

2021 9th International Conference on Systems and Control (ICSC 2021)

**Caen, France
24 – 26 November 2021**



**IEEE Catalog Number: CFP2186U-POD
ISBN: 978-1-6654-0783-0**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2186U-POD
ISBN (Print-On-Demand):	978-1-6654-0783-0
ISBN (Online):	978-1-6654-0782-3
ISSN:	2379-0059

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Content List of 2021 9th International Conference on Systems and Control (ICSC)

Technical Program for Wednesday November 24, 2021

WeAA	Amphi X
Robust Control and Hinfy Control (Regular Session)	
10:30-10:50	WeAA.1
<i>Robust Dynamic Tracking Control of a Modal Parameter Varying Spacecraft Avoiding Vibration</i> , pp. 1-6.	
Arefin, Samsul	CentraleSupélec, Université Paris Saclay, CNES, Thales Alenia Sp
Dumur, Didier	CentraleSupélec
HOT, Aurélien	CNES
Bettachioli, Alain	Thales Alenia Space
Tebbani, Sihem	CENTRALESUPELEC Université Paris-Saclay
Pasquet, Jean-Marie	Thales Alenia Space
10:50-11:10	WeAA.2
<i>Reference Model Sliding Mode Control for Industrial Valves Exhibiting Large Hysteresis and Uncertainty in System Parameters</i> , pp. 7-12.	
Amigues, Louis, Duong	ISAE SUPAERO, Université De Toulouse
pommier-budinger, valerie	ISAE-Supaero
Bordeneuve-guibe, Joel	ISAE
11:10-11:30	WeAA.3
<i>A Two-Dimensional Fornasini-Marchesini Second Model-Based Finite Frequency H^∞ Static Output Feedback Control</i> , pp. 13-18.	
Er-rachid, Ismail	LaSTI Laboratory, National School of Applied Sciences (ENSA) Kho
Merzouki, Hassnae	LaSTI Laboratory, National School of Applied Sciences (ENSA) Kho
ZOULAGH, TAHA	University of Sidi Mohammed Ben Abdellah Faculty of Science, Phy
Tadeo, Fernando	Univ. of Valladolid
Chikh, Khalid	Lasti Ensa Khouribga , USMS
11:30-11:50	WeAA.4
<i>Static Output Feedback Control Synthesis for Positive Polynomial Fuzzy Systems with Time Delay</i> , pp. 19-23.	
Messaoudi, Abderrahim	ENIS Sfax
IBEN AMMAR, Imen	National Engineering School of Sfax, Tunisia
Gassara, Hamdi	University of Picardie Jules Verne
El Hajjaji, Ahmed	Univ. De Picardie-Jules Verne
11:50-12:10	WeAA.5
<i>Robust Stability and Stabilization of Singular 2D Continuous Systems with Delays</i> , pp. 24-31.	
dami, laila	Cadi Ayad University
benhayoun, mohamed	University Cadi Ayyad, Faculty of Sciences Semailia Marrakech
Benzaouia, Abdellah	Faculty of Science Semailia
12:10-12:30	WeAA.6
<i>Adaptive Sliding Mode Controller for Attitude Quadrotor Based on Finite-Time Differentiator with Input Saturation</i> , pp. 32-37.	
SIDI BRAHIM, Khelil	University of Biskra
El hajjaji, ahmed	University of Picardie Jules Verne
terki, nadjiba	Biskra University Algeria
WeAB	Room 1
Renewable Energy (Regular Session)	
Co-Chair: Mehdi, Driss	Université De Poitiers
10:30-10:50	WeAB.1
<i>Nash Bargaining Solution for the Formation Control Problem</i> , pp. 38-43.	
Simão Horevicz, Daniel	Unicamp
Ferreira, Paulo A. Valente	University of Campinas
10:50-11:10	WeAB.2
<i>Control of a Multifunctional PV-Integrated SAPF with Simpler Neural Harmonic Extraction</i> , pp. 44-49.	
AZZAM JAI, ASMAE	Engineering for Smart and Sustainable Systems Research Center, Mo

11:10-11:30	WeAB.3
<i>Control Strategy for Inertia Emulation through Grid-Following Inverters</i> , pp. 50-55.	
Ferreira, Yuri	IFSC
Trentini, Rodrigo	Hochschule Hannover
Kutzner, Rüdiger	Hochschule Hannover
11:30-11:50	WeAB.4
<i>Synchronous Inertia Deficit: A Study on Electric Power Systems with High Penetration of RES</i> , pp. 56-61.	
Piccoli, Daniel	IFSC
Trentini, Rodrigo	Hochschule Hannover
Saldanha, John	IFSC
11:50-12:10	WeAB.5
<i>Fault Tolerant Control with Delays Systems: Application to a PMFC System</i> , pp. 62-68.	
BOUGATEF, ZINA	University of Gabes, Enig
WANG, Haoping	Nanjing University of Science and Technology
Aitouche, Abdel	CRISTAL/JUNIA
Abdelkrim, Mohamed Naceur	ENIG

WeAC	Room 2
Optimization and Control of Chemical Processes (Invited Session)	

Chair: OTHMAN, NIDA	University Claude Bernard Lyon 1
Organizer: Latifi, M.A.	Cnrs - Ensic, B.p. 451
Organizer: OTHMAN, NIDA	University Claude Bernard Lyon 1

10:30-10:50	WeAC.1
<i>Constraint Optimization of Grade Transitions in Fluidized Bed Reactors of Polyethylene (I)</i> , pp. 69-74.	
OTHMAN, NIDA	University Claude Bernard Lyon 1
Mckenna, Timothy	University of Lyon

10:50-11:10	WeAC.2
<i>Optimal Design of Energy Systems in Isolated Zones Using Sustainability Indicators. a Case Study in the Colombian Amazon (I)</i> , pp. 75-82.	
Fonseca, Juan D.	Équipe De Recherche Sur Les Processus Innovatifs (ERPI), Univers
Commenge, Jean-Marc	Laboratoire Réactions Et Génie Des Procédés (LRGP), Université D
Camargo, Mauricio	Équipe De Recherche Sur Les Processus Innovatifs (ERPI), Univers
Falk, Laurent	Laboratoire Réactions Et Génie Des Procédés (LRGP), Université D
Gil, Iván D.	Grupo De Procesos Químicos Y Bioquímicos, Department of Chemica

11:10-11:30	WeAC.3
<i>Set-Membership State Estimation for a Continuous Stirred-Tank Reactor (I)</i> , pp. 83-88.	
Valero, Carlos Eduardo	Slovak Technical University in Bratislava
Paulen, Radoslav	Slovak University of Technology in Bratislava

11:30-11:50	WeAC.4
<i>Robust Model-Based Reinforcement Learning Control of a Batch Crystallization Process (I)</i> , pp. 89-94.	
Benyahia, Brahim	Loughborough University

11:50-12:10	WeAC.5
<i>Impact of Control Strategy on Chemical Process Dynamic Flexibility Performance: A Switchability Analysis Application (I)</i> , pp. 95-100.	
Di Pretoro, Alessandro	Institut National Polytechnique De Toulouse
Jouliá, Xavier	Institut National Polytechnique De Toulouse
Montastruc, Ludovic	Institut National Polytechnique De Toulouse

WeBA	Amphi X
Fault Detection and Diagnostics (Regular Session)	

Chair: Jauberthie, Carine	LAAS-CNRS
Co-Chair: Dahhou, Boutaieb	LAAS-CNRS

16:00-16:20	WeBA.1
<i>Fault Detection Using Upper Bound Interval Kalman Filter for Unmanned Aerial Vehicle</i> , pp. 101-106.	
Jauberthie, Carine	LAAS-CNRS
Fergani, Soheib	LAAS-CNRS, Laboratory for Analysis and Architecture of Systems
Saulnier, Saulnier	LAAS-CNRS
16:20-16:40	WeBA.2
<i>Estimating Fuel Characteristics from Simulated Circulating Fluidized Bed Furnace Data</i> , pp. 107-112.	
Neuvonen, Markus Mikael	University of Oulu
Selek, Istvan	University of Oulu, Systems Engineering Laboratory
Ikonen, Enso	University of Oulu
16:40-17:00	WeBA.3
<i>Analytical Calculation of Inductances under Stator Inter-Turn Short Circuits Fault Condition in Operating Squirrel Cage Induction Motors</i> , pp. 113-118.	
TOUIL, ABDERRAHIM	Electrical Laboratory of Constantine "LEC", University of Consta
Babaa, Fatima	LEC Laboratory, Department of Electrical Engineering Constantine
Ouamane, Mohamed Ridha	INSA Centre Val De Loire
Bennis, Ouafae	PRISME Institute, University of Orléans
Kratz, Frederic	INSA Centre Val De Loire
HADJAMI, marouane	Electrical Laboratory of Constantine "LEC", University of Consta
17:00-17:20	WeBA.4
<i>Fault Detection and Localization in Vehicular Embedded Network Using Power Line Communication</i> , pp. 119-126.	
Abdel Karim, Abdel Karim	Lille University
Atoui, M. Amine	University of Lille
Degardin, Virginie	Lille University
Cocquempot, Vincent	Lille University
17:20-17:40	WeBA.5
<i>Application of Machine Learning Algorithms for Power Systems Fault Detection</i> , pp. 127-132.	
Bouchiba, Nouha	University of Moncton
Kaddouri, Azeddine	Université De Moncton
17:40-18:00	WeBA.6
<i>Interval Observer-Based Active Fault Tolerant Control for an Intensified Heat Exchanger/Reactor</i> , pp. 133-138.	
Han, Xue	Insa Toulouse
Rammal, Rim	University of Toulouse III
Li, Zetao	Guizhou University
CABASSUD, Michel	University Paul Sabatier, Toulouse, France; CNRS, Laboratoire De
Dahhou, Boutaieb	LAAS-CNRS
WeBB	Room 1
Fuzzy and Neural Systems (Regular Session)	
Co-Chair: Essounbouli, Najib	University of Reims Champagne Atdenne
16:00-16:20	WeBB.1
<i>Adaptive Interval Type 2 Fuzzy Fractional Order Sliding Mode Control for Permanent Magnet Synchronous Generators</i> , pp. 139-145.	
FERHAT, Nawal	USTHB
AOUNALLAH, Tarek	URCA
Essounbouli, Najib	University of Reims Champagne Atdenne
BOUCHAFAA, Farid	Laboratoire d'Instrumentation, USTHB, F.E.I, BP 32, Elalia, Alger
Hamzaoui, Abdelaziz	IUT of Troyes
16:20-16:40	WeBB.2
<i>Artificial Intelligence Neural Network Approach to Self Tuning of a Discrete-Time PID Control System</i> , pp. 146-151.	
Pal, Amit Kumar	Ruhr-Universität Bochum
Nestorovic, Tamara	Ruhr-Universitaet Bochum
16:40-17:00	WeBB.3
<i>Teaching Automation and Control During the COVID-19 Pandemic, a First Feedback</i> , pp. 152-158.	
FIDEL, Wisly	Junia HEI Lille
ABBES, Dhaker	High Engineering School of Lille (HEI-Lille)
Hassam-Ouari, Kahina	HEI Lille
17:00-17:20	WeBB.4

Finite-Frequency Filter Design in Fuzzy Two-Dimensional Systems, pp. 159-164.

El-AMRANI, Abderrahim
El Hajjaji, Ahmed
BOUKILI, Bensalem

University Sidi Mohamed Ben Abdellah
Univ. De Picardie-Jules Verne
Sidi Mohamed Benabdellah Faculte Des Sciences
Dharelmahrazfes
Faculty of Sciences Dhar Elmehraz Fes
University of Sidi Mohammed Ben Abdellah, Faculty of Sciences
Dha

WeBC Room 2
Modeling and Simulation (Regular Session)

Chair: Aitouche, Abdel

CRISTAL/JUNIA

16:00-16:20

WeBC.1

Vehicle Lateral Dynamics with Sliding Mode Control Strategy for Evasive Maneuvering, pp. 165-172.

da Silva Junior, Amauri
Birkner, Christian
Nakhaie Jazar, Reza
Marzbani, Hormoz

Technische Hochschule Ingolstadt
Technische Hochschule Ingolstadt
Royal Melbourne Institute of Technology
Royal Melbourne Institute of Technology

16:20-16:40

WeBC.2

A CFD Investigation into the Effects of Intake Air Oxygen Enrichment on DI Diesel Engine Combustion and Emissions, pp. 173-177.

Giorgi, Sofia
Vera, Sofia
Mobasheri, Raouf
Aitouche, Abdel

JUNIA
JUNIA
JUNIA
CRISTAL/JUNIA

16:40-17:00

WeBC.3

Comparison of Three Methodologies for the Modelling of Mechanical Systems with Constraints from the Control Systems Point of View, pp. 178-183.

Delgado-Spíndola, Alfredo
Santibanez, Victor
Bugarin, Eusebio
Rojas-Quintero, Juan Antonio

Tecnológico Nacional De México / ITL
Instituto Tecnológico De La Laguna
Instituto Tecnológico De Ensenada
CONACYT/Tecnológico Nacional De México/I.T. Ensenada

17:00-17:20

WeBC.4

Analysis and Simulation of Six Interleaved Boost Converter for Automotive Applications, pp. 184-190.

Alargt, Farag
Ashur, Ahmed
Kharaz, Ahmad

The Centre for Solar Energy Research and Studies
The Department of Electrical and Electronic Engineering Universi
College of Engineering and Technology, Uinersity of Derby

17:20-17:40

WeBC.5

Handling Missing Values in Greenhouse Microclimate Dataset Using PCA-SARIMAX Model, pp. 191-197.

Ouamane, Mohamed Ridha
Saboni, Amine
Bennis, Ouafae
Kratz, Frederic
Megherbi, Hassina
Sánchez Molina, Jorge Antonio

INSA Centre Val De Loire
OCTO Technology
PRISME Institute, University of Orléans
INSA Centre Val De Loire
Mohamed Khider University
Universidad De Almería

17:40-18:00

WeBC.6

Simscape Multibody Modeling of an H-Frame Type XY Positioning System, pp. 198-203.

Beauparlant, Bradley
Jouaneh, Musa K.

Naval Undersea Warfare Center: Division Newport, Newport, RI
University of Rhode Island

WeBD

Room 3

Modeling of Complex Systems (Regular Session)

Chair: BOSCHE, Jerome
Co-Chair: Lynnyk, Volodymyr

University of Picardie Jules Verne of Amiens
Institute of Information Theory and Automation of the CAS

16:00-16:20

WeBD.1

Implementation and Performance Evaluation of an Interactive and Soft Real Time Scheduling Algorithm, pp. 204-209.

Zoican, Sorin
Zoican, Roxana
Galatchi, Dan

Politehnica University of Bucharest
Politehnica University of Bucharest
Politehnica University of Bucharest

Stanciu, Silvia-Ioana	Politehnica University of Bucharest
16:20-16:40	WeBD.2
<i>Synchronization of a Linear Multi-Agent System with Sampled Control and a Jointly Connected Topology</i> , pp. 210-215.	
Rehak, Branislav	Ustav Teorie Informace a Automatizace AV CR, V.v.i
Lynnyk, Volodymyr	Institute of Information Theory and Automation of the CAS
16:40-17:00	WeBD.3
<i>Generalized Synchronization and Their Detection in the Complex Network with a Tree Topology</i> , pp. 216-222.	
Lynnyk, Volodymyr	Institute of Information Theory and Automation of the CAS
Rehak, Branislav	Ustav Teorie Informace a Automatizace AV CR, V.v.i
Celikovsky, Sergej	Academy of Sciences
17:00-17:20	WeBD.4
<i>Asymptotic Analysis of a Control-Oriented Open Channel Flow Model</i> , pp. 223-228.	
Vasara, Joni	University of Oulu
Selek, Istvan	University of Oulu, Systems Engineering Laboratory
Ikonen, Enso	University of Oulu
17:20-17:40	WeBD.5
<i>Robust Adaptive Feedback VBW Model for HM-Based SM Controller for DC-DC Multicellular Converters</i> , pp. 229-236.	
Hamdi, Rihab	LMSE Laboratory
Hadri-Hamida, Amel	LMSE Laboratory, Department of Electrical Engineering, Universit
Bennis, Ouafae	PRISME Institute, University of Orléans
17:40-18:00	WeBD.6
<i>A Motion Recognition Technique Based on Linear Matrix Representation to Improve Parkinson's Disease Treatments</i> , pp. 237-242.	
Moreau, Pierre	Université De Picardie Jules-Verne
Durand, David	MIS, Université De Picardie Jules Verne
BOSCHE, Jerome	University of Picardie Jules Verne of Amiens
Lefranc, Michel	CHU Amiens-UPJV

Technical Program for Thursday November 25, 2021

ThAA		Amphi X
Nonlinear Observers (Invited Session)		
Chair: Hammouri, Hassan		Univ. Claude Bernard
Co-Chair: Busvelle, Eric		Université De Toulon
Organizer: Hammouri, Hassan		Univ. Claude Bernard
10:30-10:50		ThAA.1
<i>Observer Design for a Class of Non Uniformly Observable Systems Using Mixed Time-Continuous and Sampled Delayed Measurements of the Outputs (I)</i> , pp. 243-248.		
Ramírez-Rasgado, Felipe		Tecnológico Nacional De México - Cenidet
Hernandez Gonzalez, Omar		Université De Caen Basse Normandie
Farza, Mondher		Université De Caen, Ensicaen, Cnrs
Astorga-Zaragoza, Carlos		Tecnológico Nacional De México - Cenidet
GUERRERO, MARIA EUSEBIA		CENIDET
10:50-11:10		ThAA.2
<i>Illustration of the Application of the Multi-Observers Approach (I)</i> , pp. 249-251.		
Haidar, Ihab		ENSEA
Barbot, Jean Pierre		CNRS
Rapaport, Alain		INRA
11:10-11:30		ThAA.3
<i>Prescribed-Time High-Gain Nonlinear Observer Design for Triangular Systems (I)</i> , pp. 252-257.		
Adil, Ania		Mouloud Mammeri University of Tizi Ouzou
N'Doye, Ibrahima		King Abdullah University of Science and Technology
Abdelghani, Hamaz		University Mouloud Maameri Tizi-Ouzou
Zemouche, Ali		University of Lorraine
Laleg, Taous-Meriem		KAUST
11:30-11:50		ThAA.4
<i>Mode-Changeable DC/DC Converter Control with Fault-Tolerance for Application to an Energetic Hybrid System (I)</i> , pp. 258-263.		
AIT LADEL, Ayyoub		Lis (umr 7020)
OUTBIB, Rachid		Lis
Benzaouia, Abdellah		Faculty of Science Semailia
Ouladsine, Mustapha		Université D'aix Marseille III
11:50-12:10		ThAA.5
<i>Observability of Systems When Measurements Are Not Time-Stamped (I)</i> , pp. 264-267.		
Busvelle, Eric		Université De Toulon
ThAB		Room 1
Estimations and Identification (Regular Session)		
Chair: Pouliquen, Mathieu		University of Caen
10:30-10:50		ThAB.1
<i>Sensor Network Adjusting Based on Anisotropic Criterion</i> , pp. 268-273.		
Yurchenkov, Alexander		V.A. Trapeznikov Institute of Control Sciences of Russian Academ
Kustov, Arkadiy		Institute of Control Sciences
10:50-11:10		ThAB.2
<i>Projectile Trajectory Estimation: Performance Analysis of an Extended Kalman Filter and an Imperfect Invariant Extended Kalman Filter</i> , pp. 274-281.		
ROUX, Alicia		ISL
Changey, Sebastien		ISL - French-German Research Inst. of Saint-Louis
WEBER, Jonathan		Université De Haute-Alsace
Lauffenburger, Jean-Philippe		University of Haute-Alsace
11:10-11:30		ThAB.3
<i>Adaptation of Recursive Least Squares Identification for Binary Output Systems</i> , pp. 282-287.		
Mestrah, Ali		Université De Caen
Pouliquen, Mathieu		University of Caen
Pigeon, Eric		LAC
11:30-11:50		ThAB.4

Identification of Closed-Loop Systems Using Binary Measurement on the Output, pp. 288-293.

Oualla, Hicham	Université De Caen Normandie
Pouliquen, Mathieu	University of Caen
FRIKEL, Miloud	Normandie Univ, UNICAEN, ENSICAEN
SAFI, SAID	Sultan Moulay Slimane University

11:50-12:10 ThAB.5

Observer Design for a Nonlinear Cardiovascular System, pp. 294-299.

Serrano-Cruz, Dulce-Alejandra	Tecnológico Nacional De México/Centro Nacional De Investigación
Boutat-Baddas, Latifa	Centre De Recherche d'Automatique De Nancy (CRAN)
Darouach, Mohamed	CRAN CNRS UMR 7039, Université De Lorraine
Astorga-Zaragoza, Carlos	Tecnológico Nacional De México - Cenidet

ThAC Room 2

Fractional Order Systems and Control (Invited Session)

Chair: Boutat, Driss	INSA Centre Val De Loire
Co-Chair: LIU, Da-Yan	INSA Centre Val De Loire, Campus De Bourges
Organizer: Boutat, Driss	INSA Centre Val De Loire
Organizer: LIU, Da-Yan	INSA Centre Val De Loire, Campus De Bourges

10:30-10:50 ThAC.1

Model Based Algebraic Fractional Order Differentiator Using Laplace Transform (I), pp. 300-305.

WANG, Jiachang	University of Science and Technology of China
LIU, Da-Yan	INSA Centre Val De Loire, Campus De Bourges
Boutat, Driss	INSA Centre Val De Loire
Wang, Yong	University of Science and Technology of China
Zhang, Xuefeng	Northeastern University

10:50-11:10 ThAC.2

Boundary Stabilization for Time-Space Fractional Diffusion-Wave Equation (I), pp. 306-311.

Huang, Jianping	Central South University
Zhou, Hua-Cheng	Academy of Mathematics and Systems Science, Academia Sinica

11:10-11:30 ThAC.3

A Fractional Order Model for Rumor Spreading in Mobile Social Networks from a Stochastic Process (I), pp. 312-318.

Ren, Guojian	Beijing Jiaotong University
Yu, Yongguang	Beijing Jiaotong University
芦珍珍, 珍珍	Beijing Jiaotong University
Chen, Wei	Beijing Jiaotong University

11:30-11:50 ThAC.4

Adaptive Observer for Space-Fractional Partial Differential Model of Gas Pressures in Fractured Media (I), pp. 319-324.

Ghaffour, Lilia	King Abdullah University of Science and Technology
Laleg, Taous-Meriem	KAUST

11:50-12:10 ThAC.5

Fractional-Order Parameter Update Law for Adaptive Control of Integer-Order Systems (I), pp. 325-331.

Weise, Christoph	TU Ilmenau
Reger, Johann	TU Ilmenau

ThAD Room 3

Optimization (Regular Session)

10:30-10:50 ThAD.1

Comparative Study between High Gain Observer and Extended Kalman Filter for Supercapacitor State of Health Estimation, pp. 332-337.

HAMMOU, Abdelilah	LUSAC Laboratory
Gualous, Hamid	Laboratoire LUSAC - Université De Caen Basse Normandie

10:50-11:10 ThAD.2

Optimal Chi-Squared Detector of Replay Attacks on Cyber-Physical Systems, pp. 338-343.

Patel, Aaqib	IIT Hyderabad
Khan, Mohammed Zafar Ali	IIT Hyderabad

11:10-11:30 ThAD.3

A Mixed-Integer Nonlinear Problem Algorithm to Control Finite State Machines Using Branch and Bound, pp. 344-349.

Wim, Van Roy	KU Leuven, Atlas Copco Airpower NV
De Mauri, Massimo	KU Leuven
Swevers, Jan	KU Leuven
Gillis, Joris	KU Leuven
11:30-11:50	ThAD.4
<i>Evaluation of Invariant Cost Functions for the Optimal Control of Robotic Manipulators</i> , pp. 350-355.	
Morales-Lopez, Sergio	Tecnológico Nacional De México/I.T. Ensenada
Rojas-Quintero, Juan Antonio	CONACYT/Tecnológico Nacional De México/I.T. Ensenada
Ramírez-de-Ávila, Hedy César	Tecnológico Nacional De México (TecNM)
Bugarin, Eusebio	Instituto Tecnológico De Ensenada
11:50-12:10	ThAD.5
<i>A Fuzzy Logic-Based Energy Management Approach for Hybrid System of 5G Telecom Station</i> , pp. 356-360.	
OBEID, Hussein	University of Caen Normandy/ LUSAC Laboratory
Hamzaoui, Othmane	Laboratoire LUSAC
Petrone, Raffaele	University of Caen
le masson, stephane	Orange
Gualous, Hamid	Laboratoire LUSAC - Université De Caen Basse Normandie
12:10-12:30	ThAD.6
<i>A Novel LQR-Based Cascaded Control Scheme of a Powered Knee Joint Orthosis for Rehabilitation</i> , pp. 361-366.	
Jammeli, Ines	University of Carthage
Chemori, Ahmed	LIRMM, Montpellier
Elloumi, Salwa	Polytechnic School of Tunisia
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
ThBA	Amphi X
Estimation and Control-Based Interval Methods & Observer Design I (Invited Session)	
Chair: Dinh, Thach Ngoc	Conservatoire National Des Arts Et Métiers
Co-Chair: Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Organizer: Dinh, Thach Ngoc	Conservatoire National Des Arts Et Métiers
Organizer: Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Organizer: Raïssi, Tarek	Conservatoire National Des Arts Et Métiers
16:00-16:20	ThBA.1
<i>Development of an On-Board Energy Optimization Strategy for the Air Mobility of the Future (I)</i> , pp. 367-372.	
BOUNOUA, Ghita	LURPA, ENS, University Paris Saclay
NEUHAUS, Kolja	Aeronautics, Space & Defense Departement, TECCapgemini Engineeri
BOUKAL, YASSINE	Altran by Capgemini
MARZOUGUI, Taher	Aeronautics, Space & Defense Departement, TECCapgemini Engineeri
THEVENIN, Vincent	Aeronautics, Space & Defense Departement, TEC Capgemini Engineer
SCALABRIN, Gianmarco	Aeronautics, Space & Defense Departement, TEC Capgemini Engineer
LABRACHERIE, Laurent	Aeronautics, Space & Defense Departement, TEC Capgemini Engineer
16:20-16:40	ThBA.2
<i>Robust Sensor Fault Estimation for LPV Systems: Application to Quadrotor UAV (I)</i> , pp. 373-379.	
Abouselima, Eslam	University of Évry Val D'Essonne
Ichalal, Dalil	IBISC Lab, Univ Evry, Paris-Saclay University
Mammar, Said	University of Evry, IBISC Lab
16:40-17:00	ThBA.3
<i>Robust SM Observer for COVID Data Prediction and Parameters Estimation (I)</i> , pp. 380-386.	
M'Sirdi, Kouider Nacer	Lis -Cnrs Umr 7020
BENZAOUIA, Soufyane	LGEM - Université Mohamed Premier - Oujda / MIS - Université De
naamane, aziz	Université Aix-Marseille (U3)

ThBB	Room 1
Linear and Nonlinear Systems I (Regular Session)	
Chair: Mehdi, Driss	Université De Poitiers

16:00-16:20	ThBB.1
<i>On the Design of Functional Observers for Multi-Delayed Linear Systems</i> , pp. 387-392.	
Naami, Ghali	National School of Applied Sciences, Sidi Mohamed Ben Abdellah U
Ouahi, Mohamed	Lisa Ensa
Tissir, El Houssaine	University Sidi Mohammed Ben Abdellah
RABHI, ABDELHAMID	MIS
16:20-16:40	ThBB.2
<i>Control Design for One Class of Linear Strictly Metzler Time-Delay Systems</i> , pp. 393-398.	
Krokavec, Dusan	Technical University of Kosice
Filasova, Anna	Technical University of Kosice
16:40-17:00	ThBB.3
<i>LTI Descriptor Systems Admissibility under Structure Constraints: A Nonsmooth Newton Approach</i> , pp. 399-404.	
YAGOUBI, Mohamed	IMT Atlantique (LS2N)/ARMINES
Chaibi, Redouane	Faculty of Sciences
ThBC	Room 2
Power Systems (Regular Session)	
16:00-16:20	ThBC.1
<i>Intelligent Disturbance Compensator for Quadrotor Flight</i> , pp. 405-410.	
Furukawa, Daiki	Nihon University
Uchiyama, Kenji	Nihon University
Masuda, Kai	Nihon University
16:20-16:40	ThBC.2
<i>Enhanced Sensorless Predictive Direct Power Control for PWM Rectifier with Constant Switching Frequency under Grid Disturbances</i> , pp. 411-416.	
Djabali, Sarah	Signals and Systems Laboratory LSS, Institute of Electrical And
Ammar, Abdelkarim	LGEB Laboratory, Electrical Engineering Department, University O
KHELDOUN, Aissa	Signals and Systems Laboratory LSS, Institute of Electrical And
16:40-17:00	ThBC.3
<i>Signed-Distance Fuzzy-Logic Sliding-Mode Control Strategy for Floating Interleaved Boost Converter</i> , pp. 417-422.	
BENZAOUIA, Soufyane	LGEM - Université Mohamed Premier - Oujda / MIS - Université De
M'Sirdi, Kouider Nacer	Lis - Cnrs Umr 7020
RABHI, ABDELHAMID	MIS
ZOUGGAR, Smail	University Mohammed First Oujda, Maroc

Technical Program for Friday November 26, 2021

FrAA	Amphi X
Fractional Order Differentiation in Modeling, System Identification and Control (Invited Session)	
Chair: MELCHIOR, Pierre	Bordeaux INP/ENSEIRB-MATMECA - Université De Bordeaux
Co-Chair: VICTOR, Stéphane	Université De Bordeaux
Organizer: MELCHIOR, Pierre	Bordeaux INP/ENSEIRB-MATMECA - Université De Bordeaux
Organizer: VICTOR, Stéphane	Université De Bordeaux
10:30-10:50	FrAA.1
<i>Pharmaco-Impedance Modelling for Lung Cancer Therapy with Predictive Control (I)</i> , pp. 423-428.	
Ghita, Maria	Ghent University
Copot, Dana	Ghent University
De Keyser, Robin M.C.	Ghent University
Ionescu, Clara	Ghent University
10:50-11:10	FrAA.2
<i>Integration of Fractional Differential Equations without Fractional Derivatives (I)</i> , pp. 429-435.	
maamri, Nezha	Ecole Nationale Supérieure d'Ingénieurs De Poitiers
Trigeassou, Jean-claude	University of Poitiers
11:10-11:30	FrAA.3
<i>Wind Fractional Modeling by Spectral Analysis (I)</i> , pp. 436-441.	
HAJJEM, Mohamed	Université De Bordeaux, IMS, Safran
VICTOR, Stéphane	Université De Bordeaux
MELCHIOR, Pierre	Bordeaux INP/ENSEIRB-MATMECA - Université De Bordeaux
Lanusse, Patrick	University of Bordeaux / IPB / ENSEIRB-MATMECA
Thomas, Lara	Safran
11:30-11:50	FrAA.4
<i>Modelling of a Non-Integer Derivative System Using a Modal Approach: Application to the Flute Resonator (I)</i> , pp. 442-448.	
ABI ZEID DAOU, Roy	Lebanese German University
Abou Haidar, Gaby	American University of Science and Technology
Moreau Xavier, -	Université Bordeaux 1
11:50-12:10	FrAA.5
<i>Control of Prosthetic Hand Based on Input Shaping Combined to Fractional PI Controller (I)</i> , pp. 449-454.	
Jallouli-Khlif, Rim	Control and Energy Management Laboratory (CEM-Lab LR11ES47), Hig
Maalej, Boutheina	University of Sfax
MELCHIOR, Pierre	Bordeaux INP/ENSEIRB-MATMECA - Université De Bordeaux
Derbel, Nabil	Professor
12:10-12:30	FrAA.6
<i>Fast Solution Methods for Fractional Differential Equations in the Modeling of Viscoelastic Materials (I)</i> , pp. 455-460.	
Diethelm, Kai	University of Applied Sciences Würzburg-Schweinfurt
FrAB	Room 1
Observation and Control of Nonlinear Systems with Applications (Invited Session)	
Organizer: Farza, Mondher	Universite De Caen, Ensicaen, Cnrs
Organizer: M'SAAD, Mohammed	ENSICAEN
10:30-10:50	FrAB.1
<i>Hybrid Adaptive Observer Design for the Alternating Activated Sludge Process (I)</i> , pp. 461-466.	
Boudagga, Afef	National Engineering School of Monastir
Dimassi, Habib	Namur Center for Complex Systems (NAXYS)
Hadj Said, Salim	School of Engineering of Monastir (ENIM)
Farza, Mondher	Universite De Caen, Ensicaen, Cnrs
10:50-11:10	FrAB.2
<i>Sliding Mode Control for Two Wheeled Inverted Pendulum under Terrain Inclination and Disturbances (I)</i> , pp. 467-472.	
Jmel, Inès	National Engineering School of Monastir
Dimassi, Habib	Namur Center for Complex Systems (NAXYS)
Hadj Said, Salim	School of Engineering of Monastir (ENIM)
msahli, faouzi	Monastir University

11:10-11:30	FrAB.3
<i>Actuator and Sensor Faults Reconstruction for Quadcopter Based on Cascade Sliding Mode Observers (I)</i> , pp. 473-478.	
Miladi, Nadia	National Engineering School of Monastir
Dimassi, Habib	Namur Center for Complex Systems (NAXYS)
Hadj Said, Salim	School of Engineering of Monastir (ENIM)
msahli, faouzi	Monastir University
11:30-11:50	FrAB.4
<i>Simultaneous Actuator and Sensor Faults Reconstruction for a Class of Linear Systems. Application to a Steer-By-Wire Vehicle System (I)</i> , pp. 479-484.	
Dimassi, Habib	Namur Center for Complex Systems (NAXYS)
Hadj Said, Salim	School of Engineering of Monastir (ENIM)
msahli, faouzi	Monastir University
11:50-12:10	FrAB.5
<i>An Uncoupled State Multiobserver Based Fault Tolerant Multicontrollers for Nonlinear Systems (I)</i> , pp. 485-492.	
MEJDI, Sondess	National Engineering School of Gabes
Messaoud, Anis	National School of Engineering of Gabes, Tunisia
Ben Abdennour, Ridha	National School of Engineering of Gabes
12:10-12:30	FrAB.6
<i>Observer Design for a Class of Disturbed Nonlinear Systems with Multirate Sampled Outputs Involving Multiple Long Time-Varying Delays (I)</i> , pp. 493-498.	
Ramírez-Rasgado, Felipe	Tecnológico Nacional De México - Cenidet
Farza, Mondher	Universite De Caen, Ensicaen, Cnrs
M'SAAD, Mohammed	ENSICAEN
Hernandez Gonzalez, Omar	Université De Caen Basse Normandie
Astorga-Zaragoza, Carlos	Tecnológico Nacional De México - Cenidet
FrAC	Room 2
Control Applications (Regular Session)	
10:30-10:50	FrAC.1
<i>Lyapunov Redesign of Piezo-Actuator for Positioning Control</i> , pp. 499-503.	
Edardar, Mohamed	University of Tripoli
Abougarair, Ahmed	University of Tripoli
10:50-11:10	FrAC.2
<i>Stability Analysis and Control for Non-Isothermal CSTR Reactors</i> , pp. 504-509.	
COLBU, Stefania Cristiana	University POLITEHNICA of Bucharest
Faiçal, HAMIDI	University of Gabes, Laboratory "Modélisation, Analyse Et Comma
Popescu, Dumitru	Politehnica University of Bucharest
JERBI, Houssem	University of Hail
BANCILA, Daniel - Marian	University POLITEHNICA of Bucharest
11:10-11:30	FrAC.3
<i>The Different Theoretical Methods of the MFC Approach for a MIMO System</i> , pp. 510-515.	
MEGUETTA, Zine Eddine	Lille University
Durlin, Anthyme	Ecole D'ingénieur Elisa Aerospace
Mohamed Ilyas, Rahal	University of Tlemcen -Algeria
CHAABNA, Ameer	Université 8 Mai 1945 Guelma Algeria
BAYART, Mireille	University of Lille1
11:30-11:50	FrAC.4
<i>Robust Model Predictive Control for Induction Motor Drive Using Disturbance Observer with MRAS Speed Estimator</i> , pp. 516-521.	
Ammar, Abdelkarim	LGEB Laboratory, Electrical Engineering Department, University O
KHELDOUN, Aissa	Signals and Systems Laboratory LSS, Institute of Electrical And
METIDJI, Brahim	Signals and Systems Laboratory LSS, Institute of Electrical And
Benakcha, Meryem	Electrical Engineering Laboratory, LGE, M'sila University, M'sil
Bourek, Amor	LGEB, Electrical Engineering Department, University of Biskra
Benakcha, Abdelhamid	LGEB, Electrical Engineering Department, University of Biskra
11:50-12:10	FrAC.5
<i>Successive Generalized Dynamic Inversion Control of Lateral Fighter Aircraft Dynamics</i> , pp. 522-528.	
Mibar, Hassen	College Jeddah of Technology
Bajodah, Abdulrahman H.	King Abdulaziz University

12:10-12:30 FrAC.6

Implementation of the Adaptive Neural Networks Backstepping Controller for a Stand-Alone DF IG Based WECS, pp. 529-535.

Labdai, Sami	National Polytechnic School of Algeria
CHRIFI-ALAOUI, Larbi	Université De Picardie Jules Verne
nezli, lazhar, nezli	ENP Alger
Hemici, Boualem	Ecole Nationale Polytechnique d'Alger (ENP)
Bussy, Pascal	Université De Picardie Jules Verne

FrBA Amphi X

Estimation and Control-Based Interval Methods & Observer Design II (Invited Session)

Chair: Dinh, Thach Ngoc	Conservatoire National Des Arts Et Métiers
Co-Chair: Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Organizer: Dinh, Thach Ngoc	Conservatoire National Des Arts Et Métiers
Organizer: Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Organizer: Raïssi, Tarek	Conservatoire National Des Arts Et Métiers

16:00-16:20 FrBA.1

Comparison of Stochastic and Interval-Based Modeling Approaches for the Online Optimization of the Fuel Efficiency of SOFC Systems (I), pp. 536-541.

Rauh, Andreas	Carl Von Ossietzky Universität Oldenburg
Auer, Ekaterina	Faculty of Engineering, University of Applied Sciences Wismar

16:20-16:40 FrBA.2

Interval Observers Design for Actuator Fault Detection of Discrete-Time Linear Switched Systems (I), pp. 542-547.

Marouani, Ghassen	Research Laboratory of Automatic Signal and Image Processing, Na
Dinh, Thach Ngoc	Conservatoire National Des Arts Et Métiers
Raïssi, Tarek	Conservatoire National Des Arts Et Métiers
kamal, Shyam	Indian Institute of Technology (BHU), Varanasi
Messaoud, Hassani	Ecole Nationale d'Ingénieurs De Monastir

16:40-17:00 FrBA.3

Design of Positive Observers for Positive Linear Time-Delay Systems (I), pp. 548-553.

EZZINE, Montassar	Ecole Nationale Des Sciences De L'Informatique
Darouach, Mohamed	CRAN CNRS UMR 7039, Université De Lorraine
Souley Ali, Harouna	Cran Umr 7039 Cnrs
Messaoud, Hassani	Ecole Nationale d'Ingénieurs De Monastir

FrBB Room 1

Control Algorithms Implementation (Regular Session)

Co-Chair: Rehman, Hamood Ur	University of Nottingham & TQC Ltd
-----------------------------	------------------------------------

16:00-16:20 FrBB.1

Load Frequency Control of Autonomous Microgrid System Using Hybrid Fuzzy Logic GWO-CS PI Controller, pp. 554-559.

BOUADDI, Abdessamade	Ecole Mohammadia d'Ingénieurs (EMI), Mohammed V University in Ra
Rabeh, Reda	Ecole Mohammadia d'Ingénieurs (EMI), Mohammed V Agdal University
Ferfra, Mohammed	University Mohammed V

16:20-16:40 FrBB.2

Application of Multi Agent Systems for Leak Testing, pp. 560-565.

Rehman, Hamood Ur	University of Nottingham & TQC Ltd
Chaplin, Jack C.	University of Nottingham
Zarzycki, Leszek	TQC Ltd
Jones, Mark	TQC Ltd
Ratchev, Svetan	University of Nottingham

16:40-17:00 FrBB.3

Control of Mobile Robots in the Transition from State to State Subject to a Forward Movement Scheme, pp. 566-571.

Ailon, Amit	Ben Gurion University of the Negev
-------------	------------------------------------

FrBC Room 2

Linear and Nonlinear Systems II (Regular Session)

Chair: Mehdi, Driss	Université De Poitiers
16:00-16:20	FrBC.1
<i>Efficient Tuning of PID Controllers Using Swarm-Based Optimization Algorithms</i> , pp. 572-579.	
Xu, Jiacong	Texas A&M University
Bhattacharyya, Shankar P.	Texas a & M Univ
16:20-16:40	FrBC.2
<i>Study of Asymptotic Stability for 2D Fornasini-Marchesini Linear Models</i> , pp. 580-585.	
RIGAUD, Alexandre	University of Poitiers
Bachelier, Olivier	University of Poitiers
Yeganefar, Nima	University of Poitiers
16:40-17:00	FrBC.3
<i>Event-Triggered Control for Singular Systems</i> , pp. 586-591.	
GHAMGUI, Mariem	Université De Sfax
Mehdi, Driss	Université De Poitiers
Bachelier, Olivier	University of Poitiers
Han, Qing-Long	Swinburne University of Technology