

Large-Scale Distributed Optimization and Decentralized Control I (Invited Session)

Chair: Nedich, Angelia	Arizona State University
Co-Chair: Uribe, Cesar	Massachusetts Institute of Technology
Organizer: Uribe, Cesar	Massachusetts Institute of Technology
Organizer: Nedich, Angelia	Arizona State University
Organizer: Olshevsky, Alexander	Boston University

14:00-14:20 FrB23.1

Convergence and Iteration Complexity of Policy Gradient Method for Infinite-Horizon Reinforcement Learning (I), pp. 7415-7422.

Zhang, Kaiqing	University of Illinois, Urbana Champaign
Koppel, Alec	U.S. Army Research Laboratory
Zhu, Hao	University of Texas, Austin
Basar, Tamer	University of Illinois, Urbana Champaign

14:20-14:40 FrB23.2

Totally Asynchronous Distributed Quadratic Programming with Independent Stepsizes and Regularizations (I), pp. 7423-7428.

Ubl, Matthew	University of Florida
Hale, Matthew	University of Florida

14:40-15:00 FrB23.3

Lower Bound Performances for Average Consensus in Open Multi-Agent Systems (I), pp. 7429-7434.

Monnoyer de Galland de Carnières, Charles	Université Catholique de Louvain
Hendrickx, Julien M.	Université Catholique de Louvain

15:00-15:20 FrB23.4

On Primal and Dual Approaches for Distributed Stochastic Convex Optimization Over Networks (I), pp. 7435-7440.

Dvinskikh, Darina	Weierstrass Institute for Applied Analysis and Stochastics
Gorbunov, Eduard	Moscow Institute of Physics and Technology
Gasnikov, Alexander	Moscow Institute of Physics and Technology
Dvurechensky, Pavel	Weierstrass Institute for Applied Analysis and Stochastics
Uribe, Cesar	Massachusetts Institute of Technology

15:20-15:40 FrB23.5

Graph Topology and Subsystem Centrality in Approximately Dissipative System Interconnections, pp. 7441-7447.

Köhler, Philipp N.	University of Stuttgart
Muller, Matthias A.	Leibniz University Hannover
Allgöwer, Frank	University of Stuttgart

15:40-16:00 FrB23.6

Convergence Rate Analysis of a Subgradient Averaging Algorithm for Distributed Optimisation with Different Constraint Sets, pp. 7448-7453.

Romao, Licio	University of Oxford
Margellos, Kostas	University of Oxford
Notarstefano, Giuseppe	University of Bologna
Papachristodoulou, Antonis	University of Oxford

FrB24 Hermès

Iterative Learning Control II (Regular Session)

Chair: Zare, Armin	University of Southern California
Co-Chair: Tan, Ying	University of Melbourne

14:00-14:20 FrB24.1

Policy Improvement Directions for Reinforcement Learning in Reproducing Kernel Hilbert Spaces, pp. 7454-7461.

Paternain, Santiago	University of Pennsylvania
Bazerque, Juan	Universidad de La Republica
Small, Austin	University of Pennsylvania
Ribeiro, Alejandro	University of Pennsylvania

14:20-14:40 FrB24.2

Iterative Deconvolution for Calibrating Quantum Control Pulses, pp. 7462-7467.

cao, xi	Tsinghua Univesity
Chu, Bing	University of Southampton
Ding, Hai-Jin	Tsinghua University
Wu, Re-Bing	Tsinghua University

14:40-15:00 FrB24.3

Analysis and Experimental Verification of a Current-Cycle Iterative Learning Control for Robotic Manipulators with Output Constraints, pp. 7468-7473.

Sebastian, Gijo	University of Melbourne
Li, Zeyu	University of Melbourne
Tan, Ying	University of Melbourne
Oetomo, Denny Nurjanto	University of Melbourne

15:00-15:20 FrB24.4

Global Exponential Convergence of Gradient Methods Over the Nonconvex Landscape of the Linear Quadratic Regulator, pp. 7474-7479.

Mohammadi, Hesameddin	University of Southern California
Zare, Armin	University of Texas, Dallas
Soltanolkotabi, Mahdi	University of Southern California
Jovanovic, Mihailo R.	University of Southern California

15:20-15:40 FrB24.5

A New Result on Robust Adaptive Dynamic Programming for Uncertain Partially Linear Systems, pp. 7480-7485.

Adib Yaghmaie, Farnaz	Linkoping University
Gunnarsson, Svante	Linkoping University

15:40-16:00 FrB24.6

Adaptive Optimal Decision in Multi-Agent Random Switching Systems, pp. 7486-7491.

Liu, Mushuang	University of Texas, Arlington
Wan, Yan	University of Texas, Arlington
Lewis, Frank L.	University of Texas, Arlington

FrB25 Athéna

Power Systems II (Regular Session)

Chair: Kazempour, Jalal	Technical University of Denmark
Co-Chair: Karimi, Alireza	EPFL

14:00-14:20 FrB25.1

Quadratic Performance Analysis of Secondary Frequency Controllers, pp. 7492-7497.

Poolla, Bala Kameshwar	ETH Zürich
Simpson-Porco, John W.	University of Waterloo
Monshizadeh, Nima	University of Groningen
Dörfler, Florian	Swiss Federal Institute of Technology (ETH) Zurich

14:20-14:40 FrB25.2

Exploring Market Properties of Policy-Based Reserve Procurement for Power Systems, pp. 7498-7505.

Ratha, Anubhav	Technical University of Denmark (DTU)
Kazempour, Jalal	Technical University of Denmark
Virag, Ana	Flemish Institute for Technological Research (VITO)
Pinson, Pierre	Dtu Electrical Engineering

14:40-15:00 FrB25.3

Exponentially Fast Estimation of Power System Oscillation Modes Using Distributed Phasor Data, pp. 7506-7511.

Liu, Ji	Stony Brook University
Chakrabortty, Aranya	North Carolina State University
Basar, Tamer	University of Illinois, Urbana Champaign

15:00-15:20 FrB25.4

Data-Driven Distributed Reactive Power Sharing in Microgrids, pp. 7512-7517.

Madani, Seyed	EPFL
Karimi, Alireza	EPFL

15:20-15:40 FrB25.5

Toward Distributed Stability Analytics for Power Systems with Heterogeneous Bus Dynamics, pp. 7518-7523.

Yang, Peng	Tsinghua University
Liu, Feng	Tsinghua University
Wang, Zhaojian	Tsinghua University
Shen, Chen	Tsinghua University
Yi, Jun	China Electric Power Research Institute
Lin, Weifang	China Electric Power Research Institute

15:40-16:00 FrB25.6

Worst-Case Probabilistic Network Outage Identification under Physical Disturbances, pp. 7524-7529.

Nguyen, Hieu	University of Utah
Parvania, Masood	University of Utah
Khargonekar, Pramod	University of California, Irvine

FrC01 Méditerranée 1

Biological Systems II (Regular Session)

Chair: Fromion, Vincent	INRA
Co-Chair: Colaneri, Patrizio	Politecnico di Milano

16:30-16:50 FrC01.1

Controlled and Uncontrolled Stochastic Norton-Simon-Massagu'e Tumor Growth Models, pp. 7530-7535.

Belkhatir, Zehor	Memorial Sloan Kettering Cancer Center (MSKCC)
Pavon, Michele	University of Padova
Mathews, James	Memorial Sloan Kettering
Pouryahya, Maryam	Memorial Sloan Kettering
Deasy, Joseph	Memorial Sloan Kettering
Norton, Larry	Memorial Sloan Kettering
Tannenbaum, Allen	Stony Brook University

16:50-17:10 FrC01.2

A RBA Model for the Chemostat Modelling, pp. 7536-7541.

Dinh, Marc	INRA
Fromion, Vincent	INRA

17:10-17:30 FrC01.3

Time Delays in a Genetic Positive-Feedback Circuit, pp. 7542-7547.

Borri, Alessandro	IASI-CNR
Palumbo, Pasquale	IASI-CNR
Singh, Abhyudai	University of Delaware

17:30-17:50 FrC01.4

Checking Structural Stability of BDC-Decomposable Systems Via Convex Optimisation, pp. 7548-7553.

Blanchini, Franco	University of Udine
Chesi, Graziano	University of Hong Kong
Colaneri, Patrizio	Politecnico di Milano
Giordano, Giulia	Delft University of Technology

17:50-18:10 FrC01.5

Linear System Identification from Ensemble Snapshot Observations, pp. 7554-7559.

Aalto, Atte	University of Luxembourg
Goncalves, Jorge	University of Luxembourg

18:10-18:30 FrC01.6

Control of Enzymatic Reactions Via Quadratic Immersion, pp. 7560-7565.

Carravetta, Francesco	IASI-CNR
Palumbo, Pasquale	IASI-CNR

FrC02 Méditerranée 2

Linear Systems III (Regular Session)

Chair: Poussot-Vassal, Charles	ONERA
Co-Chair: Jiang, Lin	University of Liverpool

16:30-16:50 FrC02.1

On Solvability of CGCARE for LQR Problems with Zero Input-Cost, pp. 7566-7571.

Bhawal, Chayan	Max Planck Institute for Dynamics of Complex Technical System
Pal, Debasattam	Indian Institute of Technology, Bombay

16:50-17:10 FrC02.2

Stability Analysis for Systems with a Time-Varying Delay Via a Free-Matrix-Based Lyapunov-Krasovskii Functional, pp. 7572-7577.

Long, Fei	China University of Geosciences
Zhang, Chuan-Ke	China University of Geosciences
He, Yong	China University of Geosciences
Jiang, Lin	University of Liverpool
Wu, Min	China University of Geosciences

17:10-17:30 FrC02.3

Convex Synthesis of Strictly Negative Imaginary Feedback Controllers, pp. 7578-7583.

Caverly, Ryan James	University of Minnesota
Chakraborty, Manash	University of Minnesota

17:30-17:50 FrC02.4

An Observer-Based Output Feedback Controller for the Finite-Time Stabilization of Markov Jump Linear Systems, pp. 7584-7589.

Tartaglione, Gaetano	Univeristy of Napoli Parthenope
Ariola, Marco	Univeristy of Napoli Parthenope
Amato, Francesco	Univeristy of Napoli Federico II

17:50-18:10 FrC02.5

From Reference Model Selection to Controller Validation: Application to Loewner Data-Driven Control, pp. 7590-7595.

Kergus, Pauline	ONERA
Olivi, Martine	INRIA
Poussot-Vassal, Charles	ONERA
Demourant, Fabrice	Onera

FrC03 Méditerranée 5

Automotive Control II (Regular Session)

Chair: Yu, Min	Imperial College London
Co-Chair: Cannon, Mark	University of Oxford

16:30-16:50 FrC03.1

GPU Based Parameterized NMPC Scheme for Control of Half Car Vehicle with Semi-Active Suspension System, pp. 7596-7601.

Murali Madhavan Rathai, KARTHIK	CNRS, GIPSA Lab, Grenoble
Sename, Olivier	Grenoble INP / GIPSA-Lab
Alamir, Mazen	CNRS / University of Grenoble

16:50-17:10 FrC03.2

Design of a New Gain-Scheduled LPV/H-Infinity Controller for Vehicle's Global Chassis Control, pp. 7602-7608.

Chokor, Abbas	Université de Technologie de Compiègne
Doumiati, Moustapha	Université de Technologie de Compiègne
Talj, Reine	Heudiasyc, UTC
Charara, Ali	Umr Cnrs 6599

17:10-17:30 FrC03.3

Distributed Nested PI Slip Control for Longitudinal and Lateral Motion in Four In-Wheel Motor Drive Electric Vehicle, pp. 7609-7614.

Amato, Gerardo	University of Rome Tor Vergata
Marino, Riccardo	University of Roma Tor Vergata

17:30-17:50 FrC03.4

Robust Control for a Full-Car Prototype of Series Active Variable Geometry Suspension, pp. 7615-7622.

Yu, Min	Imperial College London
Cheng, Cheng	Huazhong University of Science and Technology
Evangelou, Simos Andreas	Imperial College
Dini, Daniele	Imperial College London

17:50-18:10 FrC03.5

Safety-Critical Control for Non-Affine Nonlinear Systems with Application on Autonomous Vehicle, pp. 7623-7628.

Son, Tong	Siemens PLM Software
Nguyen, Quan	Mass Institute of Technology(MIT)

18:10-18:30 FrC03.6

Fast Optimal Energy Management with Engine On/Off Decisions for Plug-In Hybrid Electric Vehicles, pp. 7629-7634.

East, Sebastian	University of Oxford
Cannon, Mark	University of Oxford

FrC04 Méditerranée A2

Cyber-Security of Discrete-Event Systems (Invited Session)

Chair: Su, Rong	Nanyang Technological University
Co-Chair: Yin, Xiang	Shanghai Jiao Tong University
Organizer: Yin, Xiang	Shanghai Jiao Tong University
Organizer: Cai, Kai	Osaka City University
Organizer: Su, Rong	Nanyang Technological University
Organizer: Tong, Yin	Southwest Jiaotong University

16:30-16:50 FrC04.1

Secret Securing with Multiple Protections and Minimum Costs (I), pp. 7635-7640.

Matsui, Shoma	Osaka City University
Cai, Kai	Osaka City University

16:50-17:10 FrC04.2

Opacity of Networked Supervisory Control Systems Over Insecure Multiple Channel Networks (I), pp. 7641-7646.

Yin, Xiang	Shanghai Jiao Tong University
Li, Shaoyuan	Shanghai Jiao Tong University

17:10-17:30 FrC04.3

K-Delayed Strong Detectability of Discrete-Event Systems (I), pp. 7647-7652.

Zhang, Kuize	KTH Royal Institute of Technology
Giua, Alessandro	University of Cagliari

17:30-17:50 FrC04.4

Abstraction-Based Synthesis of Opacity-Enforcing Controllers Using Alternating Simulation Relations (I), pp. 7653-7658.

Hou, Junyao	ShanghaiJiaoTong University
Yin, Xiang	Shanghai Jiao Tong University
Li, Shaoyuan	Shanghai Jiao Tong University
Zamani, Majid	University of Colorado Boulder

17:50-18:10 FrC04.5

Towards Bounded Synthesis of Resilient Supervisors (I), pp. 7659-7664.

Lin, Liyong	Nanyang Technological University
Zhu, Yuting	Nanyang Technological University
Su, Rong	Nanyang Technological University

18:10-18:30 FrC04.6

Current-State Opacity Verification in Modular Discrete Event Systems (I), pp. 7665-7670.

Tong, Yin	Southwest Jiaotong University
Lan, Hao	Southwest Jiaotong University

FrC05 Méditerranée C4

Robust Control III (Regular Session)

Chair: Lessard, Laurent	University of Wisconsin-Madison
Co-Chair: Van Scoy, Bryan	University of Wisconsin--Madison

16:30-16:50 FrC05.1

Learning-Based Predictive Control for MIMO Systems, pp. 7671-7676.

Salvador, José R.	Universidad de Sevilla

Terzi, Enrico	Politecnico di Milano
Farina, Marcello	Politecnico di Milano
Ramirez, Daniel R.	Universidad de Sevilla
Fagiano, Lorenzo	Politecnico di Milano
Muñoz de la Peña, David	Universidad de Sevilla
Scattolini, Riccardo	Politecnico di Milano

16:50-17:10 FrC05.2

Integral Quadratic Constraints: Exact Convergence Rates and Worst-Case Trajectories, pp. 7677-7682.

Van Scoy, Bryan	University of Wisconsin--Madison
Lessard, Laurent	University of Wisconsin-Madison

17:10-17:30 FrC05.3

Robust Stabilization of Resource Limited Networked Control Systems under Denial-Of-Service Attack, pp. 7683-7689.

Tripathy, Niladri Sekhar	Singapore University of Technology and Design
Chamanbaz, Mohammadreza	Singapore University of Technology and Design
Bouffanais, Roland	Singapore University of Technology and Design

17:30-17:50 FrC05.4

Unified Necessary and Sufficient Conditions for the Robust Stability of Interconnected Sector-Bounded Systems, pp. 7690-7695.

Cyrus, Saman	University of Wisconsin-Madison
Lessard, Laurent	University of Wisconsin-Madison

17:50-18:10 FrC05.5

Parallel Explicit Tube Model Predictive Control, pp. 7696-7701.

Wang, Kai	ShanghaiTech University,
Jiang, Yuning	ShanghaiTech University
Oravec, Juraj	Slovak University of Technology in Bratislava
Villanueva, Mario E.	ShanghaiTech University
Houska, Boris	ShanghaiTech University

18:10-18:30 FrC05.6

Direct H-Infinity Synthesis of Reduced Order Controllers for a Class of Single-Input Plants, pp. 7702-7707.

Ghosh, Arun	Indian Institute of Technology
Chattopadhyay, Susobhan	Indian Institute of Technology, Kharagpur
Meena, Jairam	Intel Corporation

FrC06 Méditerranée A3

Computational Methods (Regular Session)

Chair: Donkers, M.C.F.	Eindhoven University of Technology
Co-Chair: Ozer, Ahmet Ozkan	Western Kentucky University

16:30-16:50 FrC06.1

Uniform Boundary Observability of Semi-Discrete Finite Difference Approximations of a Rayleigh Beam Equation with Only One Boundary Observation, pp. 7708-7713.

Ozer, Ahmet Ozkan	Western Kentucky University

16:50-17:10 FrC06.2

The Divergence of All Sampling-Based Methods for Calculating the Spectral Factorization, pp. 7714-7720.

Boche, Holger	Technische Universität München
Pohl, Volker	Technische Universität München

17:10-17:30 FrC06.3

Computing Common Factors of Matrix Polynomials with Applications in System and Control Theory, pp. 7721-7726.

Fazzi, Antonio	Gran Sasso Science Institute
Guglielmi, Nicola	University of L'Aquila
Markovsky, Ivan	Vrije Universiteit Brussel

17:30-17:50 FrC06.4

Reachability Estimation of Stochastic Dynamical Systems by Semi-Definite Programming, pp. 7727-7732.

Liu, Kairong	Beihang University
Li, Meilun	Beihang University
She, Zhikun	Beihang University

17:50-18:10 FrC06.5

Learning Koopman Operators for Systems with Isolated Critical Points, pp. 7733-7739.

Bakker, Craig	Pacific Northwest National Laboratory
Nowak, Kathleen	Pacific Northwest National Laboratory
Rosenthal, Steven	Pacific Northwest National Laboratory

18:10-18:30 FrC06.6

On Trade-Offs between Computational Complexity and Accuracy of Electrochemistry-Based Battery Models, pp. 7740-7745.

Khalik, Zuan	Eindhoven University of Technology
Bergveld, Hendrik Johannes	Eindhoven University of Technology
Donkers, M.C.F.	Eindhoven University of Technology

FrC07 Méditerranée A1

Mechatronics (Regular Session)

Chair: Castaños, Fernando	CINVESTAV
Co-Chair: Reger, Johann	TU Ilmenau

16:30-16:50 FrC07.1

Real-Time Predictive Control for Precision Machining, pp. 7746-7751.

Liniger, Alexander	ETH Zurich
Varano, Luca	ETH Zurich
Rupenyan, Alisa	ETH Zurich
Lygeros, John	ETH Zurich

16:50-17:10 FrC07.2

Stability Analysis for Active Control with a Sky-Hook and Ground-Hook Inerter-Damper Configuration, pp. 7752-7757.

Hu, Yinlong	Hohai University
Chen, Michael Z. Q.	Nanjing University of Science and Technology

17:10-17:30 FrC07.3

CPG Assistive Motion Control for Variable Stiffness Actuators, pp. 7758-7763.

Misgeld, Berno Johannes Engelbert	MedIT, RWTH Aachen University
Efken, Marc	RWTH Aachen University
Liu, Lin	RWTH Aachen University
Iwasaki, Tetsuya	University of California, Los

	Angeles
Leonhardt, Steffen	RWTH Aachen University

17:30-17:50 FrC07.4

Predictive Control of Nano-Positioning Stage Using Recurrent-Neural-Network-Based Inversion Model, pp. 7764-7769.

Xie, Shengwen	Iowa State University
Ren, Juan	Iowa State University

17:50-18:10 FrC07.5

Implicit IDA-PBC for Underactuated Mechanical Systems: An LMI-Based Approach, pp. 7770-7775.

Cieza, Oscar	TU Ilmenau
Castaños, Fernando	CINVESTAV
Reger, Johann	TU Ilmenau

18:10-18:30 FrC07.6

Trajectory Optimization for a Wheel-Legged System for Dynamic Maneuvers That Allow for Wheel Slip, pp. 7776-7781.

Bellegarda, Guillaume	University of California, Santa Barbara
Byl, Katie	University of California, Santa Barbara

FrC08 Méditerranée 3

Model Reduction (Regular Session)

Chair: Van De Wouw, Nathan	Eindhoven University of Technology
Co-Chair: Scherpen, Jacquelien M.A.	University of Groningen

16:30-16:50 FrC08.1

An Extended Model Order Reduction Technique for Linear Delay Systems, pp. 7782-7787.

Naderi Lordejani, Sajad	Eindhoven University of Technology
Besselink, Bart	University of Groningen
Van De Wouw, Nathan	Eindhoven University of Technology

16:50-17:10 FrC08.2

An Interconnection-Based Interpretation of the Loewner Matrices, pp. 7788-7793.

Simard, Joel David	Imperial College London
Astolfi, Alessandro	Imperial College & University of Rome

17:10-17:30 FrC08.3

Synchronization Preserving Model Reduction of Multi-Agent Network Systems by Eigenvalue Assignments, pp. 7794-7799.

Yu, Lanlin	University of Science and Technology of China
Cheng, Xiaodong	Eindhoven University of Technology
Scherpen, Jacquelien M.A.	University of Groningen
Xiong, Junlin	University of Science and Technology of China

17:30-17:50 FrC08.4

Model Reduction for Linear Parameter-Varying Systems through Parameter Projection, pp. 7800-7805.

Schouten, Sil	Eindhoven University of Technology
Lou, Daming	Eindhoven University of Technology
Weiland, Siep	Eindhoven University of Technology

17:50-18:10 FrC08.5

Balanced Truncation for a Special Class of Bilinear Descriptor Systems, pp. 7806-7811.

Pontes Duff Pereira, Igor	Max Planck Institute for Dynamics of Complex Technical Systems
Goyal, Pawan	Max Planck Institute
Benner, Peter	Max Planck Institute for Dynamics of Complex TechnicalSystems

18:10-18:30 FrC08.6

A Two-Sided Iterative Framework for Model Reduction of Linear Systems with Quadratic Output, pp. 7812-7817.

Gosea, Ion Victor	Max Planck Institute for Dynamics of Complex Technical Systems
Antoulas, Athanasios C.	Rice Univ

FrC09 Méditerranée B12

Sensor Networks (Regular Session)

Chair: Sundaram, Shreyas	Purdue University
Co-Chair: Tron, Roberto	Boston University

16:30-16:50 FrC09.1

Distributed State Estimation under Denial of Service, pp. 7818-7823.

Battistelli, Giorgio	University of Firenze
Chisci, Luigi	University of Firenze
Selvi, Daniela	University of Firenze
Tesi, Pietro	University of Firenze

16:50-17:10 FrC09.2

A Computational Theory of Robust Localization Verifiability in the Presence of Pure Outlier Measurements, pp. 7824-7831.

Bahreinian, Mahroo	Boston University
Tron, Roberto	Boston University

17:10-17:30 FrC09.3

Optimal Kalman Consensus Filter for Weighted Directed Graphs, pp. 7832-7837.

Khan, Shiraz	Purdue University
Deshmukh, Raj	Purdue University
Hwang, Inseok	Purdue University

17:30-17:50 FrC09.4

Coverage Control and Distributed Consensus-Based Estimation for Mobile Sensing Networks in Complex Environments, pp. 7838-7843.

Boldrer, Manuel	University of Trento
Fontanelli, Daniele	University of Trento
Palopoli, Luigi	University of Trento

17:50-18:10 FrC09.5

Sensor Selection for Hypothesis Testing: Complexity and Greedy Algorithms, pp. 7844-7849.

Ye, Lintao	Purdue University
Sundaram, Shreyas	Purdue University

18:10-18:30 FrC09.6

Hypothesis Assignment and Partial Likelihood Averaging for Cooperative Estimation, pp. 7850-7856.

Paritosh, Parth	UNIVERSITY OF CALIFORNIA, San Diego
Atanasov, Nikolay	University of California
Martinez, Sonia	University of California, San Diego

FrC10 Méditerranée C12

Sliding-Mode Control III (Regular Session)

Chair: Ferrara, Antonella	University of Pavia
Co-Chair: Hsu, Liu	COPPE/UFRJ

16:30-16:50 FrC10.1

On the Fragility of Multivariable Super-Twisting Algorithm for Non-Symmetric Uncertain Input Matrix, pp. 7857-7862.

Keijock, Timon	COPPE/UFRJ
Nunes, Eduardo Vieira Leao	COPPE - Federal University of Rio de Janeiro
Hsu, Liu	COPPE/UFRJ

16:50-17:10 FrC10.2

Integral Second-Order Sliding Modes for Robust Prescribed-Time Leader-Follower Consensus Control with Partial Information, pp. 7863-7868.

Ferrara, Antonella	University of Pavia
Zambelli, Massimo	University of Pavia

17:10-17:30 FrC10.3

A Barrier Function Based-Adaptive Super-Twisting Controller for Wind Energy Conversion System, pp. 7869-7874.

Obeid, Hussein	Université de Technologie de Belfort-Montbéliard (UTBM)
Laghrouche, Salah	Université de Technologie de Belfort-Montbéliard (UTBM)
Fridman, Leonid	Universidad Nacional Autonoma de Mexico

17:30-17:50 FrC10.4

Smooth Robust Control Applied to Quadrotor Landing, pp. 7875-7880.

Peixoto, Alessandro Jacoud	Federal University of Rio de Janeiro (UFRJ)
Pereira-Dias, Diego	Federal University of Rio de Janeiro
Andrade, Ricardo	Federal University of Rio de Janeiro

17:50-18:10 FrC10.5

Spatially Distributed Networked Sliding Mode Control, pp. 7881-7886.

Ludwiger, Jakob	Graz University of Technology
Steinberger, Martin	Graz University of Technology
Horn, Martin	Graz University of Technology

18:10-18:30 FrC10.6

Sliding Mode Control Techniques and Artificial Potential Field for Dynamic Collision Avoidance in Rendezvous Maneuvers, pp. 7887-7892.

Mancini, Mauro	Politecnico di Torino
Bloise, Nicoletta	Politecnico di Torino
Capello, Elisa	Politecnico di Torino, CNR-IEIIT
Punta, Elisabetta	CNR-IEIIT

FrC11 Galliéni 1

Multi-Sensor Fusion Techniques for State Estimation in Navigation (Invited Session)

Chair: Barrau, Axel	Safran
Co-Chair: Dai, Ran	The Ohio State University
Organizer: Fourati, Hassen	CNRS GIPSA-LAB
Organizer: Barrau, Axel	Safran
Organizer: Farrell, Jay A.	University of California Riverside
Organizer: Liu, Ming	Hong Kong University of Science and Technology
Organizer: Zhou, Zebo	University of Electronic Science and Technology of China

16:30-16:50 FrC11.1

Vision-Aided Spacecraft Relative Pose Estimation Via Dual Quaternion (I), pp. 7893-7898.

Zivan, Yigal	Rafael Advanced Defense Systems Ltd
Choukroun, Daniel	Ben-Gurion University of the Negev

16:50-17:10 FrC11.2

Angle Fixability and Angle-Based Sensor Network Localization (I), pp. 7899-7904.

Jing, Gangshan	Xidian University
Wan, Changhuang	The Ohio State University
Dai, Ran	The Ohio State University

17:10-17:30 FrC11.3

An Invariant Extended Hinf Filter (I), pp. 7905-7910.

Lavoie, Marc-Antoine	McGill University
Arsenault, Jonathan	McGill University
Forbes, James Richard	McGill University

17:30-17:50 FrC11.4

A Finite-Time Stable Observer for Relative Attitude Estimation (I), pp. 7911-7916.

Wang, Ningshan	Syracuse University
Hamrah, Reza	Syracuse University
Sanyal, Amit	Syracuse University

17:50-18:10 FrC11.5

Outlier Accommodation in Sensor Rich Environments: Moving Horizon Risk-Averse Performance-Specified State Estimation (I), pp. 7917-7922.

Aghapour, Elahe	University of California, Riverside
Farrell, Jay A.	University of California Riverside

18:10-18:30 FrC11.6

Magneto-Visual-Inertial Dead-Reckoning : Improving Estimation Consistency by Invariance (I), pp. 7923-7930.

Caruso, David	Sysnav
Eudes, Alexandre	ONERA, Université Paris-Saclay
Sanfourche, Martial	ONERA
Vissière, David	SYSNAV
Le Besnerais, Guy	ONERA, Université Paris-Saclay

FrC12 Galliéni 2

Analysis and Control of Systems with Hysteresis (Invited Session)

Chair: Jayawardhana, Bayu	University of Groningen
Co-Chair: HosseinNia, S. Hassan	Delft University of Technology

Organizer: Jayawardhana, Bayu	University of Groningen
Organizer: Tarbouriech, Sophie	LAAS-CNRS

16:30-16:50 FrC12.1

Stability Analysis of Systems with Nested Saturation and Backlash in the Loop Via Nonstandard Anti-Windup Compensation (I), pp. 7931-7936.

Tarbouriech, Sophie	LAAS-CNRS
Queinnec, Isabelle	LAAS-CNRS
Prieur, Christophe	CNRS

16:50-17:10 FrC12.2

Hysteresis Modeling in Thermal Shape Memory Alloy Wire Actuators: An Irreversible Port-Hamiltonian Approach (I), pp. 7937-7943.

Rizzello, Gianluca	Saarland University
Naso, David	Politecnico di Bari
Seelecke, Stefan	Saarland University

17:10-17:30 FrC12.3

Asymptotic Stability Analysis of Lur'e Systems with Butterfly Hysteresis Nonlinearities, pp. 7944-7949.

Vasquez Beltran, Marco Augusto	University of Groningen
Jayawardhana, Bayu	University of Groningen
Peletier, Reynier	University of Groningen

17:30-17:50 FrC12.4

Reducing Quantization Effects in Motion Control Via Dual-Stage Actuators and Induced Oscillations, pp. 7950-7955.

Salton, Aurelio Tergolina	Universidade FederaldoRio GrandedoSul
Flores, Jeferson Vieira	UFRGS
Zheng, Jinchuan	Swinburne University of Technology
Fu, Minyue	University of Newcastle

17:50-18:10 FrC12.5

Complex Order Control for Improved Loop-Shaping in Precision Positioning, pp. 7956-7962.

Saikumar, Niranjan	Delft University of Technology
Valério, Duarte Pedro Mata de Oliveira	Technical University of Lisbon, Instituto Superior Técnico
HosseinNia, S. Hassan	Delft University of Technology

18:10-18:30 FrC12.6

A Minimum-Time Zero Vibration S-Curve Command for an Overhead Crane with Actuator Limits, pp. 7963-7969.

Ho, Duc Tho	Toyohashi University of Technology
Uchiyama, Naoki	Toyohashi University of Technology
Terashima, Kazuhiko	Toyohashi University of Technology

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Uncertain Systems III (Regular Session)

Chair: Yong, Sze Zheng	Arizona State University
Co-Chair: Farhood, Mazen	Virginia Tech

16:30-16:50 FrC13.1

Robustness to Incorrect Models in Average-Cost Optimal Stochastic Control, pp. 7970-7975.

Kara, Ali Devran	Queen's University
Raginsky, Maxim	University of Illinois, Urbana Champaign
Yuksel, Serdar	Queen's University

16:50-17:10 FrC13.2

Optimization-Based Approaches for Affine Abstraction and Model Discrimination of Uncertain Nonlinear Systems, pp. 7976-7981.

Jin, Zeyuan	Arizona State University
Shen, Qiang	Arizona State University
Yong, Sze Zheng	Arizona State University

17:10-17:30 FrC13.3

Robust Hybrid Output Regulation for Linear Systems with Periodic Jumps: The Non-Semiclassical Case, pp. 7982-7987.

de Carolis, Giovanni	University of Rome, Tor Vergata
Galeani, Sergio	University of Rome, Tor Vergata
Sassano, Mario	University of Rome, Tor Vergata

17:30-17:50 FrC13.4

On the Analytic Center Cutting Plane Method for the Discrete-Time Integral Quadratic Constraint Problem, pp. 7988-7993.

Abou Jaoude, Dany	American University of Beirut
Palframan, Mark	Virginia Tech
Farhood, Mazen	Virginia Tech

18:10-18:30 FrC13.6

Active Perception and Control from Temporal Logic Specifications, pp. 7994-7999.

Rodrigues da Silva, Rafael	University of Notre Dame
Kurtz, Vincent	University of Notre Dame
Lin, Hai	University of Notre Dame

FrC14 Galliéni 7

Stability of Nonlinear Systems III (Regular Session)

Chair: Fromion, Vincent	INRA
Co-Chair: Reverdy, Paul	University of Arizona

16:30-16:50 FrC14.1

Numerical Computation of Critical System Recovery Parameter Values by Trajectory Sensitivity Maximization, pp. 8000-8006.

Fisher, Michael W	University of Michigan
Hiskens, Ian	University of Michigan

16:50-17:10 FrC14.2

A Data Driven Vector Field Oscillator with Arbitrary Limit Cycle Shape, pp. 8007-8012.

Pasandi, Venus	Isfahan University of Technology
Dinale, Aiko	Istituto Italiano Di Tecnologia
Keshmiri, Mahdi	Isfahan University of Technology
Pucci, Daniele	Istituto Italiano Di Tecnologia

17:10-17:30 FrC14.3

A Sufficient Condition for the Almost Global Stability of Nonlinear Switched Systems with Average Dwell Time, pp. 8013-8017.

İlhan, Ferruh	Istanbul Technical University
Karabacak, Özkan	Aalborg University
Wisniewski, Rafal	Aalborg University

17:30-17:50 FrC14.4

On L2, the Set of Lipschitz Continuous Operators Is a Set of First Category in the Set of Uniformly Continuous Operators, pp. 8018-8023.

Fromion, Vincent — INRA
Scorletti, Gerard — Ecole Centrale de Lyon

17:50-18:10 FrC14.5

Universal Formula for Robust Stabilization of Affine Nonlinear Multistable Systems, pp. 8024-8029.

de Figueiredo Barroso, Nelson — INRIA Lille/University of Lille
Ushirobira, Rosane — INRIA
Efimov, Denis — INRIA

18:10-18:30 FrC14.6

Two Paths to Finding the Pitchfork Bifurcation in Motivation Dynamics, pp. 8030-8035.

Reverdy, Paul — University of Arizona

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Chair: Maschke, Bernhard — University Claude Bernard of Lyon
Co-Chair: Gray, W. Steven — Old Dominion University

16:30-16:50 FrC15.1

Flat Outputs in Terms of SISO Operator Compositions, pp. 8036-8041.

Gray, W. Steven — Old Dominion University

16:50-17:10 FrC15.2

B-Spline Generalized Hold for Nonlinear Sampled-Data Systems, pp. 8042-8047.

Sanchez, Claudia — Universidad Tecnica Federico Santa Maria
Yuz, Juan I. — Universidad Tecnica Federico Santa Maria

17:10-17:30 FrC15.3

Realization Theory of Recurrent Neural Networks and Rational Systems, pp. 8048-8053.

Defourneau, Thibault — Université de Lille
Petreczky, Mihaly — UMR CNRS 9189, Ecole Centrale de Lille

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On the Generation of Virtual Holonomic Constraints for Mechanical Systems with Underactuation Degree One, pp. 8054-8060.

Otsason, Rein Dylan — University of Toronto
Maggiore, Manfredi — University of Toronto

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Necessary and Sufficient LMI Conditions for Constraints Satisfaction within a B-Spline Framework, pp. 8061-8066.

Prodan, Ionela — Grenoble Institute of Technology (Grenoble INP) - Esisar
Stoican, Florin — UPB (Politehnica UNiversity of Bucharest)
Louembet, Christophe — LAAS-CNRS

18:10-18:30 FrC15.6

Port-Thermodynamic Systems and the Assignment of Their Structure by Feedback, pp. 8067-8072.

Maschke, Bernhard — University Claude Bernard of Lyon
van der Schaft, Arjan — University of Groningen

FrC16 Rhodes AB

Numerical Algorithms (Regular Session)

Chair: Arcak, Murat — University of California, Berkeley
Co-Chair: Tsachouridis, Vassilios A. — United Technologies Research Centre Ireland, Ltd

16:30-16:50 FrC16.1

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Tsachouridis, Vassilios A. — United Technologies Research Centre Ireland, Ltd
Giantamidis, Georgios — United Technologies Research Centre Ireland, Ltd

16:50-17:10 FrC16.2

Energy-Preserving, Adaptive Time-Step Lie Group Variational Integrators for Rigid Body Motion in SE(3), pp. 8079-8084.

Sharma, Harsh — Virginia Polytechnic Institute and State University
Patil, Mayuresh J. — Virginia Tech
Woolsey, Craig — Virginia Tech

17:10-17:30 FrC16.3

Contraction Estimates for Abstract Real-Time Algorithms for NMPC, pp. 8085-8092.

Zanelli, Andrea — University of Freiburg
Tran-Dinh, Quoc — University of North Carolina, Chapel Hill
Diehl, Moritz — University of Freiburg

17:30-17:50 FrC16.4

Continuous Abstraction of Nonlinear Systems Using Sum-Of-Squares Programming, pp. 8093-8098.

Smith, Stanley W. — University of California, Berkeley
Yin, He — University of California, Berkeley
Arcak, Murat — University of California, Berkeley

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Spasojevic, Igor — MIT
Murali, Varun — MIT
Karaman, Sertac — Massachusetts Institute of Technology

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Koopman Operators for Generalized Persistence of Excitation Conditions for Nonlinear Systems, pp. 8106-8111.

Boddupalli, Nibodh — University of California Santa Barbara
Hasnain, Aqib — UCSB
Yeung, Enoch — University of California Santa Barbara
Nandanoori, Sai Pushpak — Iowa State University

FrC17 Rhodes CD

Power Electronics (Regular Session)

Chair: Dörfler, Florian — Swiss Federal Institute of Technology (ETH) Zurich
Co-Chair: Oliveira, Vilma A. — Universidade de Sao Paulo

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Magossi, Rafael	University of São Paulo
Oliveira, Vilma A.	Universidade de Sao Paulo
Machado, Ricardo Quadros	University of São Paulo
Bhattacharyya, Shankar P.	Texas a & M Univ

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Current Sensorless Control of Bidirectional Converters under Mixed Conduction Mode, pp. 8118-8123.

Lin, Jun	Tel Aviv University
Weiss, George	Tel Aviv University

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Robust Relay Control for Buck Converters: Experimental Application, pp. 8124-8129.

Ndoye, Aboubacar	INSA LYON
Delpoux, Romain	INSA Lyon
Hetel, Laurentiu	CNRS
Kruszewski, Alexandre	Ecole Centrale de Lille
Tregouet, Jean-Francois	Ampère Laboratory / INSA-Lyon
Lin Shi, Xuefang	INSA Lyon

17:30-17:50 FrC17.4

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Huang, Linbin	Zhejiang University
Coulson, Jeremy	ETH Zürich
Lygeros, John	ETH Zurich
Dörfler, Florian	ETH Zürich

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Stability Analysis of a Parallel-Converter System with Master/Slave Configuration, pp. 8136-8141.

Yan, Jiaqi	Nanyang Technological University, Singapore
Qi, Yang	Nanyang Technological University, Singapore

18:10-18:30 FrC17.6

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Lymperopoulos, Georgios	University of Southern California
Ioannou, Petros A.	University of Southern California

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Chair: Phillips, Sean	Air Force Research Laboratory
Co-Chair: Braun, Philipp	University of Newcastle

16:30-16:50 FrC18.1

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Della Rossa, Matteo	LAAS CNRS
Goebel, Rafal	Loyola University Chicago
Tanwani, Aneel	Laas -- Cnrs
Zaccarian, Luca	LAAS-CNRS and University of Trento

16:50-17:10 FrC18.2

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Braun, Philipp	University of Newcastle
Kellett, Christopher M.	University of Newcastle
Zaccarian, Luca	LAAS-CNRS and University of Trento

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Observer-Based Synchronization of Multi-Agent Systems Using Intermittent Output Measurements, pp. 8160-8165.

Phillips, Sean	Air Force Research Laboratory
Sanfelice, Ricardo G.	University of California, Santa Cruz

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Iannelli, Luigi	University of Sannio
Iervolino, Raffaele	Univeristy of Napoli Federico Ii
Vasca, Francesco	University of Sannio

17:50-18:10 FrC18.5

Stability Analysis of Piecewise Affine Discrete-Time Systems, pp. 8172-8177.

Broering Groff, Leonardo	Universidade FederaldoRio GrandedoSul (UFRGS)
Valmorbida, Giorgio	L2S, CentraleSupelec
Gomes da Silva Jr, Joao Manoel	Universidade FederaldoRio GrandedoSul (UFRGS)

18:10-18:30 FrC18.6

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Fromion, Vincent	INRA
Scorletti, Gerard	Ecole Centrale De Lyon

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Stochastic Optimal Control III (Regular Session)

Chair: Charalambous, Charalambos D.	University of Cyprus
Co-Chair: Pavon, Michele	University of Padova

16:30-16:50 FrC19.1

Series Solution of Stochastic HJB Equations, pp. 8184-8189.

Krener, Arthur J	Naval Postgraduate School

16:50-17:10 FrC19.2

Generalizations of Nonanticipative Rate Distortion Function to Multivariate Nonstationary Gaussian Autoregressive Processes, pp. 8190-8195.

Charalambous, Charalambos D.	University of Cyprus
Kourtellaris, Christos	University of Cyprus
Charalambous, Themistoklis	Aalto University
van Schuppen, Jan H.	Van Schuppen Control Research

17:10-17:30 FrC19.3

Convex Optimization-Based Controller Design for Stochastic Nonlinear Systems Using Contraction Analysis, pp. 8196-8203.

Tsukamoto, Hiroyasu	California Institute of Technology
Chung, Soon-Jo	California Institute of Technology

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Covariance Steering in Zero-Sum Linear-Quadratic Two-Player Differential Games, pp. 8204-8209.

Chen, Yongxin	Georgia Institute of Technology
Georgiou, Tryphon T.	University of California, Irvine
Pavon, Michele	University of Padova

17:50-18:10 FrC19.5

Linear Quadratic Mean Field Social Optimization: Asymptotic Solvability, pp. 8210-8215.

Huang, Minyi — Carleton University
Yang, Xuwei — Carleton University

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A Convex Duality Approach to Optimal Control of Killed Markov Processes, pp. 8216-8223.

Pakniyat, Ali — Georgia Institute of Technology
Vasudevan, Ramanarayan — University of Michigan

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Chair: Hoagg, Jesse B. — University of Kentucky
Co-Chair: Mojica-Nava, Eduardo — National University of Colombia

16:30-16:50 FrC20.1

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Gilhuly, Barry James — University of Waterloo
Smith, Stephen L. — University of Waterloo

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Heintz, Christopher — University of Kentucky
Hoagg, Jesse B. — University of Kentucky

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Lippay, Zachary — University of Kentucky
Hoagg, Jesse B. — University of Kentucky

17:30-17:50 FrC20.4

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Arevalo-Castiblanco, Miguel Felipe — Universidad Nacional de Colombia
Tellez-Castro, Duvan Andres — Universidad Nacional de Colombia
Cardona, Gustavo Andres — Universidad Nacional de Colombia
Mojica-Nava, Eduardo — National University of Colombia

17:50-18:10 FrC20.5

Necessary Conditions and Sufficient Conditions for Finding a Common Fixed Point of a Family of Maps Using a Distributed Algorithm, pp. 8248-8253.

Fullmer, Daniel — Yale University
Liu, Ji — Stony Brook University
Morse, A. Stephen — Yale Univ

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Explicit Agent-Level Optimal Cooperative Controllers for Dynamically Decoupled Systems with Output Feedback, pp. 8254-8259.

Kashyap, Mruganka — University of Wisconsin-Madison
Lessard, Laurent — University of Wisconsin-Madison

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Networked Control Systems VI (Regular Session)

Chair: Diaz-Mercado, Yancy — University of Maryland
Co-Chair: Schenato, Luca — University of Padova

16:30-16:50 FrC21.1

Adaptive Consensus of Nonlinearly Parameterized Multi-Agent Systems, pp. 8260-8265.

Imran, Imil Hamda — University of Newcastle
Chen, Zhiyong — University of Newcastle
Yan, Yamin — University of Newcastle
Fu, Minyue — University of Newcastle

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Baharloo, Mohammad Mahdi — Concordia University
Arabneydi, Jalal — McGill University
Aghdam, Amir G. — Concordia University

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Barforooshan, Mohsen — Aalborg University
Nagahara, Masaaki — University of Kitakyushu
Ostergaard, Jan — Aalborg University

17:30-17:50 FrC21.4

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Davydov, Alexander — University of Maryland, College Park
Diaz-Mercado, Yancy — University of Maryland

17:50-18:10 FrC21.5

Stabilization of Non-Linear Networked Control Systems Closed Over a Lossy WirelessHART Network, pp. 8284-8289.

Maass, Alejandro I. — University of Melbourne
Nesic, Dragan — University of Melbourne

18:10-18:30 FrC21.6

Reference Governor for Constrained Control Over Lossy Channels, pp. 8290-8295.

Pezzutto, Matthias — University of Padova
Schenato, Luca — University of Padova
Garone, Emanuele — Université Libre de Bruxelles

FrC22 Risso 7

Maritime Control and Autonomous Vehicles (Regular Session)

Chair: Enqvist, Martin — Linköping University
Co-Chair: Daher, Naseem — American University of Beirut

16:30-16:50 FrC22.1

Suppression of Wave Disturbances and Tracking Control for Marine Systems, pp. 8296-8302.

Kennedy, Justin Matthew — Queensland University of Technology (QUT)
Donaire, Alejandro — University of Newcastle
Ford, Jason — Queensland Univeristy of Technology
Valentinis, Francis — Defence Science and Technology Group

16:50-17:10 FrC22.2

Streamline-Based Control of Underwater Gliders in 3D Environments, pp. 8303-8310.

To, Kwun Yiu Cadmus	University of Technology Sydney
Lee, James Ju Heon	University of Technology Sydney
Yoo, Chanyeol	University of Technology Sydney
Anstee, Stuart	Defence Science and Technology Group
Fitch, Robert Charles	University of Technology Sydney

17:10-17:30 FrC22.3

Robust Trajectory Tracking Control for Underactuated Autonomous Underwater Vehicles, pp. 8311-8316.

Heshmati-alamdari, Shahab	KTH Royal Institute of Technology
Nikou, Alexandros	KTH Royal Institute of Technology
Dimarogonas, Dimos V.	KTH Royal Institute of Technology

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Ljungberg, Fredrik	Linköping University
Enqvist, Martin	Linköping University

17:50-18:10 FrC22.5

An Energy Optimal Path-Planning Scheme for Quadcopters in Forests, pp. 8323-8328.

Aoun, Christoph	American University of Beirut
Daher, Naseem	American University of Beirut
Shammas, Elie	American University of Beirut

18:10-18:30 FrC22.6

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Nonhoff, Marko	Leibniz University Hannover
Köhler, Philipp N.	University of Stuttgart
Kohl, Anna	NTNU
Pettersen, Kristin Y.	Norwegian University of Science and Technology (NTNU)
Allgöwer, Frank	University of Stuttgart

FrC23 Risso 8

Large-Scale Distributed Optimization and Decentralized Control II (Invited Session)

Chair: Uribe, Cesar	Massachusetts Institute of Technology
Co-Chair: Nedich, Angelia	Arizona State University
Organizer: Uribe, Cesar	Massachusetts Institute of Technology
Organizer: Nedich, Angelia	Arizona State University
Organizer: Olshevsky, Alexander	Boston University

16:30-16:50 FrC23.1

Multi-Layer Disease Spread Model with a Water Distribution Network, pp. 8335-8340.

Pare, Philip E.	KTH Royal Institute of Technology
Liu, Ji	Stony Brook University
Sandberg, Henrik	KTH Royal Institute of Technology
Johansson, Karl H.	KTH Royal Institute of Technology

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Resilient Distributed Optimization Algorithms for Resource Allocation (I), pp. 8341-8346.

Uribe, Cesar	Massachusetts Institute of Technology
Wai, Hoi-To	The Chinese University of Hong Kong
Alizadeh, Mahnoosh	University of California Santa Barbara

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A Communication-Efficient Algorithm for Exponentially Fast Non-Bayesian Learning in Networks (I), pp. 8347-8352.

Mitra, Aritra	Purdue University
Richards, John A.	Sandia National Laboratories
Sundaram, Shreyas	Purdue University

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Distributed Stochastic Optimization with Gradient Tracking Over Strongly-Connected Networks (I), pp. 8353-8358.

Xin, Ran	Carnegie Mellon University
Sahu, Anit Kumar	Bosch Center for Artificial Intelligence
Khan, Usman A.	Tufts University
Kar, Soummya	Carnegie Mellon University

17:50-18:10 FrC23.5

Optimal and Approximate Solutions to Linear Quadratic Regulation of a Class of Graphon Dynamical Systems, pp. 8359-8365.

Gao, Shuang	McGill University
Caines, Peter E.	McGill University

18:10-18:30 FrC23.6

A Communication-Based Distributed Model Predictive Control Approach for Large-Scale Systems, pp. 8366-8371.

Segovia, Pau	Universitat Politècnica de Catalunya (UPC)
Lala, Rajaoarisoa	Mines Douai
Nejjari, Fatiha	Universitat Politecnica de Catalunya
Duviella, Eric	IMT Lille Douai
Puig, Vicenc	Universitat Politècnica de Catalunya

FrC24 Hermès

PID Control (Regular Session)

Chair: Bazanella, Alexandre S.	Univ. Federal do Rio Grande do Sul
Co-Chair: Rodrigues, Luis	Concordia University

16:30-16:50 FrC24.1

PID Control of Biochemical Reaction Networks, pp. 8372-8379.

Whitby, Max Alexander Norman	Oxford University
Cardelli, Luca	Microsoft Research
Laurenti, Luca	University of Oxford
Tribastone, Mirco	IMT Institute for Advanced Studies
Tschaikowski, Max	TU Wien
Kwiatkowska, Marta	University of Oxford

16:50-17:10 FrC24.2

Robust IMC-PIDA Controller Design for Load Frequency Control of a Time Delayed Power System, pp. 8380-8385.

Kumar, Mahendra	Indian Institute of Technology,

	Roorkee
Hote, Yogesh Vijay	Indian Institute of Technology, Roorkee

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Extension of the Correlation-Based Tuning Method for Load Disturbance Rejection, pp. 8386-8391.

da Silva, Roger Willian P.	Universidade Federal do Rio Grande do Sul
Eckhard, Diego	Universidade Federal do Rio Grande do Sul

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Extraction of Informative Subsets from Routine Operating Data for Use in Data-Driven Control, pp. 8392-8397.

Garcia, Cristiane	Universidade Federal do Rio Grande do Sul
Bazanella, Alexandre S.	Universidade Federal do Rio Grande do Sul

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Multivariable PID Synthesis Via a Static Output Feedback LMI, pp. 8398-8403.

Carvalho, Bruno	Concordia University
Rodrigues, Luis	Concordia University

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Zhang, Jinke	Academy of Mathematics and Systems Science Chinese Academy of Sciences
Guo, Lei	Academy of Mathematics and Systems Science, Chinese Aacdemy of Sciences

FrC25 Athéna

Power Systems III (Regular Session)

Chair: Cucuzzella, Michele	University of Groningen
Co-Chair: Espinosa-Perez, Gerardo	Universidad Nacional Autonoma de Mexico

16:30-16:50 FrC25.1

Decentralized Load Frequency Control with Prescribed Performance for Interconnected Power Systems, pp. 8410-8415.

Bechlioulis, Charalampos P.	National Tech. Univ. of Athens
Dritsas, Leonidas	ASPETE
Kyriakopoulos, Kostas J.	National Tech. Univ. of Athens

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The Role of Strategic Load Participants in Two-Stage Settlement Electricity Markets, pp. 8416-8422.

You, Pengcheng	Johns Hopkins University
Gayme, Dennice	Johns Hopkins University
Mallada, Enrique	Johns Hopkins University

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On the Dynamic Solution of Power Flow Equations for Microgrids Control, pp. 8423-8428.

Avila-Becerril, Sofia	Universidad Nacional Autonoma de Mexico
Espinosa-Perez, Gerardo	Universidad Nacional Autonoma de Mexico
Machado Martínez, Juan	Université Paris-Sud
Eduardo	

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A Market for Retail Electric Provider Based Demand Response, pp. 8429-8434.

Xia, Bainan	Texas A&M University
Lee, Ki-Yeob	Texas A&M University
Shakkottai, Srinivas	Texas A&M University
Kalathil, Dileep	Texas A&M University

17:50-18:10 FrC25.5

Robust Passivity-Based Control of Boost Converters in DC Microgrids, pp. 8435-8440.

Cucuzzella, Michele	University of Groningen
Lazzari, Riccardo	Department of Power Generation Technologies and Materials, RSE S
Kawano, Yu	Hiroshima University
Kosaraju, Krishna Chaitanya	University of Groningen
Scherpen, Jacquelien M.A.	University of Groningen

18:10-18:30 FrC25.6

Real-Time Identifiability of Power Distribution Network Topologies with Limited Monitoring, pp. 8441-8446.

Cavraro, Guido	National Renewable Energy Laboratory
Bernstein, Andrey	National Renewable Energy Laboratory
Kekatos, Vassilis	Virginia Tech
Zhang, Yingchen	National Renewable Energy Laboratory

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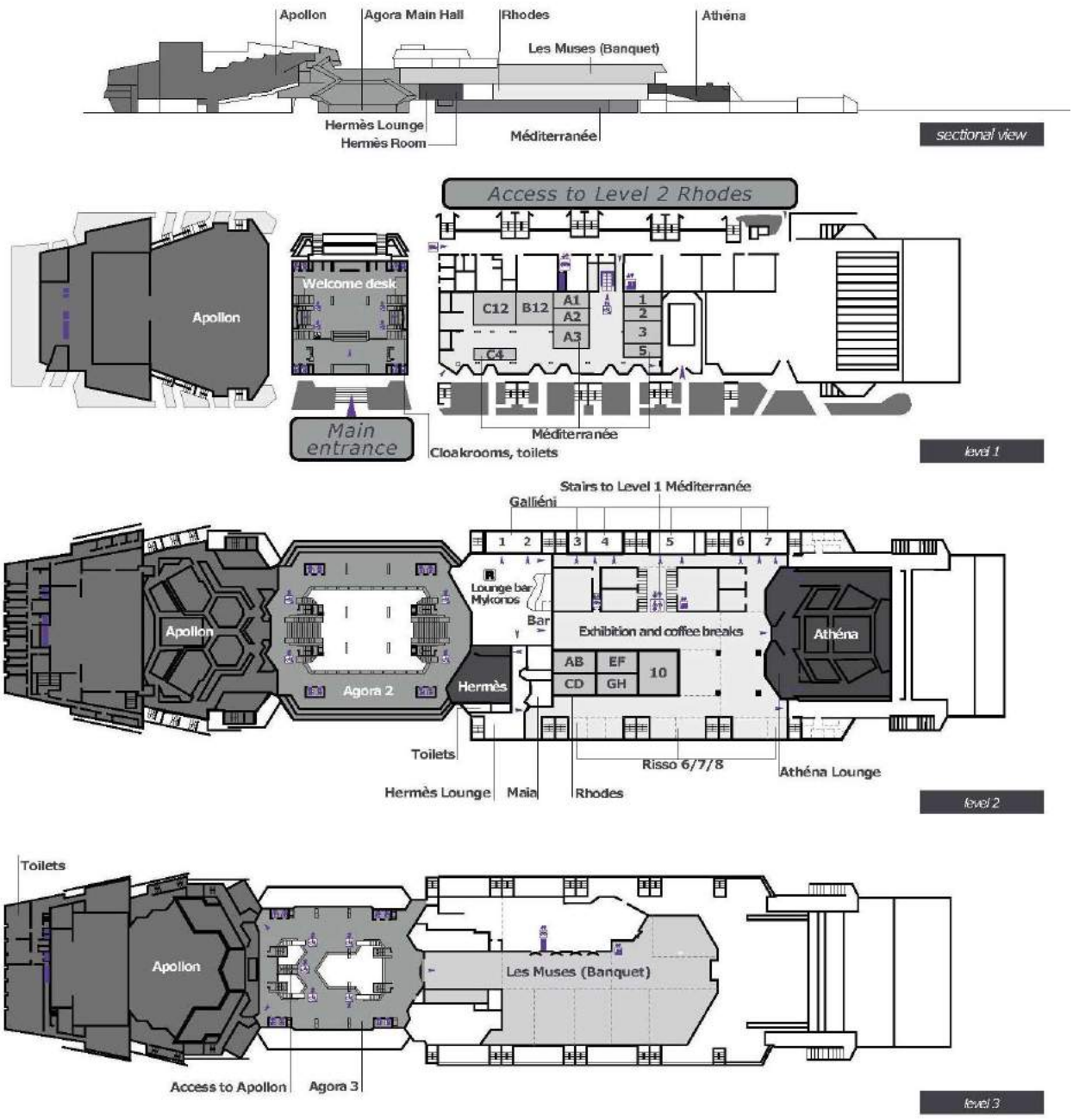

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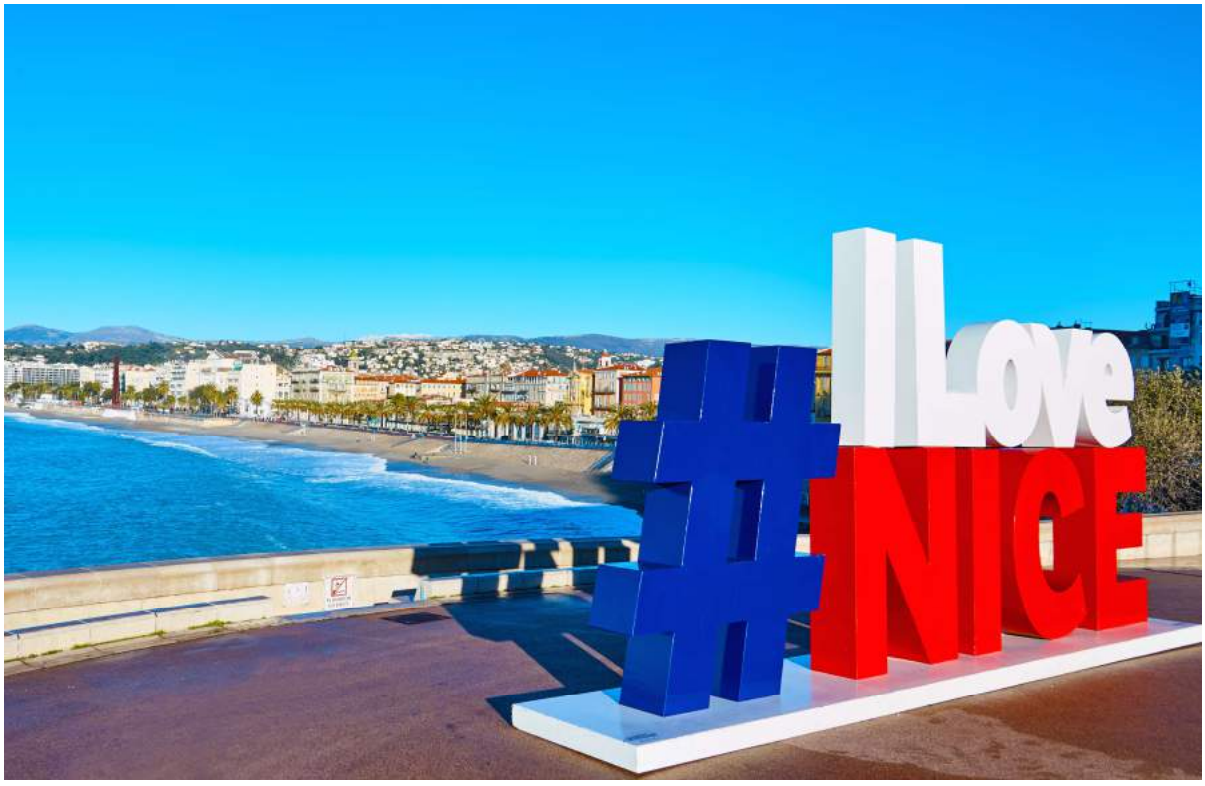
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