



Delft University of Technology

FOREWORD

Loiseau, Jean Jacques; Boussaada, Islam; Rocha, Paula; Quadrat, Aiban; Stoica, Cristina; Reppa, Vasso

Publication date

2025

Document Version

Final published version

Published in

IFAC-PapersOnline

Citation (APA)

Loiseau, J. J., Boussaada, I., Rocha, P., Quadrat, A., Stoica, C., & Reppa, V. (2025). FOREWORD. *IFAC-PapersOnline*, 59(12), vii.

Important note

To cite this publication, please use the final published version (if applicable).
Please check the document version above.

Copyright

Other than for strictly personal use, it is not permitted to download, forward or distribute the text or part of it, without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license such as Creative Commons.

Takedown policy

Please contact us and provide details if you believe this document breaches copyrights.
We will remove access to the work immediately and investigate your claim.

International Federation of Automatic Control

9th IFAC Symposium on System Structure and Control SSSC 2025

Gif-sur-Yvette, France, June 30 – July 02, 2025

PROCEEDINGS

Edited by

Jean Jacques Loiseau, *Laboratoire des Sciences du Numérique de Nantes, FR*
Alban Quadrat, *Institut de Mathématiques de Jussieu-Paris Rive Gauche, Sorbonne
Université, INRIA Paris, FR*



Copyright @ 2025 the authors.
Open access publication under the CC-BY-NC-ND License
(<https://creativecommons.org/licenses/by-nc-nd/4.0/>)

IFAC PapersOnline — ISSN 2405-8963

Published by:
International Federation of Automatic Control (IFAC)
Hosting by Elsevier Ltd.

Available online at
www.sciencedirect.com

Publication date
July 2025

Copyright conditions

All publication material submitted for presentation at an IFAC-sponsored meeting (Congress, Symposium, Conference, Workshop) must be original and hence cannot be already published, nor can it be under review elsewhere. The authors take responsibility for the material that has been submitted. IFAC-sponsored conferences will abide by the highest standard of ethical behavior in the review process as explained on the Elsevier webpage (<https://www.elsevier.com/authors/journal-authors/policies-and-ethics>), and the authors will abide by the IFAC publication ethics guidelines (<https://www.ifac-control.org/events/organizers-guide/PublicationEthicsGuidelines.pdf/view>).

Accepted papers that have been presented at an IFAC meeting will be published in the proceedings of the event using the open-access IFAC-PapersOnLine series hosted on [ScienceDirect](https://www.sciencedirect.com) (<https://www.sciencedirect.com>). To this end, the author(s) must grant exclusive publishing rights to IFAC under a Creative Commons license when they submit the final version of the paper. The copyright belongs to the authors, who have the right to share the paper in the same terms allowed by the end user license, and retain all patent, trademark and other intellectual property rights (including research data).

(<https://www.ifac-control.org/publications/copyright-conditions>).

9th IFAC Symposium on System Structure and Control SSSC 2025

Sponsored by

International Federation of Automatic Control (IFAC)

- Linear Control Systems, TC 2.2

Co-Sponsored

International Federation of Automatic Control (IFAC)

- TC 2.1. Control Design
- TC 2.3. Non-Linear Control Systems
- TC 2.6. Distributed Parameter Systems

Partners



Supporting organizations

CNRS-Africa Joint Research Programme



GRADUATE SCHOOL
Informatique
et Sciences
du Numérique



GRADUATE SCHOOL
Engineering and
Systems Sciences



International Programme Committee

Paula Rocha, PT (IPC Chair)
Vasso Reppa, NL (IPC Co-Chair)
Mohammed-Tahar Laraba, FR (IPC Industry Vice-Chair)
Luigi Glielmo, IT (IFAC Conference board liaison)

Thiago Alves Lima, FR

Olivier Bachelier, FR

Sylvain Bertrand, FR

Moises Bonilla, MX

Dimitris Boskos, NL

Andrei Braitor, FR

Laurent Burlion, US

Kanat Camlibel, NL

Thomas Chevet, FR

Elena De Santis, IT

Sette Diop, FR

Nikos Karampetakis, GR

Alireza Karimi, CH

Margretta Kuijper, AU

Ibrahim Kucukdemiral, UK

Fatima Leite, PT

Rachid Malti, FR

Jaqueleine Godoy Mesquita, BR

Hugues Mounier, FR

Diego Napp, ES

Cristian Oara, RO

Carlos Ocampo-Martinez, ES

Hitay Ozbay, TR

Debasattam Pal, IN

Anna Maria Perdon, IT

Kamen L. Perev, BG

Radu-Emil Precup, RO

Paolo Rapisarda, UK

Jurek Sasiadek, CA

Maria Seron, AU

Stelios Timotheou, CY

Antonello Venturino, IT

Blas M. Vinagre, ES

Victor Vinnikov, US

Antonio Visioli, IT

Elena Zattoni, IT

Eva Zerz, DE

Zhen Zhang, CN

National Organizing Committee

Islam Boussaada, FR (Co-General Chair)

Cristina Stoica, FR (Co-General Chair)

Sami Tiba, FR (Industry Vice-Chair)

Karim Trabelsi, FR (Finance Chair)

Laurent Pfeiffer, FR (Artistic Activities Chair)

Riccardo Bonalli, FR (Industrial Panel Chair)

Jean Auriol, FR (Publicity and Website Chair)

Timothée Schmoderer, FR (Registration Chair)

Guilherme Mazanti, FR (Student Activity Chair)

IFAC-PapersOnline Editorial Board

Editor-in-Chief

José-Luis Díez
Universitat Politècnica de Valencia
Spain

Advisor

Carlos Eduardo Pereira
Universidade Federal de
Rio Grande do Sul, Brazil

Editors

Systems and Signals

Alessandro Chiuso
Università di Padova, Italy

Design Methods

Laura Menini
Università di Roma "Tor Vergata",
Italy

Computer, Cognition and Communication

Thierry Marie Guerra
Université de Valenciennes et
Hainaut-Cambrésis, France

Mechatronics, Robotics and Components

Reza Moheimani
The University of Texas at Dallas,
USA

Cyber-Physical Manufacturing Enterprises

Dmitry Ivanov
Hochschule für Wirtschaft &
Recht Berlin, Germany

Process and Power Systems

Rolf Findeisen
Technische Universität
Darmstadt, Germany

Transportation and Vehicle Systems

Roberto Galeazzi
Technical University of Denmark

Bio & Ecological Systems

Ronald van Nooijen
TU Delft, Netherlands

Social Systems

Fei-Yue Wang
Chinese Academy of Sciences,
China

Associate Editors

Guillaume Mercere
Université de Poitiers, France

Tiago Roux Oliveira
Universidade Federal do Rio de
Janeiro, Brazil

Carla Seatzu
Università degli Studi di Cagliari

Yilin Mo
Tsinghua University, China

Luca Schenato
University of Padova, Italy

Sergio Galeani
Università di Roma Tor Vergata,
Italy

Elena Zattoni,
University of Bologna, Italy

Hiroshi Ito,
Kyushu Institute of Technology,
Japan

Gabriele Pannocchia
University of Pisa, Italy

Constantino Lagoa
The Pennsylvania State
University, USA

Yann Le Gorrec
ENSM, France

Mike Barth
Karlsruhe Institute of Technology,
Germany

Kevin Guelton
Université de Reims, France

Lei Ma
Southwest Jiaotong University,
China

Wolfgang Kemmetmüller
Vienna University of Technology,
Austria

Kyoungchul Kong
Korea Advanced Institute of
Science and Technology,
Republic of Korea

Sören Hohmann
Karlsruhe Institute of Technology,
Germany

Marco Macchi
Politecnico di Milano, Italy

Fabio Sgarbossa
Norwegian University of Science
and Technology, Norway

Qing Li
Tsinghua University, China

Wei Ren
University of California, Riverside
USA

Jong Ming Lee
Seoul National University,
Republic of Korea

Chris Aldrich
Curtin University, Australia

Michela Robba
University of Genova, Italy

Vicenç Puig
Universitat Politècnica de
Catalunya, Spain

Lars Eriksson
Linköping University, Sweden

Andrea Monteriù
Università Politecnica delle
Marche, Italy

Paolo Castaldi
University of Bologna, Italy

Tankut Acarman
Galatasaray Üniversitesi, Turkey

Zdzisław Kowalcuk
Politechnika Gdańsk, Poland

Timo Oksanen
Technical University Munich,
Germany

Balázs Benyó
Budapest University of
Technology and Economics,
Hungary

Marialuisa Volta
Università di Brescia, Italy

Jesus Pico i Marco
Universitat Politecnica de
Valencia, Spain

Xiao Wang
Chinese Academy of Sciences,
China

Mariana Netto
Université Gustave Eiffel, France

Xiaoyu Cao
Xi'an Jiaotong University, China

Antonio Visioli
Università di Brescia, Italy

Bahadur Ibrahimov
Azerbaijan Robotics and
Automation Society, Azerbaijan

FOREWORD

The 9th IFAC Symposium on System Structure and Control (SSSC) was held in Gif-sur-Yvette, France, from June 30 to July 2, 2025, jointly with the 19th IFAC Workshop on Time Delay Systems (TDS) and the 2nd IFAC Workshop on Control of Complex Systems (COSY).

After the joint conferences held in Grenoble in 2013 and in Montreal in 2022, it was the third time that three events belonging to series organized with the main sponsorship of the IFAC Technical committee 2.2 “Linear Control Systems” are organized together, to permit the researchers from close fields to meet and exchange ideas and new trends.

The program committee has received 189 submissions, that gave rise to 488 review reports, to select the 170 high level communications, from 444 different authors, that formed the final program. Each proposal has received at least 2 review reports. The authors had the possibility to submit an extended abstract, for a dissemination or discussion, or a full paper for inclusion in the proceedings. The preprints distributed to the attendees include 45 extended abstracts and 125 full papers, for 840 pages of scientific reports covering recent research on the topics of the TC 2.2.

A part of the program was shared by the three events. Three plenary talks were delivered by M. Khammash (Designing feedback-controlled cellular systems), E. Zerz (Controlled invariance and collision-freeness: a symbolic computation point of view), and W. Michiels (From Lissajous curves, slack variables and small solutions to constructive design methods for timer-delay systems). They pointed out the challenges and successes of systems and control theory in very active research directions. A panel session on “The future of control: Energy, AI & robotics” permitted to G. M. Arellano, G. Avrin, and G. Boeris, under the moderation of R. Bonalli, to share their insights on the role of control to address major societal challenges.

For the first time an artistic dimension was integrated into the conference identity, through animated logos for each of the three events, a dedicated invited session “When Art and Science meet”, a humoristic cartoon exhibition on control vocabulary and concepts, and an “Art & Control” live show combining live classical music and contemporary dance improvisation inspired by the conference keywords (time-delay, robustness, stabilization, leader-follower, vibration and impulsive control), prepared by L. Pfeiffer and C. Stoica. Finally, a “PhD Students Forum” was organized by C. Stoica, bringing together PhD students, post-doctoral researchers, undergraduate students, with R&D and HR representatives from industry (Axon, MathWorks, MBDA, Omnipactory, Parrot, Solent, Wandercraft) to interact and create opportunities.

The program that was specific to SSSC included 2 semi-plenary sessions, 4 contributed sessions and 5 invited sessions. The two semi-plenary sessions were delivered by L. Pavel (On system theory for learning in games) and P. Rouchon (Quantum error correction and feedback), providing in-depth presentations on topics of exceptional current interest. The 4 contributed sessions were on Feedback control, Systems, Estimation, System & control applications, and the 5 invited sessions on Data driven control I, Computer algebra and control theory I, Data driven control II, New Results in Multidimensional Systems Theory, Computer algebra and control Theory II. The 51 communications gave rise to 35 full papers and 16 extended abstracts, by 130 authors. The present proceedings include the 35 full papers.

The gala dinner of the conference took place on a riverboat of the river Seine, at the foot of the Eiffel tower. It was the occasion to deliver the IFAC System Structure and Control Lifetime Achievement Award to Anna Maria Perdon, for her continuous involvement onto our activities for her whole career. The IFAC Young Author Prize on System Structure and Control was attributed to Raphaël Mahaut, for his presentation of the paper coauthored with Antonello Venturino. Our warmest congratulations are addressed to the recipients.

On a final note, we would like to express our gratitude to the members of the program and organization committees, and to all the reviewers, whose competencies permitted to select high quality communications, sessions chairs, whose involvement assured the sessions success, the staff and volunteers from the organization, who all made this great event possible.

Jean Jacques Loiseau (Program Editor)
Islam Boussaada (Co-General Chair)
Paula Rocha (IPC Chair)

Alban Quadrat (SSSC Co-Editor)
Cristina Stoica (Co-General Chair))
Vasso Reppa (IPC Co-Chair)