

TECHNICAL PROGRAM
7th IFAC Symposium on System Structure and Control
&
15th IFAC Workshop on Time Delay Systems

Technical Program for Monday September 9, 2019

MoS1A		George Enescu
Consensus Problems and Platoons (Regular Session)		
Chair: Sipahi, Rifat		Northeastern University
Co-Chair: Manjunath, Sreelakshmi		Washington University in St Louis
09:50-10:10	MoS1A.1	
<i>A Stabilizing Controller for the Modified Optimal Velocity Model</i> , pp. 1-6.		
<u>Manjunath, Sreelakshmi</u>		Washington University in St Louis
<u>Kamath, Gopal Krishna</u>		Texas A&M University
10:10-10:30	MoS1A.2	
<i>Dynamic Predictor-Based Extended Cooperative Adaptive Cruise Control</i> , pp. 7-12.		
<u>Juárez, Luis</u>		CINVESTAV-IPN
<u>Mondie, Sabine</u>		CINVESTAV-IPN
10:30-10:50	MoS1A.3	
<i>Transient Behaviour Analysis and Design for Platoons with Communication Delay</i> , pp. 13-18.		
<u>Fehér, Áron</u>		Sapientia University
<u>Marton, Lorinc</u>		Sapientia University
10:50-11:10	MoS1A.4	
<i>Fast Consensus in a Large-Scale Multi-Agent System with Directed Graphs Using Time-Delayed Measurements</i> , extended abstract A3.		
<u>Ramírez, Adrián</u>		IPICYT, San Luis Potosí, SLP, México
<u>Sipahi, Rifat</u>		Northeastern University, Boston, MA, USA
<u>Mondié, Sabine</u>		CINVESTAV-IPN
<u>Garrido, Rubén</u>		CINVESTAV-IPN
11:10-11:30	MoS1A.5	
<i>Delay-independent Synchronization in Networks of Nonlinear Systems with Uncertain and Non-identical Transmission Delays</i> , extended abstract A15.		
<u>Miyamoto, Kota</u>		Graduate School of Science and Engineering, Tokyo Metropolitan University
<u>Oguchi, Toshiki</u>		Graduate School of Science and Engineering, Tokyo Metropolitan University
MoS1B		Mircea Eliade
Structural Properties (Regular Session)		
Chair: Zattoni, Elena		Alma Mater Studiorum - University of Bologna
Co-Chair: Camlibel, Kanat		University of Groningen
09:50-10:10	MoS1B.1	
<i>On the Controllability and Stabilizability of Linear Complementarity Systems</i> , pp. 1-6.		
<u>Camlibel, Kanat</u>		University of Groningen
10:10-10:30	MoS1B.2	
<i>A MATLAB Toolbox for Structural Analysis of Linear Systems</i> , pp. 7-12.		
<u>Geisel, Alfred</u>		Baden-Wuerttemberg Cooperative State University Stuttgart
<u>Svaricek, Ferdinand</u>		Univ of the German Armed Forces, Munich
10:30-10:50	MoS1B.3	
<i>Input-Output Jumps of Scalar Linear Systems</i> , pp. 13-17.		
<u>Kavaja, Juxhino</u>		University of Parma
<u>Piazzì, Aurelio</u>		University of Parma
10:50-11:10	MoS1B.4	
<i>Disturbance Decoupling with Stability for Impulsive Switching Linear Systems</i> , pp. 18-23.		
<u>Conte, Giuseppe</u>		Universita' Politecnica Delle Marche
<u>Perdon, Anna Maria</u>		Universita' Politecnica Delle Marche
<u>Zattoni, Elena</u>		Alma Mater Studiorum - University of Bologna

MoS2A		George Enescu
Input Delays and Teleoperation (Regular Session)		
Chair: Sename, Olivier	Grenoble Institute of Technology / GIPSA-Lab	
Co-Chair: Aliseyko, Alexey	Saint-Petersburg State University	
14:50-15:10	MoS2A.1	
<i>Lyapunov-Krasovskii Functionals for Linear Systems with Input Delay</i> , pp. 19-24.		
Aliseyko, Alexey	Saint-Petersburg State University	
Kharitonov, Vladimir	Saint-Petersburg State University	
15:10-15:30	MoS2A.2	
<i>Preserving the Physical Coupling in Teleoperation Despite Time Delay through Observer-Based Gradient Control</i> , pp. 25-30.		
Singh, Harsimran	German Aerospace Center (DLR)	
Panzirsch, Michael	German Aerospace Center (DLR)	
Ryu, Jee-Hwan	Korea University of Technology and Education	
15:30-15:50	MoS2A.3	
<i>Time Domain Control for Passive Variable Motion and Force Scaling in Delayed Teleoperation</i> , pp. 31-36.		
Panzirsch, Michael	German Aerospace Center (DLR)	
Balachandran, Ribin	German Aerospace Center (DLR)	
15:50-16:10	MoS2A.4	
<i>Adaptive Multi-Observer Design for Systems with Unknown Long Input Delay</i> , pp. 37-42.		
Novella-Rodriguez, David Fernando	Instituto Tecnológico De Estudios Superiores De Monterrey	
Witrant, Emmanuel	Université Grenoble Alpes	
del Muro Cuéllar, Basilio	Instituto Politecnico Nacional	
Márquez Rubio, Juan Francisco	Instituto Politécnico Nacional	
16:10-16:30	MoS2A.5	
<i>Structured Observer-Based Controller for Delayed Systems with Two Unstable Poles and Minimum Phase Zeros</i> , pp. 162-167.		
Vazquez, Carlos Daniel	Instituto Politecnico Nacional	
Novella-Rodriguez, David Fernando	Instituto Tecnológico De Estudios Superiores De Monterrey	
del Muro Cuéllar, Basilio	Instituto Politecnico Nacional	
Sename, Olivier	Grenoble Institute of Technology / GIPSA-Lab	
Dugard, Luc	Gipsa-Lab, CNRS Grenoble-INP-Université Grenoble Alpes	
Márquez Rubio, Juan Francisco	Instituto Politécnico Nacional	
MoS2B		Mircea Eliade
Linear Systems and linearization/Uncertain Systems (Regular Session)		
Chair: Perev, Kamen	Technical University of Sofia	
Co-Chair: Shingin, Hidenori	Yamaguchi University	
14:50-15:10	MoS2B.1	
<i>A Simple Method for Orthogonal Polynomial Approximation of Linear Time-Varying System Gramians</i> , pp. 24-29.		
Perev, Kamen	Technical University of Sofia	
15:10-15:30	MoS2B.2	
<i>Analysis of Second Order Cluster Consensus for Directed Networks with Time Delay</i> , pp. 30-35.		
Cihan, Onur	Marmara University	
Akar, Mehmet	Bogazici University	
15:30-15:50	MoS2B.3	
<i>A Performance Analysis for Iterative Learning Control in the Presence of Observation Noise</i> , pp. 36-41.		
Shingin, Hidenori	Yamaguchi University	
15:50-16:10	MoS2B.4	
<i>Suboptimal Control of Nonlinear Dynamic System with Unlimited Transition Process Time</i> , pp. 42-47.		
Presnova, Anna	National Research University Higher School of Economics Moscow I	
Afanas'ev, Valery	National Research University Higher School of Economics Moscow I	
16:30-16:50	MoS2B.5	
<i>Adaptive Control of Uncertain Nonlinear Plants with Unknown Hysteresis in Actuation</i> , extended abstract A8.		
Ye, Wenjun	Concordia University, Canada	
Su, Chun-Yi	Guangdong University of Technology, China	
Yang, Simon X.	University of Guelph, Canada	

MoS3A	George Enescu
Critical Delays and Dominant Pole Placement (Regular Session)	
Chair: Sipahi, Rifat	Northeastern University, Boston, MA, USA
Co-Chair: Fiser, Jaromir	Czech Technical Univ in Prague
17:00-17:20	MoS3A.1
<i>PID Controller Tuning Via Dominant Pole Placement in Comparison with Ziegler-Nichols Tuning</i> , pp. 43-48.	
Fiser, Jaromir	Czech Technical Univ in Prague
Zitek, Pavel	Czech Technical Univ in Prague
17:20-17:40	MoS3A.2
<i>Critical time delay for delayed feedback systems subject to finite spectrum assignment</i> , extended abstract A9	
Kovacs, Balazs A.	Budapest University of Technology and Economics, Hungary
Inspurger, Tamas	Budapest University of Technology and Economics, Hungary
17:40-18:00	MoS3A.3
<i>An approach to compute and design the delay margin of a large-scale matrix delay equation</i> , extended abstract A2	
Ramírez, Adrián	IPICYT, San Luis Potosí, SLP, México
Koh, Min Hyong	Northeastern University, Boston, MA, USA
Sipahi, Rifat	Northeastern University, Boston, MA, USA
Breda, Dimitri	University of Udine, Italy
18:00-18:20	MoS3A.4
<i>Discriminant-Based Parametric Multiplicity-Induced-Dominancy in Second Order Delay Differential Equations</i> , extended abstract A5	
Boussaada, Islam	Laboratory of Signals and Systems (L2S), DRII-IPSA
Niculescu, Silviu-Iulian	L2S, Université Paris Saclay, CNRS- CentraleSupélec -Université Paris Sud
Perez-Ramos, Redamy	DRII-IPSA, LPTHE, Sorbonne Université
Ei-Ati, Ali	DRII-IPSA,
Trabelsi, Karim	DRII-IPSA
18:20-18:40	MoS3A.5
<i>Effects of sampling delay and back electromotive force on balancing the Furuta pendulum</i> , extended abstract A16	
Vizi, Mate B.	Budapest University of Technology and Economics, Hungary
Stepan, Gabor	Budapest University of Technology and Economics, Hungary
MoS3B	Mircea Eliade
Applications in Automotive Systems (Regular Session)	
Chair: Dugard, Luc	Gipsa-Lab, CNRS Grenoble-INP-Université Grenoble Alpes
Co-Chair: Olaru, Sorin	CentraleSupélec
17:00-17:20	MoS3B.1
<i>Design and Analysis of Several State-Feedback Fault-Tolerant Control Strategies for Semi-Active Suspensions</i> , pp. 48-53.	
Morato, Marcelo Menezes	Universidade Federal De Santa Catarina
Sename, Olivier	Grenoble Institute of Technology / GIPSA-Lab
Dugard, Luc	Gipsa-Lab, CNRS Grenoble-INP-Université Grenoble Alpes
17:20-17:40	MoS3B.2
<i>The Design of an Hinf/LPV Active Braking Control to Improve Vehicle Roll Stability</i> , pp. 54-59.	
Vu, Van Tan	University of Transport and Communications
Sename, Olivier	Grenoble Institute of Technology / GIPSA-Lab
Dugard, Luc	Gipsa-Lab, CNRS Grenoble-INP-Université Grenoble Alpes
Gaspar, Peter	MTA SZTAKI
17:40-18:00	MoS3B.3
<i>LPV Force Observer Design and Experimental Validation from a Dynamical Semi-Active ER Damper Model</i> , pp. 60-65.	
Pham, Thanh-Phong	Univ. Grenoble Alpes (GIPSA-Lab)
Sename, Olivier	Grenoble Institute of Technology / GIPSA-Lab
Dugard, Luc	Gipsa-Lab, CNRS Grenoble-INP-Université Grenoble Alpes
Vu, Van Tan	University of Transport and Communications
18:00-18:20	MoS3B.4
<i>A Mathematical Model for Dynamic Operation of Zinc-Air Battery Cells</i> , pp. 66-71.	
Olaru, Sorin	CentraleSupélec
Golovkina, Anna	Saint Petersburg State University
Lao-atiman, Woranunt	Chulalongkorn University
Kheawhom, Soorathep	Chulalongkorn University

Technical Program for Tuesday September 10, 2019

TuS1A		George Enescu
New Trends in Computational Methods for Time-Delay Systems (Invited Session)		
Chair: Boussaada, Islam	Laboratory of Signals and Systems (L2S), DRII-IPSA	
Organizer: Boussaada, Islam	Laboratory of Signals and Systems (L2S), DRII-IPSA	
Organizer: Bouzidi, Yacine	INRIA	
Organizer: Quadrat , Alban	Inria Lille - Nord Europe	
08:10-08:30		TuS1A.1
<i>Active Vibration Control through Quasi-Polynomial Based Controller (I)</i> , pp. 49-54.		
Tliba, Sami	Univ Paris-Sud, CNRS, CentraleSupelec, Université Paris-Saclay	
<u>Boussaada, Islam</u>	Laboratory of Signals and Systems (L2S), DRII-IPSA	
Bedouhene, Fazia	Laboratoire De Mathématiques Pures Et Appliquées(LMPA), Université Tizi-Ouzou, Algeria	
Niculescu, Silviu-Iulian	L2S, Université Paris Saclay, CNRS- CentraleSupélec -Université Paris Sud	
08:30-08:50		TuS1A.2
<i>On Pole Placement and Spectral Abscissa Characterization for Time-Delay Systems (I)</i> , pp. 55-60.		
Bedouhene, Fazia	Laboratoire De Mathématiques Pures Et Appliquées(LMPA), Université Tizi-Ouzou, Algeria	
<u>Boussaada, Islam</u>	Laboratory of Signals and Systems (L2S), DRII-IPSA	
Niculescu, Silviu-Iulian	L2S, Université Paris Saclay, CNRS- CentraleSupélec -Université Paris Sud	
08:50-09:10		TuS1A.3
<i>Practical Guidelines for PD and PI Delay Based Controllers (I)</i> , pp. 61-66.		
<u>Hernandez-Diez, José</u>	Université de Paris-Saclay (CentraléSupelec)	
Mendez-Barrios, Cesar Fernando	Universidad Autónoma De San Luis Potosí, Mexico	
Niculescu, Silviu-Iulian	L2S, Université Paris Saclay, CNRS- CentraleSupélec -Université Paris Sud	
09:10-09:30		TuS1A.4
<i>Optimization of the Smoothed Spectral Abscissa for Retarded Type Systems (I)</i> , pp. 67-72.		
Gomez, Marco Antonio	KU Leuven	
<u>Michiels, Wim</u>	KU Leuven	
09:30-09:50		TuS1A.5
<i>Insights on Asymptotic Behavior of Characteristic Roots of Quasi-Polynomials with Delay-Dependent Coefficients in Some Ill-Posed Cases (I)</i> , pp. 73-78.		
<u>Martínez-González, Alejandro</u>	Universidad Autónoma De San Luis Potosí, Mexico	
Mendez-Barrios, Cesar Fernando	Universidad Autónoma De San Luis Potosí, Mexico	
Niculescu, Silviu-Iulian	L2S, Université Paris Saclay, CNRS- CentraleSupélec -Université Paris Sud	
Chen, Jie	City University of Hong Kong	
TuS1B		Mircea Eliade
Algebraic and Symbolic Methods for Mathematical Systems Theory (Invited Session)		
Chair: Zerz, Eva	RWTH Aachen Univ	
Organizer: Bouzidi, Yacine	INRIA	
Organizer: Quadrat, Alban	Inria Lille - Nord Europe	
Organizer: Zerz, Eva	RWTH Aachen Univ	
08:10-08:30		TuS1B.1
<i>Collision-Free Dynamical Systems (I)</i> , pp. 72-76.		
<u>Zerz, Eva</u>	RWTH Aachen Univ	
Herty, Michael	Rwth Aachen	
08:30-08:50		TuS1B.2
<i>Towards a Geometric Theory for nD Behaviors: Conditioned Invariance and Detectability Subspaces (I)</i> , pp. 77-81.		
<u>Pereira, Ricardo</u>	University of Aveiro	
Rocha, Paula	Univ of Porto	
08:50-09:10		TuS1B.3
<i>Algebraic Aspects of the Exact Signal Demodulation Problem (I)</i> , pp. 82-87.		
Hubert, Elisa	SafranTech	
Bouzidi, Yacine	INRIA	
Dagher, Roudy	Inria Lille, Inria Chile	
Barrau, Axel	SafranTech	
<u>Quadrat, Alban</u>	Inria Lille - Nord Europe	

TuS3A		George Enescu
Stability Analysis II (Regular Session)		
Chair: Pomet, Jean-Baptiste		INRIA Sophia Antipolis, France
Co-Chair: Diblík, Josef		Brno University of Technology
14:50-15:10	TuS3A.1	
<i>On Lower-Bound Estimates of the Lyapunov Dimension and Topological Entropy for the Rossler Systems</i> , pp. 97-102.		
<u>Kuznetsov, Nikolay</u>		Saint-Petersburg State Univ
Mokaev, Timur		St. Petersburg State University
Kudryashova, Elena		Saint-Petersburg State University
Kuznetsova, Olga		Saint Petersburg State University
Danca, Marius-F.		Romanian Institute of Science and Technology
15:10-15:30	TuS3A.2	
<i>Semi-Definite Lyapunov Functionals in the Stability Problem of Volterra Integral-Differential Equations</i> , pp. 103-108.		
<u>Andreev, Aleksandr</u>		Ulyanovsk State University
Peregudova, Olga		Ulyanovsk State University
15:30-15:50	TuS3A.3	
<i>Multistability and Bursting in a Pair of Delay Coupled Oscillators with a Relay Nonlinearity</i> , pp. 109-114.		
Glyzin, Sergey	Computer Network Department, Yaroslavl State University	
<u>Preobrazhenskaia, Margarita</u>	Yaroslavl State University	
15:50-16:10	TuS3A.4	
<i>On deciding stability of high frequency amplifiers</i> , extended abstract A6.		
Baratchart, Laurent	INRIA Sophia Antipolis, France	
<u>Fueyo, Sebastien</u>	INRIA Sophia Antipolis, France	
Lebeau, Gilles	Université de Nice Sophia Antipolis, France	
Pomet, Jean-Baptiste	INRIA Sophia Antipolis, France	
16:10-16:30	TuS3A.5	
<i>On absolute stability of neutral differential systems with Lurie nonlinearity</i> , extended abstract A7.		
<u>Diblík, Josef</u>	Brno University of Technology	
Khusainov, D.Ya.	Kyiv State University, Kyiv, Ukraine	
Bastinec, J.	Brno University of Technology	
Shatyrko, A.	Kyiv State University, Kyiv, Ukraine	
TuS3B		Mircea Eliade
Damping and Control (Regular Session)		
Chair: Abbou, Rosa	LS2N University/ IUT of Nantes	
Co-Chair: Su, Chun-Yi	Concordia Univ	
14:50-15:10	TuS3B.1	
<i>Double Deployment of Delayed Resonator in Active Vibration Suppression</i> , pp. 115-120.		
Kucera, Vladimir	Czech Technical University in Prague	
<u>Fiser, Jaromir</u>	Czech Technical University in Prague	
Vyhlidal, Tomas	Czech Technical University in Prague	
15:10-15:30	TuS3B.2	
<i>Damping Oscillation of Suspended Payload by up and down Motion of the Pivot Base - Time Delay Algorithms for UAV Applications</i> , pp. 121-126.		
<u>Kure, Matej</u>	Czech Technical University in Prague	
Busek, Jaroslav	Department of Instrumentation and Control Engineering, Faculty O	
Vyhlidal, Tomas	Czech Technical University in Prague	
Niculescu, Silviu-Iulian	Laboratory of Signals and Systems (L2S)	
15:30-15:50	TuS3B.3	
<i>Production control policies comparison for the stability of perishable inventory level</i> , extended abstract A13.		
Bou Farraa, Berna	LS2N Université Bretagne Loire, Nantes	
<u>Abbou, Rosa</u>	LS2N Université Bretagne Loire, Nantes	
Loiseau, Jean Jacques	LS2N Université Bretagne Loire, Nantes	
Ignaciuk, Przemyslaw	Lodz University of Technology, Poland	
15:50-16:10	TuS3B.4	
<i>Impact of production parameter uncertainties on the stability of the inventory regulation systems using feedback control law structure</i> , extended abstract A14.		
Bou Farraa, Berna	LS2N Université Bretagne Loire, Nantes	
<u>Abbou, Rosa</u>	LS2N Université Bretagne Loire, Nantes	
Loiseau, Jean Jacques	LS2N Université Bretagne Loire, Nantes	

TuS4A		George Enescu
Optimality (Regular Session)		
Chair: Michiels, Wim		KU Leuven
Co-Chair: Peet, Matthew M		Arizona State University
17:00-17:20	TuS4A.1	
<i>Computing the Robust H-Infinity Norm of Time-Delay LTI Systems with Real-Valued and Structured Uncertainties</i> , pp. 127-132.		
Appeltans, Pieter		KU Leuven
<u>Michiels, Wim</u>		KU Leuven
17:20-17:40	TuS4A.2	
<i>A Property of Optimal Control in Nonlinear Time-Delay Systems</i> , pp. 133-137.		
<u>Kuptsova, Svetlana Evgenievna</u>		Saint-Petersburg State University
Zaranik, Uliana		Saint-Petersburg State University
17:40-18:00	TuS4A.3	
<i>On Hamilton-Jacobi-Bellman-Isaacs Equation for Time-Delay Systems</i> , pp. 138-143.		
<u>Plaksin, Anton</u>	Krasovskii Institute of Mathematics and Mechanics (IMM), Russia	Ural Federal University, Russia
18:00-18:20	TuS4A.4	
<i>On the construction of the Bellman functional for time delay systems</i> , extended abstract A4.		
Ortega-Martínez, Jorge-Manuel		CINVESTAV-IPN México
Santos-Sánchez, Omar-Jacobo		Universidad Autónoma del Estado de Hidalgo
<u>Mondié, Sabine</u>		CINVESTAV-IPN México
18:20-18:40	TuS4A.5	
<i>Reformulating Stability and Control of Linear Time-Delay Systems using a coupled ODE-PDE Framework</i> , extended abstract A11.		
<u>Peet, Matthew M.</u>		Arizona State University
Shivakumar, Sachin		Arizona State University
TuS4B		Mircea Eliade
Applications of Time Delay Systems (Regular Session)		
Chair: Danciu, Daniela		University of Craiova, Romania
Co-Chair: Kekik, Betül		AVL Research and Engineering, Istanbul, Turkey
17:00-17:20	TuS4B.1	
<i>Water Hammer Stability in a Hydroelectric Plant with Surge Tank and Throttling</i> , pp. 144-149.		
Danciu, Daniela		University of Craiova, Romania
Popescu, Dan		University of Craiova, Romania
<u>Rasvan, Vladimir</u>		University of Craiova, Romania
17:20-17:40	TuS4B.2	
<i>Model Predictive Control of Diesel Engine Air Path with Actuator Delays</i> , pp. 150-155.		
<u>Kekik, Betül</u>	AVL Research and Engineering, Istanbul, Turkey	
Akar, Mehmet		Bogazici University, Turkey
17:40-18:00	TuS4B.3	
<i>Modelling and Nonlinear Model Predictive Control of a Twin Screw Feeder</i> , pp. 156-161.		
<u>Bascone, Davide</u>		Imperial College London
Galvanin, Federico		University College London
Shah, Nilay		Imperial College London
Garcia-Munoz, Salvador		Eli Lilly and Company
18:00-18:30	TuS4B.4	
<i>Identification of reaction delay during human balancing by cepstral analysis</i> , extended abstract A10.		
<u>Nagy, Dalma J.</u>	Budapest University of Technology and Economics, Hungary	
Bencsik, László		MTA-BME, Budapest, Hungary
Insperger, Tamás		Budapest University of Technology and Economics, Hungary

Technical Program for Wednesday September 11, 2019

WeS1A	George Enescu
Systems with Complex Behaviors (Regular Session)	
Chair: Barbu, Tudor V.	Institute of Computer Science of the Romanian Academy
Co-Chair: Kablar, Natasa A.	Lola Institute, Belgrade, Serbia
09:50-10:10	WeS1A.1
<i>Recursive Estimation for Discrete-Time Markovian Jump Singular Systems with Random State Delays</i> , pp. 168-173.	
<u>Odorico, Elizandra Karla</u>	University of São Paulo
Teófilo Rocha, Kaio Douglas	University of São Paulo
Terra, Marco Henrique	University of São Paulo
10:10-10:30	WeS1A.2
<i>Second-Order Anisotropic Diffusion-Based Technique for Poisson Noise Removal</i> , pp. 174-178.	
<u>Barbu, Tudor</u>	Institute of Computer Science of the Romanian Academy
10:30-10:50	WeS1A.3
<i>Stability and stabilization of singular differential – difference system with time delay</i> , extended abstract A17.	
<u>Kablar, Natasa A.</u>	Lola Institute, Belgrade, Serbia
10:50-11:10	WeS1A.4
<i>Stability of singular differential-discrete system with time delay: LMI approach</i> , extended abstract A18.	
<u>Kablar, Natasa A.</u>	Lola Institute, Belgrade, Serbia