

# **10th IFAC Workshop on Time Delay Systems 2012**

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**Editors:**

**Rifat Sipahi**

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## Content List of 10-th IFAC Workshop on Time Delay Systems

### Technical Program for Friday June 22, 2012

<b>FrAT1</b>	International Village	Woittennek, Frank	Tech. Univ. Dresden
<b>Stability and Stabilization</b> (Regular Session)		11:10-11:30	FrBT1.2
Chair: de Souza, Carlos E.	Lab. Nac. de Comp. Cientifica - LNCC	Low-Order Controller Design for Haptic Systems under Delayed Feedback, pp. 43-48.	
Co-Chair: Mondie, Sabine	CINVESTAV-IPN	Liacu, Bogdan	Supélec, Department of Automatic Control
08:30-08:50	FrAT1.1	Koru, Ahmet Taha	Bilkent Univ.
<i>An Improved Augmented Delay Partitioning Approach for the Stability of Time-Varying State-Delayed Systems</i> , pp. 1-6.		Ozbay, Hitay	Bilkent Univ.
Parlakci, Alpaslan	Istanbul Bilgi Univ.	Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
kucukdemiral, Ibrahim Beklan	Yildiz Tech. Univ.	Andriot, Claude	CEA, LIST
08:50-09:10	FrAT1.2	11:30-11:50	FrBT1.3
<i>New Results to Verify the Robust Stability Property of Interval Plants with Time-Delay</i> , pp. 7-12.		Yi, Sun	North Carolina A&T State Univ.
Romero-Galván, Gerardo	UAM Reynosa Rodhe, UAT	Nelson, Patrick	Univ. of Michigan
Zamora, Pedro Edén	MIEE, UAM Reynosa Rodhe, UAT	Ulsoy, A. Galip	Univ. of Michigan
Díaz-Rodríguez, Iván	Texas A&M Univ.	11:50-12:10	FrBT1.4
Perez, Irma	UAM Reynosa Rodhe, UAT	Avila Alonso, Jose Louis	INRIA
Lara Alabazares, David	Univ. Autonoma de Tamaulipas	Bonnet, Catherine	INRIA Saclay-Ile-de-France
09:10-09:30	FrAT1.3	Clairambault, Jean	INRIA
<i>Necessary Conditions for the Stability of One Delay Systems: A Lyapunov Matrix Approach</i> , pp. 13-18.		Ozbay, Hitay	Bilkent Univ.
Mondie, Sabine	CINVESTAV-IPN	Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
Cuvas, Carlos	CINVESTAV-IPN	Merhi, Faten	INSERM
Ramirez, Adrian	CINVESTAV-IPN	Tang, Ruoping	INSERM
Egorov, Alexey	St-Petersburg State Univ.	Marie, Jean-Pierre	INSERM
09:30-09:50	FrAT1.4	12:10-12:30	FrBT1.5
<i>Generalized Filippov Solution in Stability Analysis and Stabilization of Piecewise Continuous Time-Delay Systems</i> , pp. 19-24.		Nagahara, Masaaki	Kyoto Univ.
Zhang, Jiangyan	Sophia Univ.	Yamamoto, Yutaka	Kyoto Univ.
Shen, Tielong	Sophia Univ.	12:30-12:50	FrBT1.6
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<i>Stabilization of Quadratic Time-Delay Systems with a Guaranteed Region of Stability</i> , pp. 25-30.		Stankovic, Nikola	Supelec - CNRS
de Souza, Carlos E.	Lab. Nac. de Comp. Cientifica - LNCC	Stoican, Florin	NTNU (Norwegian Univ. of Science and Tech.)
Coutinho, Daniel	Univ. Federal de Santa Catarina	Olaru, Sorin	Supelec
10:10-10:30	FrAT1.6	Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
<i>Robust Stability and Constrained Stabilization of Discrete-Time Delay Systems</i> , pp. 31-36.			
Shafai, Bahram	Northeastern Univ.		
Sadaka, Hanai	Northeastern Univ.		
Ghadami, Rasoul	Northeastern Univ.		
<b>FrBT1</b>	International Village	<b>FrCT1</b>	International Village
<b>Applications, Modeling, and Control Design</b> (Regular Session)		<b>Input Shaping and Vibration Suppression</b> (Invited Session)	
Chair: Ozbay, Hitay	Bilkent Univ.	Chair: Vyhlidal, Tomas	Czech Tech. Univ. in Prague
Co-Chair: Bonnet, Catherine	INRIA Saclay-Ile-de-France	Co-Chair: Vaughan, Joshua	Georgia Tech.
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<i>Prediction-Free Tracking Control for Systems with Incommensurate Lumped and Distributed Delays: Two Examples</i> , pp. 37-42.		<i>Stability of Delayed Oscillators Subjected to Digital PD Control (I)</i> , pp. 73-78.	
Gehring, Nicole	Saarland Univ.	Lehotzky, David	Budapest Univ. of Tech. and Ec. Department of A
Rudolph, Joachim	Saarland Univ.	Insperger, Tamas	Budapest Univ. of Tech. and Ec.
14:50-15:10	FrBT1.2	<i>Effects of Input Shaping on Manual Tracking with Flexible and Time-Delayed System Dynamics (I)</i> , pp. 79-84.	

Potter, James Jackson	Georgia Inst. of Tech.
Singhose, William E.	Georgia Inst. of Tech.
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<i>Influence of Remote-Operation Time Delay on Crane Operator Performance (I)</i> , pp. 85-90.	
Vaughan, Joshua	
Peng, Kelvin Chen Chih	Georgia Tech.
Singhose, William E.	Georgia Inst. of Tech.
Seering, Warren	Massachusetts Inst. of Tech.
15:30-15:50	FrCT1.4
<i>Input Shapers with Uniformly Distributed Delays (I)</i> , pp. 91-96.	
Vyhidal, Tomas	Czech Tech. Univ. in Prague
Kucera, Vladimir	Czech Tech. Univ. in Prague, Faculty of Mechanical Engine
Hromcik, Martin	Czech Tech. Univ.
15:50-16:10	FrCT1.5
<i>The Homicidal Chauffeur Problem with Multiple Time Delayed Feedback (I)</i> , pp. 97-101.	
Gao, Qingbin	Univ. of Connecticut
Cepeda-Gomez, Rudy	Univ. of Connecticut
Olgac, Nejat	Univ. of Connecticut
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<i>A Practical PI Tuning Approach for Time Delay Systems</i> , pp. 102-107.	
Onat, Cem	Inonu Univ.
Hamamci, Serdar Ethem	Inonu Univ.
Obuz, Serhat	Clemson Univ.

**Technical Program for Saturday June 23, 2012**

<b>SaAT1</b>	International Village
<b>Analysis and Advanced Computation (Regular Session)</b>	
Chair: Ulsoy, A. Galip	Univ. of Michigan
Co-Chair: Gumussoy, Suat	The MathWorks
08:30-08:50	SaAT1.1
<i>Working with Time-Delay Systems in MATLAB</i> , pp. 108-113.	
Gumussoy, Suat	The MathWorks
Eryilmaz, Bora	The MathWorks, Inc.
Gahinet, Pascal	The MathWorks, Inc.
08:50-09:10	SaAT1.2
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Yi, Sun	North Carolina A&T State Univ.
Duan, Shiming	Univ. of Michigan
Nelson, Patrick	Univ. of Michigan
Ulsoy, A. Galip	Univ. of Michigan
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Nguyen, Le Ha Vy	INRIA Saclay-Ile-de-France
Fioravanti, André R.	Unicamp
Bonnet, Catherine	INRIA Saclay-Ile-de-France
09:30-09:50	SaAT1.4
<i>Spectral Analysis for Delay Differential-Algebraic Systems</i> , pp. 126-131.	
Boussaada, Islam	Lab. des Signaux et Systemes (L2S)
Michiels, Wim	K.U. Leuven
Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
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Li, Xu-Guang	ESIEE Paris and SUPELEC-CNRS
Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
Cela, Arben	UPE, ESIEE Paris
Wang, Honghai	Coll. of Information Science and Engineering, Northeastern University
Cai, Tiao-yang	Northeastern Univ.
10:10-10:30	SaAT1.6
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Li, Xu-Guang	ESIEE Paris and SUPELEC-CNRS
Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
Cela, Arben	UPE, ESIEE Paris
Wang, Honghai	Coll. of Information Science and Engineering, Northeastern University
Cai, Tiao-yang	Northeastern Univ.
<b>SaBT1</b>	International Village

**Spectral and Frequency Based Methods (Regular Session)**

Chair: Gören Sümer, Leyla	Istanbul Tech. Univ.
Co-Chair: Olgac, Nejat	Univ. of Connecticut
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Michiels, Wim	K.U. Leuven
Gumussoy, Suat	The MathWorks
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<i>Ultimate-Frequency Based Three-Pole Dominant Placement in Delayed PID Control Loop</i> , pp. 150-155.	
Zitek, Pavel	Czech Tech. Univ.
Fiser, Jaromir	Czech Tech. Univ. in Prague
Vyhliidal, Tomas	Czech Tech. Univ. in Prague
11:30-11:50	SaBT1.3
<i>Eigenvalue Assignment for Systems with Multiple Measurement Delays on Isolated Time Scales</i> , pp. 156-160.	
Sevim, Ufuk	Istanbul Tech. Univ.
Gören Sümer, Leyla	Istanbul Tech. Univ.
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<i>Periodized Characteristic Equation and Stability Analysis of LTI Systems with Several Delays</i> , pp. 161-166.	
Lampe, Bernhard P.	Univ. of Rostock
Rosenwasser, Efim N.	Marine Tech. Univ. of Saint Petersburg
12:10-12:30	SaBT1.5
<i>A Matrix Technique for Dominant Pole Placement of Discrete-Time Time-Delayed Systems</i> , pp. 167-172.	
Ergenc, Ali F.	Istanbul Tech. Univ.
<b>SaCT1</b>	International Village
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Chair: Olgac, Nejat	Univ. of Connecticut
Co-Chair: Orosz, Gabor	Univ. of Michigan
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Orosz, Gabor	Univ. of Michigan
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Qiao, Wei	Northeastern Univ.
Sipahi, Rifat	Northeastern Univ.
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<i>Exact Stability Analysis of a Second-Order Leaderless Consensus Protocol with Multiple Communication and Input Delays</i> , pp. 185-190.	
Cepeda-Gomez, Rudy	Univ. of Connecticut
Olgac, Nejat	Univ. of Connecticut
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<i>Stability Analysis of a Dynamical Model Representing Gene Regulatory Networks</i> , pp. 191-196.	
Ahsen, Mehmet Eren	Univ. of Texas at Dallas
Ozbay, Hitay	Bilkent Univ.
Niculescu, Silviu-Iulian	Lab. of Signals and Systems (L2S)
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*\$H\_{\infty}\$ Control Design for Novel Teleoperation System Scheme:  
A Discrete Approach*, pp. 197-202.

Zhang, Bo	LAGIS, Ec. Centrale de Lille
Kruszewski, Alexandre	Ec. Centrale de Lille
Richard, Jean-Pierre	Ec. Centrale de Lille

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16:10-16:30	SaCT1.6
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*Stabilization of Feedback Systems Via Distribution of Delays*, pp.  
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Gomez, Marcella M.	California Inst. of Tech.
Murray, Richard M.	California Inst. of Tech.

**Technical Program for Sunday June 24, 2012**

<b>SuAT1</b>	International Village	CINVESTAV-IPN IPICT
<b>Control Design Methods (Regular Session)</b>		
Chair: Ito, Hiroshi Co-Chair: Sipahi, Rifat	Kyushu Inst. of Tech. Northeastern Univ.	
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Gomoyunov, Mikhail	Inst. of Mathematics and Mechanics of the Ural Branch of the	Gielen, Rob H. Eindhoven Univ. of Tech.
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Kablar, Natasa A. Kvrgic, Vlada	Lola Inst. Lola Inst.	11:50-12:10 SuBT1.4
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<i>Decentralized liss Robustification of Interconnected Time-Delay Systems: A Small-Gain Approach, pp. 219-224.</i>		Seuret, Alexandre CNRS - INPG Gouaisbaut, Frederic LAAS CNRS
Ito, Hiroshi Pepe, Pierdomenico Jiang, Zhong-Ping	Kyushu Inst. of Tech. Univ. of L'Aquila Pol. Inst. of New York Univ.	12:10-12:30 SuBT1.5
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Nia, Payam Sipahi, Rifat	Northeastern Univ. Northeastern Univ.	12:30-12:50 SuBT1.6
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<i>Predictor-Based Robust Control of Uncertain Nonlinear Systems Subject to Input Delay, pp. 231-236.</i>		Unal, Hakkı Ulas Anadolu Univ. Iftar, Altug Anadolu Univ.
Obuz, Serhat Tatlicioglu, Enver Cekic, Sadettin Cagri Dawson, Darren M.	Clemson Univ. Izmir Inst. of Tech. Clemson Univ. Clemson Univ.	
10:10-10:30	SuAT1.6	
<i>Delay Estimation Algorithm for Nonlinear Time-Delay Systems with Unknown Inputs, pp. 237-241.</i>		
Barbot, Jean Pierre Zheng, Gang Floquet, Thierry Boutat, Driss Richard, Jean-Pierre	ENSEA INRIA Lille-Nord Europe CNRS Ensi de Bourges Ec. Centrale de Lille	
<b>SuBT1</b>	International Village	
<b>Advancements in System Theory (Regular Session)</b>		
Chair: Verriest, Erik I. Co-Chair: Rakovic, Sasa V.	Georgia Inst. of Tech. Univ. of Maryland	
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<i>State Space Realization for a Continuous Difference Equation with Varying Delay, pp. 242-247.</i>		
Verriest, Erik I.	Georgia Inst. of Tech.	
11:10-11:30	SuBT1.2	
<i>Critical Parameters of Integral Systems with a Class of Analytic Kernels, pp. 248-253.</i>		
Ochoa, Gilberto	Univ. Pol. del valle de Mexico	