

ACD 2019

**15TH EUROPEAN
WORKSHOP
ON ADVANCED CONTROL
AND DIAGNOSIS**

Bologna, Italy, 21-22 November 2019

Final Program

ThP		Salone d'Onore
Thursday Plenary Lecture (Plenary Session)		
Chair: Paolo Mercorelli	Leuphana University, Germany	
8:40-9:40	ThP	
<i>Sliding Modes for Estimation: Theory and practice</i>		
Sarah Spurgeon	University College London, UK	
ThA1		Salone d'Onore
Design Techniques for Fault Detection and Diagnosis (Regular Session)		
Chair: Didier Theilliol	Université de Lorraine, France	
Co-chair: Pavel Ettlér	COMPUREG Plzen and University of West Bohemia, Czech Republic	
10:00 - 10:20	ThA1.1	
<i>Robust Fault Detection with a Distributed and Decentralized State-Set Observer</i>		
Sönke Meynen	Karlsruhe University of Applied Sciences, Germany	
Sören Hohmann	Karlsruhe Institute of Technology, Germany	
Dirk Feßler	Karlsruhe University of Applied Sciences, Germany	
10:20 - 10:40	ThA1.2	
<i>Interactive Multiple Model-based Fault Diagnosis Approach for Double Integrator Multi-Agent Networks</i>		
Cesar Martinez-Villegas	Université de Lorraine, France	
Didier Theilliol	Université de Lorraine, France	
Lizeth Torres	Universidad Nacional Autónoma de México, Mexico	
10:40 - 11:00	ThA1.3	
<i>Detection of Rare Signal Faults Based on Bounded Parameter Estimation</i>		
Pavel Ettlér	COMPUREG Plzen and University of West Bohemia, Czech Republic	
11:00 - 11:20	ThA1.4	
<i>Quadratic boundedness-based robust time-varying sensor and actuator fault estimation</i>		
Marcin Pazera	University of Zielona Góra, Poland	
Marcin Witczak	University of Zielona Góra, Poland	
Norbert Kukurowski	University of Zielona Góra, Poland	
Christophe Aubrun	Université de Lorraine, France	
11:20 - 11:40	ThA1.5	
<i>Validation of Artificial Intelligence Fault Diagnosis Design Techniques for a Wind Turbine System</i>		
Silvio Simani	University of Ferrara, Italy	
Saverio Farsoni	University of Ferrara, Italy	
Paolo Castaldi	University of Bologna, Italy	
11:40 - 12:00	ThA1.6	
<i>AutoDiagnosis: Automatic data-driven configuration of an automotive fault diagnosis algorithm using noisy two-stage optimization</i>		
David Stenger	RWTH Aachen University, Germany	
Dirk Abel	RWTH Aachen University, Germany	
12:00 - 12:20	ThA1.7	
<i>Fault diagnosis by estimating the in-cylinder pressure progression of a gasoline engine</i>		
Florian Hartl	BMW Group, Germany	
Christoph Ament	University of Augsburg, Germany	

12:20 - 12:40	ThA1.8
<i>Magnetic Fault Detection and Diagnosis Based on Flux Disturbance Analysis of Modified PMSM Model</i>	
Vasilios Ilioudis	International Hellenic University (IHU), Greece
ThA2	Sala del Cardinale
Design Techniques for Fault Detection and Diagnosis (Regular Session)	
Chair: Giuseppe Conte	Università Politecnica delle Marche, Italy
Co-chair: Cristiano Maria Verrelli	University of Rome "Tor Vergata", Italy
10:00 - 10:20	ThA2.1
<i>Analysis of Persistently Excited Nonlinear Systems with Applications</i>	
Cristiano Maria Verrelli	University of Rome "Tor Vergata", Italy
Patrizio Tomei	University of Rome "Tor Vergata", Italy
Salvatore Pirozzi	Second University of Naples, Italy
Stefano Fabiani	University of Rome "Tor Vergata", Italy
10:20 - 10:40	ThA2.2
<i>Application of the Projected Dynamics to Hybrid Systems and to the Sliding Mode Control Processes</i>	
Vadim Azhmyakov	Universidad EAFIT, Colombia
Moisés Bonilla Estrada	CINVESTAV-IPN, Mexico
Sebastien Lahaye	University of Angers, France
Nicolas Delanoue	University of Angers, France
Luz Adriana Trujillo	University of Angers, France
10:40 - 11:00	ThA2.3
<i>Measurable Disturbance Decoupling for Impulsive Switching Linear Systems</i>	
Elena Zattoni	Alma Mater Studiorum Università di Bologna, Italy
Alice Passarella	Alma Mater Studiorum Università di Bologna, Italy
Anna Maria Perdon	Università Politecnica delle Marche, Italy
Giuseppe Conte	Università Politecnica delle Marche, Italy
11:00 - 11:20	ThA2.4
<i>Detection of energy balance anomalies in the bilinear dynamic systems</i>	
Igor Yadykin	V.A.Trapeznikov Institute of Control Sciences RAS, Russia
11:20 - 11:40	ThA2.5
<i>Input and output symmetric dynamical systems: features and control design</i>	
Jana Königsmarková	University of West Bohemia, Czech Republic
Miloš Schlegel	University of West Bohemia, Czech Republic
11:40 - 12:00	ThA2.6
<i>Computer-aided Verification for Iterative Matrix Inversion Problems in Systems and Control</i>	
Vassilios Tsachouridis	United Technologies Research Center, Ireland
Georgios Giantamidis	United Technologies Research Center, Ireland and Aalto University, Finland
Stylianos Basagiannis	United Technologies Research Center, Ireland
Konstantinos Kouramas	United Technologies Research Center, Ireland
12:00 - 12:20	ThA2.7
<i>A NARMA-L2 Controller Based on Online LSSVR for Nonlinear Systems</i>	
Gökçen Devlet Şen	Istanbul Technical University, Turkey
Gülşay Öke Günel	Istanbul Technical University, Turkey
12:20 - 12:40	ThA2.8

Stable Fuzzy Controllers via LMI Approach for Nonlinear Systems

Described by Type-2 T-S Fuzzy Model

Himanshukumar Patel

Vipul Shah

Dharmsinh Desai University, India

Dharmsinh Desai University, India

ThB1

Salone d'Onore

Advanced Methodologies for Fault Tolerant Control (Regular Session)

Chair: Dominique Sauter

Lorraine University, France

Co-chair: Abdelouhab Aitouche

University of Lille, France

13:20 - 13:40

ThB1.1

Fault tolerant control of a variable pitch quadrotor

Riccardo Felicetti

Università Politecnica delle Marche, Italy

Alessandro Baldini

Università Politecnica delle Marche, Italy

Alessandro Freddi

Università Politecnica delle Marche, Italy

Sauro Longhi

Università Politecnica delle Marche, Italy

Andrea Monteriù

Università Politecnica delle Marche, Italy

13:40 - 14:00

ThB1.2

A Super-Twisting Fault-Tolerant Control Based on Dual-Quaternion

Formalism for Spacecraft Rendezvous

Jazmin Zenteno Torres

University of Bordeaux, France

Jérôme Cieslak

University of Bordeaux, France

David Henry

University of Bordeaux, France

Jorge Davila

Instituto Politécnico Nacional IPN, Mexico

14:00 - 14:20

ThB1.3

Integral Synergetic FTC for HVAC system

Radhia Ettouil

University of Gabes, Tunisia

Karim Chabir

University of Gabes, Tunisia

Dominique Sauter

Lorraine University, France

Mohamed Naceur Abdelkrim

University of Gabes, Tunisia

14:20 - 14:40

ThB1.4

Study on Fault Tolerant Control of an Intensified Heat-Exchanger/Reactor using Two-layer Multiple Model Structure

Menglin He

Guizhou University, China and LAAS-CNRS, Université de Toulouse, France

Zetao Li

Guizhou University, China

Xue Han

Guizhou University, China and LAAS-CNRS, Université de Toulouse, France

Boutaib Dahhou

LAAS-CNRS, Université de Toulouse, France

Michel Cabassud

LGC, Université de Toulouse, France

14:40 - 15:00

ThB1.5

Fault Tolerant Control of Two-Time Scale Delayed Systems with Respect to Additive Faults

Zina Bougatef

University of Gabes, Tunisia

Abdelouhab Aitouche

University of Lille, France

Mohamed Naceur Abdelkrim

University of Gabes, Tunisia

15:00 - 15:20

ThB1.6

Fault Tolerant Saturated Control for T-S Fuzzy Discrete-time Systems with Delays and Uncertainties

Ayyoub Ait Ladel

Cadi Ayyad University, Morocco and

LIS Laboratory, Aix-Marseille University, France

Abdellah Benzaouia

Cadi Ayyad University, Morocco

Mustapha Ouladsine

LIS Laboratory, Aix-Marseille University, France

Rachid Outbib

LIS Laboratory, Aix-Marseille University, France

15:20 - 15:40	ThB1.7
<i>Design and Validation of a Fault Tolerant Fuzzy Control Design for a Wind Park System</i>	
Silvio Simani	University of Ferrara, Italy
Cihan Turhan	Izmir Institute of Technology, Turkey
15:40 - 16:00	ThB1.8
<i>Fault-tolerant multi-sensor fusion and thresholding based on the Bhattacharyya distance with application to a multi-robot system</i>	
Boussad Abci	University of Lille, France
Joudy Nader	University of Lille, France
Maan El Badaoui El Najjar	University of Lille, France
Vincent Cocquempot	University of Lille, France
ThB2	Sala del Cardinale
Optimization Methods for Control of Complex Dynamical Systems (Regular Session)	
Chair: João Belfo	INESC-ID, Universidade de Lisboa, Portugal
Co-chair: Diego Deplano	University of Cagliari, Italy
13:20 - 13:40	ThB2.1
<i>Discrete-Time Dynamic Consensus on the Max Value</i>	
Diego Deplano	University of Cagliari, Italy
Mauro Franceschelli	University of Cagliari, Italy
Alessandro Giua	University of Cagliari, Italy
13:40 - 14:00	ThB2.2
<i>Convergence of a Distributed Optimal Control Coordination Method via the Small-Gain theorem</i>	
João Belfo	INESC-ID, Universidade de Lisboa, Portugal
António Aguiar	SYSTEC, Universidade do Porto, Portugal
Joao M Lemos	INESC-ID, Universidade de Lisboa, Portugal
14:00 - 14:20	ThB2.3
<i>Data-Driven Modeling of Fast Slug Flows in Micro-channels</i>	
Fabiana Cairone	University of Catania, Italy
Giovanna Stella	University of Catania, Italy
Salvina Gagliano	University of Catania, Italy
Maide Bucolo	University of Catania, Italy
14:20 - 14:40	ThB2.4
<i>Parametric optimization in the control design for nonlinear differential games with zero sum</i>	
Valery Afanas'ev	Moscow Institute of Electronics and Applied Mathematics National Research University, Russia
Natalia Matveeva	Lomonosov Moscow State University, Russia
14:40 - 15:00	ThB2.5
<i>Optimization of signal-to-noise ratio in a CCD for spectroscopic applications</i>	
Stefano Di Frischia	ENEA and University of L'Aquila, Italy
Andrea Chiuri	ENEA, Italy
Federico Angelini	ENEA, Italy
Francesco Colao	ENEA, Italy
15:00 - 15:20	ThB2.6

<i>A new faster filter based on optimizing the calculation burden of information and Kalman filters</i>		
Bilal Daass	Université de Lille, CNRS, CRISTAL, France	
Denis Pomorski	Université de Lille, CNRS, CRISTAL, France	
Kamel Haddadi	Université de Lille, CNRS, ISEN, Université Valenciennes, France	
15:20 - 15:40	ThB2.7	
<i>Robust LQR-LMI State-Derivative Controller: A Novel Approach</i>		
Edvaldo Assunção	São Paulo State University, Brazil	
Marco Antonio Beteto	São Paulo State University, Brazil	
Marcelo Teixeira	São Paulo State University, Brazil	
Emerson Silva	Federal Technological University of Paraná, Brazil	
15:40 - 16:00	ThB2.8	
<i>Improving Rotor Angle Stability of the Multimachine Power System Using Constrained Optimal Control</i>		
Djibrine Abakar	Pan African University, Kenya and Polytechnic University of Mongo, Chad	
Ahmed A. Abouelsoud	Cairo University, Egypt	
Michael J. Saulo	Technical University of Mombasa, Kenya	
Simiyu S. Sitati	Moi University, Kenya	
ThC1	Salone d'Onore	
Condition Monitoring and Supervision (Regular Session)		
Chair: Gerard Robert	EDF Hydro and Université Grenoble Alpes, France	
Co-chair: Ralf Stetter	Hochschule Ravensburg-Weingarten, Germany	
16:20 - 16:40	ThC1.1	
<i>Requirements Management for Monitoring and Control</i>		
Ralf Stetter	Hochschule Ravensburg-Weingarten, Germany	
Marcin Witczak	University of Zielona Góra, Poland	
16:40 - 17:00	ThC1.2	
<i>A Framework for the Analysis of Supervised Discrete Event Systems under Attack</i>		
Qi Zhang	Xidian University, China	
Carla Seatzu	University of Cagliari, Italy	
Zhiwu Li	Xidian University, China	
Alessandro Giua	University of Cagliari, Italy	
17:00 - 17:20	ThC1.3	
<i>An Effective Data-Driven Diagnostic Strategy for Cardiac Pathology Screening</i>		
Youssef TRARDI	Aix-Marseille University, Université de Toulon, CNRS, LIS, France	
Bouchra Ananou	Aix-Marseille University, Université de Toulon, CNRS, LIS, France	
Zouhair Haddi	Aix-Marseille University, Université de Toulon, CNRS, LIS, France	
Mustapha Ouladsine	Aix-Marseille University, Université de Toulon, CNRS, LIS, France	
17:20 - 17:40	ThC1.4	
<i>Health-state Assessment Approach based on Unsupervised Feature Selection with Application to Nuclear Power Plant Water Screens</i>		
Antoine Deleplace	Assystem Energy & Infrastructure, France	
Vepa Atamuradov	Assystem Energy & Infrastructure, France	
Mehdi Brahimi	Assystem Energy & Infrastructure, France	
Ahmed Allali	Assystem Energy & Infrastructure, France	
Guillaume Alleaume	Assystem Energy & Infrastructure, France	
Houssame Ennajihi	Assystem Energy & Infrastructure, France	
Robert Plana	Assystem Energy & Infrastructure, France	

17:40 - 18:00	ThC1.5
<i>Trigonometric Modulating Functions for Power Plant Monitoring</i>	
Gerard Robert	EDF Hydro and Université Grenoble Alpes, France
Gildas Besançon	Université Grenoble Alpes, France
18:00 - 18:20	ThC1.6
<i>Hidden Markov Model Based Failure Prognosis for Permanent Magnet Synchronous Machine</i>	
Riham Ginzarly	ESIGELEC, France
Ghaleb Hoblos	ESIGELEC, France
Nazih El Moubayed	CRSI LaRGES, France
18:20 - 18:40	ThC1.7
<i>Machine Learning Techniques for Monitoring of Knock Intensity in Gas-Fueled Marine Engine</i>	
Oleksiy Bondarenko	National Institute of Maritime, Port and Aviation Technology, Japan
Tetsugo Fukuda	National Institute of Maritime, Port and Aviation Technology, Japan
18:40 - 19:00	ThC1.8
<i>Condition Monitoring by Model-of-Signals: Application to gearbox lubrication</i>	
Matteo Barbieri	Università di Bologna, Italy
Francesco Mambelli	LIAM LAB, Italy
Roberto Diversi	Università di Bologna, Italy
Andrea Tilli	Università di Bologna, Italy
Matteo Sartini	LIAM LAB, Italy
ThC2	
Model Predictive Control for Distributed Architecture and Industrial Processes (Regular Session)	
Chair: Henrik Niemann	Technical University of Denmark, Denmark
Co-chair: Frederik Hesselmann	University Duisburg-Essen, Germany
16:20 - 16:40	ThC2.1
<i>Learning-based MPC-architecture satisfying constraints during open loop identification</i>	
Robert Miklos	Technical University of Denmark and GEA Process Engineering A/S, Denmark
Lars Norbert Petersen	GEA Process Engineering A/S, Denmark
Niels Kjølstad Poulsen	Technical University of Denmark, Denmark
Christer Utzen	GEA Process Engineering A/S, Denmark
John Bagterp Jørgensen	Technical University of Denmark, Denmark
Henrik Niemann	Technical University of Denmark, Denmark
16:40 - 17:00	ThC2.2
<i>A Novel Tuning Approach for MPC Parameters Based on Artificial Neural Network: An application to FOPDT System</i>	
Houssam Moumouh	Normandie Université, Université de Rouen Normandie and SEGULA Technologies, France
Nicolas Langlois	Normandie Université, Université de Rouen Normandie, ESIGELEC, IRSEEM, France
Madjid Haddad	SEGULA Technologies, France
17:00 - 17:20	ThC2.3

<i>Model Predictive Control based Energy Flow Control in the Smart Grid</i>	
Frederik Hesselmann	University Duisburg-Essen, Germany
Caroline Charlotte Zhu	University Duisburg-Essen, Germany
Birgit Köppen-Seliger	University Duisburg-Essen, Germany
Steven X. Ding	University Duisburg-Essen, Germany
17:20 - 17:40	ThC2.4
<i>Wavelet-based Model Predictive Control of PWR Nuclear Reactor using Multi-Scale Subspace Identification</i>	
Vineet Vajpayee	University of Portsmouth, UK
Victor Becerra	University of Portsmouth, UK
Nils Bausch	University of Portsmouth, UK
Jiamei Deng	Leeds Beckett University, UK
17:40 - 18:00	ThC2.5
<i>Model Predictive Control of Biomass Combustion with CO Sensor Fault Detection</i>	
Lukas Böhler	Vienna University of Technology, Austria
Gregor Görtler	Fachhochschule Burgenland GmbH, Austria
Jürgen Krail	Fachhochschule Burgenland GmbH, Austria
Martin Kozek	Vienna University of Technology, Austria
18:00 - 18:20	ThC2.6
<i>Trajectory planning and tracking via MPC for transient control of liquid-propellant rocket engines</i>	
Sergio Perez-Roca	DTIS, ONERA, Université Paris-Saclay and CNES - Direction des Lanceurs, France
Julien Marzat	DTIS, ONERA, Université Paris-Saclay, France
Helene Piet-Lahanier	DTIS, ONERA, Université Paris-Saclay, France
Nicolas Langlois	Normandie Université, UNIROUEN, ESIGELEC, IRSEEM, France
François Farago	CNES - Direction des Lanceurs, France
Marco Galeotta	CNES - Direction des Lanceurs, France
Serge Le Gonidec	ArianeGroup SAS, France
18:20 - 18:40	ThC2.7
<i>Distributed Robust Predictive Control of Linear Time-Varying Systems by Using Contractive Sets</i>	
Alexandra Grancharova	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Nedko Perchemliev	University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Sorin Olaru	CentraleSupélec-CNRS-Université Paris-Sud and Université Paris-Saclay, France
18:40 - 19:00	ThC2.8
<i>Optimisation of CSTR Using Infinite Horizon Model Predictive Control With Set Point Tracking and with Input Targets and Control Zones</i>	
Ojonugwa Adukwu	Federal University of Technology Akure, Nigeria
Darci Odloak	University of Sao Paulo, Brazil
Kassab Junior Fuad	University of Sao Paulo, Brazil

FrP	Salone d'Onore
Friday Plenary Lecture (Plenary Session)	
Chair: Silvio Simani	University of Ferrara, Italy
8:30-9:30	FrP
<i>Partially Observed Discrete Event Systems: from Estimation to Cyber-security</i>	
Alessandro Giua	University of Cagliari, Italy

FrA1	Salone d'Onore
Industry-oriented Approaches to Observer Design (Regular Session)	
Chair: Paolo Mercorelli	Leuphana University, Germany
Co-chair: Andrea Monteriù	Università Politecnica delle Marche, Italy
9:50 - 10:10	FrA1.1
<i>A Descriptor Modelling Approach for the Observer Design of Interconnected Li-ion Batteries Using Limited Measurements</i>	
Luis D. Couto	Université libre de Bruxelles, Belgium
Silvane M. Schons	Université libre de Bruxelles, Belgium and Universidade Federal de Santa Catarina, Brazil
Daniel Coutinho	Universidade Federal de Santa Catarina, Brazil
Michel Kinnaert	Université libre de Bruxelles, Belgium
10:10 - 10:30	FrA1.2
<i>Comparison of Inlet Observers for a De-Oiling Gravity Separator</i>	
Leif Hansen	Aalborg University, Denmark
Kasper Lund Jepsen	Aalborg University, Denmark
Petar Durdevic	Aalborg University, Denmark
Zhenyu Yang	Aalborg University, Denmark
10:30 - 10:50	FrA1.3
<i>Analysis of complexity reduction in Kalman filters through decoupling control with chattered inputs in PMSM</i>	
Dennis Kröger	Leuphana University, Germany
Benedikt Haus	Leuphana University, Germany
Paolo Mercorelli	Leuphana University, Germany
10:50 - 11:10	FrA1.4
<i>A new robust observer design based discrete sliding mode control for time-varying delay systems with Hölder nonlinearities and unmatched disturbances</i>	
Sonia Ghrab	University of Monastir, Tunisia
Ahmed Ali Sofiane	Normandie Université, UNIROUEN, ESIGELEC, Laboratoire IRSEEM, France
Nicolas Langlois	Normandie Université, UNIROUEN, ESIGELEC, Laboratoire IRSEEM, France
Hassani Messaoud	University of Monastir, Tunisia
FrA2	Sala del Cardinale
Control and Diagnosis for Environmental Issues (Invited Session)	
Co-organizer: Houcine Chafouk	IRSEEM ESIGELEC, France
Co-organizer: Dumitru Popescu	University Politehnica of Bucharest, Romania
9:50 - 10:10	FrA2.1
<i>Multi Model Control - MMC Approach for Nonlinear Combustion Regime of Diesel Engines</i>	
Mihaela-Ancuta Mone	University Politehnica of Bucharest, Romania
Sette Diop	Laboratoire des Signaux & Systemes, CentraleSupélec, France
Dumitru Popescu	University Politehnica of Bucharest, Romania
Ciprian Lupu	University Politehnica of Bucharest, Romania
10:10 - 10:30	FrA2.2

<i>Advanced Control for Hydrogen Pyrolysis Installations</i>	
Dumitru Popescu	University Politehnica of Bucharest, Romania
Catalin Dimon	University Politehnica of Bucharest, Romania
Pierre Borne	Ecole Centrale de Lille, France
10:30 - 10:50	FrA2.3
<i>Gradient Optimization Methods for Maximum Power Point Tracking in Photovoltaic Panels</i>	
Faical Hamidi	University of Gabes, Tunisia
Severus Olteanu	University Politehnica of Bucharest, Romania
Lavinus Ioan Gliga	University Politehnica of Bucharest, Romania
10:50 - 11:10	FrA2.4
<i>Online estimation of the internal resistance R_{on} of a mosfet in a conversion chain for failure prognostics</i>	
Kokou Anani Agbessi Langueh	IRSEEM ESIGELEC, France
Ghaleb Hoblos	IRSEEM ESIGELEC, France
Houcine Chafouk	IRSEEM ESIGELEC, France
FrB1	Salone d'Onore
Exponential Technologies and Complex Systems at the Edge of Industry: Practical experiences, opportunities and challenges (Panel Discussion)	
Chair: Danilo Mascolo	Confindustria Emilia Romagna Ricerca Innovation Hub
11:10 - 11:30	FrB1.1
<i>The "MEMS wave" from the consumer market to high volume industrial markets</i>	
Andrea Di Matteo	STMicroelectronics
11:30 - 11:50	FrB1.2
<i>Optimized reliability approaches enabling predictive maintenance and safety-oriented decision-making</i>	
Emanuele Pascale	Hitachi Rail STS
11:50 - 12:10	FrB1.3
<i>RAT31 – A case study of Predictive maintenance applied on radar applications</i>	
Alessandro Garibbo	Leonardo Corporate
12:10 - 12:30	FrB1.4
<i>Open Innovation</i>	
Marco Bubani	Vem Sistemi Spa
12:30 - 12:50	FrB1.5
<i>Operative life estimation in machine tools components by Data-Mining</i>	
Dario Capellini	Capellini electrospindles
FrB2	Sala del Cardinale
Predictive Control for Industrial Systems (Regular Session)	
Chair: Silvia Maria Zanoli	Università Politecnica delle Marche, Italy
Co-chair: Kvetoslav Belda	The Czech Academy of Sciences, UTIA, Czech Republic
11:10 - 11:30	FrB2.1
<i>Path Modeling and 3D Robot Visualization for Model-Based Control of Articulated Robots</i>	
Kvetoslav Belda	The Czech Academy of Sciences, UTIA, Czech Republic
Karel Dvorak	The College of Polytechnics Jihlava, Czech Republic
11:30 - 11:50	FrB2.2

<i>Distributed Predictive Control of Serially Chained Systems</i>	
José Igreja	INESC-ID and Instituto Politécnico de Lisboa, Portugal
Joao M Lemos	INESC-ID and Instituto Superior Técnico, University of Lisboa, Portugal
11:50 - 12:10	FrB2.3
<i>High Level Optimization of a Steel Industry Reheating Furnace</i>	
Silvia Maria Zanoli	Università Politecnica delle Marche, Italy
Crescenzo Pepe	Alperia Bartucci Spa, Italy
Giacomo Astolfi	Alperia Bartucci Spa, Italy
Lorenzo Orlietti	Alperia Bartucci Spa, Italy
Chiara Valzecchi	Alperia Bartucci Spa, Italy
12:10 - 12:30	FrB2.4
<i>Optimal Scheduling of Pumping Stations and Pressure Minimization of a Water Distribution Network</i>	
Crescenzo Pepe	Alperia Bartucci Spa, Italy
Giacomo Astolfi	Alperia Bartucci Spa, Italy
Lorenzo Orlietti	Alperia Bartucci Spa, Italy
Chiara Valzecchi	Alperia Bartucci Spa, Italy
Silvia Maria Zanoli	Università Politecnica delle Marche, Italy
12:30 - 12:50	FrB2.5
<i>Reconfigurable Predictive Control System applied to the Quadruple Tank Process</i>	
Victor Sánchez Zurita	Pontifical Catholic University of Peru, Peru
Gustavo Pérez Zuñiga	Pontifical Catholic University of Peru, Peru
Javier Sotomayor Moriano	Pontifical Catholic University of Peru, Peru
FrC1	Salone d'Onore
Control Design for Industrial Applications (Regular Session)	
Chair: Harald Aschemann	University of Rostock, Germany
Co-chair: Edy Ayala	Universidad Politécnica Salesiana, Ecuador
13:30 - 13:50	FrC1.1
<i>Discrete-Time Takagi-Sugeno Tracking Control Design for the Motor Torque of a Hydrostatic Transmission</i>	
Ngoc Danh Dang	University of Rostock, Germany
Harald Aschemann	University of Rostock, Germany
13:50 - 14:10	FrC1.2
<i>A control approach to energy supply-demand markets</i>	
Bertinho Costa	INESC-ID/IST/ULisbon, Portugal
João Lemos	INESC-ID/IST/ULisbon, Portugal
14:10 - 14:30	FrC1.3
<i>Controlling a Bank Model Economy by Sliding Model Control with Help of Kalman Filter</i>	
Helge Ronald Samson	Leuphana University of Lueneburg, Germany
Claus Rech	Leuphana University of Lueneburg, Germany
Katharina Benz	Leuphana University of Lueneburg, Germany
Paolo Mercorelli	Leuphana University of Lueneburg, Germany
14:30 - 14:50	FrC1.4
<i>Simulation and Experimental Validation of Fuzzy Control Techniques for Wind Turbine System and Hydroelectric Plant</i>	
Silvio Simani	University of Ferrara, Italy
Stefano Alvisi	University of Ferrara, Italy
Mauro Venturini	University of Ferrara, Italy

14:50 - 15:10		FrC1.5
<i>Perturb and Observe Maximum Power Point Tracking Algorithm for Permanent Magnet Synchronous Generator Wind Turbine Systems</i>		
Edy Ayala		Universidad Politécnica Salesiana, Ecuador
Silvio Simani		University of Ferrara, Italy
15:10 - 15:30		FrC1.6
<i>Applications of a compact controller architecture</i>		
Henrik Niemann		Technical University of Denmark, Denmark
15:30 - 15:50		FrC1.7
<i>Modification of Explicit Interpolating Controller for Control Problem with Constant Setpoint</i>		
Zdeněk Bouček		European Centre of Excellence, University of West Bohemia, Czech Republic
Miroslav Flídr		European Centre of Excellence, University of West Bohemia, Czech Republic
15:50 - 16:10		FrC1.8
<i>Combined Scheme for Basic Control Systems in Industrial Bioreactors</i>		
Vytautas Galvanuskas		Kaunas University of Technology, Lithuania
Rimvydas Simutis		Kaunas University of Technology, Lithuania
Donatas Levisauskas		Kaunas University of Technology, Lithuania
Renaldas Urniezius		Kaunas University of Technology, Lithuania
FrC2		Sala del Cardinale
Enhanced Reliability Control Systems (Regular Session)		
Chair: Ondrej Straka		University of West Bohemia, Czech Republic
Co-chair: Ivo Punčochář		University of West Bohemia, Czech Republic
13:30 - 13:50		FrC2.1
<i>Adaptive Gaussian Mixture Method for Uncertainty Propagation in Space Surveillance</i>		
Jan Krejčí		University of West Bohemia, Czech Republic
Ondrej Straka		University of West Bohemia, Czech Republic
13:50 - 14:10		FrC2.2
<i>Point-Mass Filter: Density Specific Grid Design and Implementation</i>		
Jakub Matoušek		University of West Bohemia, Czech Republic
Jindrich Dunik		University of West Bohemia, Czech Republic
Ondrej Straka		University of West Bohemia, Czech Republic
14:10 - 14:30		FrC2.3
<i>Model-based Formal Reliability Analysis of Grid Dynamics with Solar Energy Sources</i>		
Andrea Peruffo		University of Oxford, UK
Emeline Guiu		RTE France, La Defense, Paris, France
Patrick Panciatici		RTE France, La Defense, Paris, France
Alessandro Abate		University of Oxford, UK
14:30 - 14:50		FrC2.4
<i>Combining Data-Driven Root Cause Analysis Methods in an Extended Root Cause Priority List</i>		
Christopher Reimann		University of Duisburg-Essen, Germany
Steven X.Ding		University of Duisburg-Essen, Germany
Chris J. Louen		University of Duisburg-Essen, Germany
14:50 - 15:10		FrC2.5

<i>Localisation of a Heavy-Duty Omnidirectional Vehicle Using IMU and Wheel Odometry</i>	
Xiaolong Zhang	Tampere University, Finland
Henri Liikanen	Tampere University, Finland
Eelis Peltola	Tampere University, Finland
Mohammad M. Aref	Tampere University, Finland
Jouni Mattila	Tampere University, Finland
15:10 - 15:30	FrC2.6
<i>Estimation of train speed and traveled distance using odometry and partial IMU</i>	
Ivo Punčochář	University of West Bohemia, Czech Republic
Jan Taufer	AŽD Praha, Czech Republic
15:30 - 15:50	FrC2.7
<i>Deadlock and collision avoidance in railway networks with dynamic routing: A Petri Net approach with partial controllability and observability</i>	
Paul Cazenave	Centrale Lille, CRISAL, France
Manel Khelif-Bouassida	Centrale Lille, CRISAL, France
Armand Toguyéni	Centrale Lille, CRISAL, France
15:50 - 16:10	FrC2.8
<i>Data-Driven Models for the Determination of Laundry Moisture Content in a Household Laundry Treatment Dryer Appliance</i>	
Giuliano Zambonin	University of Padova and Electrolux Italia S.p.a., Italy
Fabio Altinier	Electrolux Italia S.p.a., Italy
Alessandro Beghi	University of Padova, Italy
Leandro dos Santos Coelho	Pontificia Universidade Católica do Paraná, Brazil
Terenzio Giroto	Electrolux Italia S.p.a., Italy
Mirco Rampazzo	University of Padova, Italy
Gilberto Reynoso-Meza	Pontificia Universidade Católica do Paraná, Brazil
Gian Antonio Susto	University of Padova, Italy
FrD1	Salone d'Onore
Control Design for AGVs, UAVs and Mobile Robots (Regular Session)	
Chair: Marcin Pazera	University of Zielona Gora, Poland
Co-chair: Daniel Ortiz-Arroyo	Aalborg University, Denmark
16:30 - 16:50	FrD1.1
<i>Model-based design of trajectory planning and control for automated vehicles in dynamic environment</i>	
Enrico Raffone	Centro Ricerche FIAT S.c.p.A, Italy
Claudio Rei	Centro Ricerche FIAT S.c.p.A, Italy
Marco Rossi	FCA Fiat Chrysler Automobile, Germany
16:50 - 17:10	FrD1.2
<i>Design and performance analysis of AGV: applications to terrain mapping</i>	
Norbert Kukurowski	University of Zielona Gora, Poland
Marcin Witczak	University of Zielona Gora, Poland
Marcin Pazera	University of Zielona Gora, Poland
Krzysztof Patan	University of Zielona Gora, Poland
17:10 - 17:30	FrD1.3

<i>UAV Visual Servoing Navigation in Sparsely Populated Environments</i>	
Petar Durdevic	Aalborg University, Denmark
Daniel Ortiz-Arroyo	Aalborg University, Denmark
Shaobao Li	Aalborg University, Denmark
Zhenyu Yang	Aalborg University, Denmark
17:30 - 17:50	FrD1.4
<i>Nonlinear robust control for quadrotor</i>	
Jeremy Brossard	Ecole de Technologie Superieure, Montreal, Canada
Maher Hammami	Faculte des Sciences of Universite de Sfax Tunisia, Tunisia
David Bensoussan	Ecole de Technologie Superieure, Montreal, Canada
17:50 - 18:10	FrD1.5
<i>Trajectory tracking and time delay management of 4-mecanum wheeled mobile robots (4-MWMMR)</i>	
Samia Mellah	Aix Marseille Université, Université de Toulon, CNRS, LIS, France
Guillaume Graton	Aix Marseille Université, Université de Toulon, CNRS, LIS and Ecole Centrale Marseille, France
El mostafa El-Adel	Aix Marseille Université, Université de Toulon, CNRS, LIS, France
Mustapha Ouladsine	Aix Marseille Université, Université de Toulon, CNRS, LIS, France
Alain Planchais,	ST Microelectronics Rousset, France
18:10 - 18:30	FrD1.6
<i>Remarks on a Quaternion Neural Network-based Controller applied to a Three-link Robot Manipulator</i>	
Kazuhiko Takahashi	Doshisha University, Japan
FrD2	Sala del Cardinale
Fault Detection and Identification for Industrial and Civil Structures (Regular Session)	
Chair: Dusan Krokavec	Technical University of Košice, Slovakia
Co-chair: Ayla Nawaz	University of Lübeck, Germany
16:30 - 16:50	FrD2.1
<i>Multiple-Kalman-Filter Based Multiple Actuator Faults Detection and Diagnosis for MIMO Asymmetrical Resonant Structures</i>	
Peng Zhang	Flinders University, Australia
Fangpo He	Flinders University, Australia
16:50 - 17:10	FrD2.2
<i>Fault detection for buildings using uncertain parameters and interacting multiple-model method</i>	
Jaroslav Tabacek	Czech Technical University in Prague, Czech Republic
Vladimir Havlena	Czech Technical University in Prague, Czech Republic
17:10 - 17:30	FrD2.3
<i>Fault Detection Method for the SRF Cavities of the European XFEL</i>	
Ayla Nawaz	University of Lübeck, Germany
Sven Pfeiffer	Deutsches Elektronen-Synchrotron, Germany
Gerwald Lichtenberg	Hamburg University of Applied Science, Germany
Philipp Rostalski	University of Lübeck, Germany
17:30 - 17:50	FrD2.4
<i>Fault Detection in Linear Metzlerian Systems</i>	
Dusan Krokavec	Technical University of Košice, Slovakia
Anna Filasova	Technical University of Košice, Slovakia
17:50 - 18:10	FrD2.5

Fault tolerant fusion using α -Rényi divergence for autonomous vehicle localization

Khoder Makkawi

Université de Lille, CNRS, Centrale Lille, France and
Lebanese University, Lebanon

Nourdine Ait-Tmazirte

Institut de Recherche Technologique Railenium, France

Maan El Badaoui El Najjar

Université de Lille, CNRS, Centrale Lille, France

Nazih El Moubayed

CRSI LaRGES, Lebanese University, Lebanon

18:10 - 18:30

FrD2.6

Identification of MEMS Gyroscope Structure Using Frequency Response Data

Ladislav Král

University of West Bohemia, Czech Republic

Tomáš Polóni

Honeywell International, Brno, Czech Republic and

Slovak University of Technology, Slovakia

Martin Vágner

Honeywell International, Brno, Czech Republic

18:30 - 18:50

FrD2.7

Frisch Scheme Identification of Robots Dynamic Parameters

Stefano Massaroli

The University of Tokyo, Japan

Federico Califano

University of Twente, The Netherlands

Claudio Melchiorri

University of Bologna, Italy

Atsushi Yamashita

The University of Tokyo, Japan

Hajime Asama

The University of Tokyo, Japan
