Technical Program

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WeDPL Grand Ballroom

Plenary Session I: Yu-Chi Ho (Plenary Session)

Chair: Pao, Lucy Y. — Univ. of Colorado
Co-Chair: Speyer, Jason L. — Univ. of California at Los Angeles

08:00-09:00

*Optimization II - the Rise of Distributed Intelligence**

Ho, Yu-Chi — Harvard Univ.

WeA01 Commonwealth

Introduction to Micro and Nano-Scale Sensors, Actuators and Robots (Tutorial Session)

Chair: Sitti, Metin — Carnegie Mellon Univ.
Co-Chair: M'Closkey, Robert — Univ. of California at Los Angeles
Organizer: Sitti, Metin — Carnegie Mellon Univ.
Organizer: M'Closkey, Robert — Univ. of California at Los Angeles

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M'Closkey, Robert — Univ. of California at Los Angeles
Challoner, A. Dorian — Boeing Satellite Systems, Inc.

WeA02 Jefferson

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Chair: Scheeres, Daniel — The Univ. of Michigan
Co-Chair: Srinivasan, B. — Res. Associate

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Nagurka, Mark — Marquette Univ.
Yaniv, Oded — Tel-Aviv Univ.

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Banjerdpongchai, David — Chulalongkorn Univ.

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Srinivasan, B. — Res. Associate
Bonvin, Dominique — EPFL

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Penev, Borislav G. — Tech. Univ. of Sofia, Plovdiv Branch
Christov, Nicolai D. — Tech. Univ. of Sofia

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Hauksdottir, Anna Soffia — Univ. of Iceland

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Gao, Zhiqiang — Cleveland State Univ.

WeA03 Hampton A

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Chair: mosskull, henrik -

Co-Chair: Leyva, Ramon Esola Tecnica Superior d'Enginyeria Univ. Rovira i Virgili

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Queinnec, Isabelle LAAS-CNRS

Tarbouriech, Sophie LAAS-CNRS

Alonso, Corinne Centre National de la Recherche

Martinez-Salamero, Luis Escola Tecnica Superior d'Enginyeria Univ. Rovira i Virgili

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Stankovic, Alex M. Northeastern Univ.

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GHANES, Malek IRCCyN Ec. Centrale de Nantes

GIRIN, Alexis IRCCyN

SAHEB, Tarik GE44, CRTT,

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mosskull, henrik Bombardier Transportation, Sweden

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Zhang, Cheng-Jin Shandong Univ.

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Cai, Zhongqin Beijing Xuji Electric Corp. Ltd.

Cheng, Ximing Tsinghua Univ.

Ouyang, Minggao Tsinghua Univ.

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Chair: Grigoriadis, Karolos M. — Univ. of Houston
Co-Chair: Halevi, Yoram — Tech.

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Zhang, Guofeng — Northeastern Univ.
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Sreeram, Victor — Univ. of Western Australia

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Qiu, Li — Hong Kong Univ. of Sci. & Tech.

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Lohmann, Boris — Univ. of Bremen

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Halevi, Yoram — Tech.

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Xin, Xin — Okayama Prefectural Univ.
Sreeram, Victor — Univ. of Western Australia

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Co-Chair: Sun, Zongxuan — General Motors Corp.
Organizer: Tai, Meihua — Pol. Univ.
Organizer: Brennan, Sean — Penn State Univ.

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Stefanopoulou, A. G. — Univ. of Michigan
Kang, J.-M. — General Motors
Eng, J. A. — General Motors
Kuo, T.-W. — General Motors

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Meckl, Peter H. — Purdue Univ.

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Chen, Yaobin — Purdue School of Engr and Tech. IUPUI
Tian, Guangyu — Tsinghua Univ.
Wu, Hao — Tsinghua Univ.
Chen, Quanshi — Tsinghua Univ.

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Co-Chair: de Jager, Bram — Tech. Univ. Eindhoven

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Rabbath, Camille Alain — Defence Res. & Development Canada
Lahaie, Sylvain — Res. Inst. of Hydro-Quebec - LTE
Dostie, Michel — Res. Inst. of Hydro-Québec - LTE

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Co-Chair: Tugnait, Jitendra K. — Auburn Univ.

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Campos, Jose Carlos Teles — Univ. of Sao Paulo
Terra, Marco Henrique — Univ. of Sao Paulo

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Rengaswamy, Raghunathan — clarkson Univ.

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Doyle, Francis — Univ. of California at Santa Barbara

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Chen, Zhongzhou — Cleveland State Univ.

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Chair: Christofides, Panagiotis D. — Univ. of California at Los Angeles
Co-Chair: Soroush, Masoud — Drexel Univ.

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Bar, Nadav — Norwegian Univ. of Science & Tech.
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Bacic, Marko — Univ. of Oxford

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Chen, Tongwen — Univ. of Alberta
Shah, Sirish L. — Univ. of Alberta

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Chair: Armaou, Antonios — The Pennsylvania State Univ.
Co-Chair: Demetriou, Michael A. — Worcester Pol. Inst.
Organizer: Armaou, Antonios — The Pennsylvania State Univ.
Organizer: Demetriou, Michael A. — Worcester Pol. Inst.

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El-Farra, Nael H. — Univ. of California Los Angeles
Mhaskar, Prashant — Univ. of California Los Angeles
Christofides, Panagiotis D. — Univ. of California at Los Angeles

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Derby, Jeffrey J. — Univ. of Minnesota
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Rubloff, Garry — Univ. of Maryland
Henn-Lecordier, Laurent — Univ. of Maryland
Cai, Yuhong — Univ. of Maryland

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Co-Chair: Lyshevski, Sergey — Rochester Inst. of Tech.

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Bruni, Carlo — Univ. di Roma 'La Sapienza'
Greco, Aldo Virgilio — Univ. Cattolica del Sacro Cuore
Mingrone, Geltrude — Univ. Cattolica del Sacro Cuore

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Dunlop, Mary J. — Caltech
Del Vecchio, Domitilla — California Inst. of Tech.
Murray, Richard M. — California Inst. of Tech.
Dickinson, Michael H. — Caltech

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Ghosh, Bijoy — Washington Univ.
Martin, Clyde F. — Texas Tech. Univ.
Dayawansa, Wisesuriya P. — Texas Tech. Univ.

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Chair: Smith, S. Craig — Maxtor
Co-Chair: Tilbury, Dawn M. — Univ. of Michigan
Organizer: Smith, S. Craig — Maxtor
Organizer: Tilbury, Dawn M. — Univ. of Michigan

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Bauer, Peter H. — Notre Dame Univ.
Premaratne, Kamal — Univ. of Miami

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Tilbury, D. M. — Univ. of Michigan

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Asada, H. Harry — Massachusetts Inst. of Tech.

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Anwar, George — Integrated Motions
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Co-Chair: Dawson, Joel — -
Organizer: Lundberg, Kent — MIT

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Rodriguez, John I. — Talking Lights, LLC
Hinman, Roderick — Talking Lights, LLC
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Tam, Kimo — Analog Devices
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Denison, Tim — Analog Devices Inc.
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Lu, Timothy K.-T. — MIT
Sarpeshkar, Rahul — MIT

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Goodwin, Graham C. — The Univ. of Newcastle

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Co-Chair: Beard, Randal W. — Brigham Young Univ.

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Nersesov, Sergey G. — Georgia Inst. of Tech.

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Glad, S. Torkel — Linkoping Univ.

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Hu, Tingshu — Univ. of Virginia
Lin, Zongli — Univ. of Virginia

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Lin, Zongli — Univ. of Virginia

WeA14 Beacon Comp E

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Chair: Oliveira, Vilma A. — Univ. de Sao Paulo
Co-Chair: Tanaka, Kazuo — Univ. of Electro-Communications

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Wang, Xiaofan — Shanghai JiaoTong Univ.

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Guan, Xinping — Yanshan Univ.
Duan, Guang-Ren — Harbin Inst. of Tech.

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Co-Chair: Swevers, Jan — K. U. Leuven

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Whitacre, William — Virginia Tech.
Woolsey, Craig — Virginia Tech.

WeA16 Beacon Comp A

Dual Stage Actuators and Active Vibration Control for Disk Drives (Invited Session)

Chair: Horowitz, Roberto — Univ. of California at Berkeley
Co-Chair: Oboe, Roberto — Univ. of Trento
Organizer: Horowitz, Roberto — Univ. of California at Berkeley
Organizer: Oboe, Roberto — Univ. of Padova

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Chung, Chung Choo — Hanyang Univ.
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Nakagawa, Shinsuke — Hitachi, Ltd.
Numasato, Hidehiko — Hitachi Global Storage Tech. Japan, Ltd

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Tomizuka, Masayoshi — Univ. of California at Berkeley

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Shim, David Hyunchul — Univ. of California, Berkeley
Sun, Yu — Maxtor Corp.
Guo, Lin — Maxtor Corp.

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Nagamune, Ryozo — Royal Inst. of Tech.
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Hingwe, Pushkar — Hitachi Global Storage Tech. Inc.
Hirano, Toshiki — Hitachi Global Storage Tech. Inc.

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Chair: El-Farra, Nael H. — Univ. of California Los Angeles
Co-Chair: Hespanha, Joao P. — Univ. of California, Santa Barbara
Organizer: El-Farra, Nael H. — Univ. of California Los Angeles
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Geometric Programming Relaxations for Linear System Reachability (I), pp. 553-559
Yazarel, Hakan — Univ. of Pennsylvania
Pappas, George J. — Univ. of Pennsylvania

10:10-10:30
Stabilization of Switched Nonlinear Systems Using Predictive Control (I), pp. 560-565
Mhaskar, Prashant — Univ. of California at Los Angeles
El-Farra, Nael H. — Univ. of California at Los Angeles
Christofides, Panagiotis D. — Univ. of California at Los Angeles

10:30-10:50
Disturbance Attenuation in Classes of Uncertain Linear Hybrid Systems (I), pp. 566-571
Antsaklis, Panos J. — Univ. of Notre Dame
Lin, Hai — Univ. of Notre Dame

10:50-11:10
Communication Logics for Networked Control Systems (I), pp. 572-577
Xu, Yonggang — Univ. of California, Santa Barbara
Hespanha, Joao P. — Univ. of California, Santa Barbara

11:10-11:30
A Hybrid Predictive Control Approach for Output Feedback Stabilization of Constrained Linear Systems (I), pp. 578-583
El-Farra, Nael H. — Univ. of California at Los Angeles
Mhaskar, Prashant — Univ. of California at Los Angeles
Christofides, Panagiotis D. — Univ. of California at Los Angeles

WeA18 Beacon Comp B

Adaptive Control I (Regular Session)

Chair: Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
Co-Chair: Annaswamy, Anuradha — Massachusetts Inst. of Tech.

09:30-09:50
A Polynomial Adaptive Estimator for Nonlinearly Parameterized Systems, pp. 584-589
Cao, Chengyu — M.I.T
Annaswamy, Anuradha — Massachusetts Inst. of Tech.

09:50-10:10
Localized Adaptive Bounds for Online Approximation Based Control, pp. 590-595
Zhao, Yuanyuan — Univ. of California, Riverside
Farrell, Jay A. — Univ. of California at Riverside
Polycarpou, Marios M. — Univ. of Cincinnati

10:10-10:30
Extremum Seeking Control of Nonlinear Systems with Parametric Uncertainties and State Constraints, pp. 596-601
DeHaan, Darryl — Queen's Univ.
Guay, Martin — Queen's Univ.

10:30-10:50
On Direct Adaptive Control of a Class of Nonlinear Scalar Systems, pp. 602-603
Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
Melin, Alexander M — Unviersity of Missouri

10:50-11:10
Adaptive Control for Nonlinear Time-Delay Systems with Low Triangular Structure, pp. 604-608
Li, GuangWei — QingDao Univ. China
zang, chuanzhi — Yu haibin
Liu, Xiaoping — Northeastern Univ.

11:10-11:30
Robust Adaptive Control for a Class of Nonlinear Uncertain Neutral Delay Systems, pp. 609-613
Sun, Ximing — Northeastern Univ.
Zhao, Jun — Northeastern Univ.

WeA19 Beacon Comp H

Sliding Mode Control I (Regular Session)

Chair: Poznyak, Alexander S. CINVESTAV-IPN
Co-Chair: Hsu, Liu COPPE - Federal Univ. of Rio de Janeiro

09:30-09:50
Sliding Mode Extremum Seeking Control for Linear Quadratic Dynamic Game, pp. 614-619
Pan, Yaodong National Inst. of Advanced Industrial Science and Tech. (AIST)
Ozguner, Umit Ohio State Univ.

09:50-10:10
Decomposition of the Mini-Max Multimodel Optimal Problem Via Integral Sliding Mode Control, pp. 620-625
Fridman, Leonid M. National Autonomous Univ. of Mexico
Poznyak, Alexander S. CINVESTAV-IPN
Bejarano Rodriguez, Francisco Javier CINVESTAV

10:10-10:30
Minimum-Time Sliding Mode Control for Second-Order Systems, pp. 626-631
Iliev, Boyko Univ. of Oerebro
Kalaykov, Ivan Univ. of Oerebro

10:30-10:50
Analysis of Steady State Behavior of Second Order Sliding Mode Algorithms, pp. 632-637
Boiko, Igor SNC-Lavalin
Fridman, Leonid M. National Autonomous Univ. of Mexico
Iriarte, Rafael National Autonomous Univ. of Mexico

10:50-11:10
Globally Stable Output-Feedback Sliding Mode Control with Asymptotic Exact Tracking, pp. 638-643
Nunes, Eduardo Vieira Leao COPPE - Federal Univ. of Rio de Janeiro
Hsu, Liu COPPE - Federal Univ. of Rio de Janeiro
Lizarralde, Fernando Federal Univ. of Rio de Janeiro

11:10-11:30
Sliding Controller for Output Feedback of a Class of State Dependent Nonlinear Systems, pp. 644-649
Lin, Jwo Min COPPE UFRJ Federal Univ. of Rio de Janeiro

WeAS Independence Ballroom West

Systems Engineering of Systems Biology (Special Session)

Chair: Hoo, Karlene — Texas Tech. Univ.
Co-Chair: Hatzimanikatis, Vassily — Northwestern Univ.
Organizer: Lauffenburger, Douglas — MIT
Organizer: Iglesias, Pablo A. — Johns Hopkins Univ.
Organizer: Chan, Kris — Michigan State Univ.
Organizer: Christofides, Panagiotis D. — Univ. of California at Los Angeles
Organizer: Hammer, Daniel — Univ. Pennsylvania
Organizer: Hatzimanikatis, Vassily — Northwestern Univ.

WeNS Independence Ballroom East

The Female Faculty Candidate Interview (Special Session)

WeM01 Commonwealth

The Use of Time and Frequency Domain Methods in System Identification (Tutorial Session)

Chair: Ljung, Lennart — Linkoping Univ.
Co-Chair: Schoukens, Johan — Vrije Univ. Brussels
Organizer: Ljung, Lennart — Linkoping Univ.

13:30-14:30
State-Of-The-Art in Linear System Identification: Time and Frequency Domain Methods (I), pp. 650-660
Ljung, Lennart — Linkoping Univ.

14:30-14:50
Time Domain Identification, Frequency Domain Identification. Equivalencies! Differences? (I), pp. 661-666
Schoukens, Johan — Vrije Univ. Brussels
Pintelon, Rik M. — Vrije Univ. Brussels
Rolain, Yves J. — Vrije Univ. Brussels

14:50-15:10
Time-Domain Approaches to Continuous-Time Model Identification of Dynamical Systems from Sampled Data. (I), pp. 667-672
Garnier, Hugues — Univ. Henri Poincare, Nancy 1
Young, Peter C. — Lancaster Univ.

15:10-15:30
Subspace Methods for Frequency Domain Data (I), pp. 673-678
McKelvey, Tomas — Chalmers Univ. of Tech.

WeM02 Jefferson

Optimal Control II (Regular Session)

Chair: Grimble, Michael John — Univ. of Strathclyde
Co-Chair: Do Val, Joao B.R. — UNICAMP

13:30-13:50
Solutions of Optimal Feedback Control Problems with General Boundary Conditions Using Hamiltonian Dynamics and Generating Functions, pp. 679-684
Park, Chandeok — Univ. of Michigan
Scheeres, Daniel — Univ. of Michigan

13:50-14:10
Dynamic Interpolation on Riemannian Manifolds: An Application to Interferometric Imaging, pp. 685-690
Hussein, Islam I. — Univ. of Michigan
Bloch, Anthony M. — Univ. of Michigan

14:10-14:30
Infinite Horizon Robustly Stable Seismic Protection of Cable-Stayed Bridges Using Cost Cumulants, pp. 691-696
Pham, Khanh D. — Univ. of Notre Dame
Sain, Michael K. — Univ. of Notre Dame
Liberty, Stanley R. — Bradley Univ.

14:30-14:50
GMV and Restricted-Structure GMV Controller Performance Assessment - Multivariable Case, pp. 697-702
Majecki, Pawel — Univ. of Strathclyde
Grimble, Michael John — Univ. of Strathclyde

14:50-15:10
The LQ Control Problem for Markovian Jumps Linear Systems with Horizon Defined by Stopping Times, pp. 703-707
Nespoli, Cristiane — State Univ. of Campinas
Do Val, Joao B.R. — UNICAMP
Caceres, Yusef — UNICAMP- School of Eletrical And Computer Engineering

15:10-15:30
A Note on Some New Results on the Ergodic Control of Partially Observed Markov Chains, pp. 708-709
Hsu, Shun-Pin — National Chi-Nan Univ.
Arapostathis, Ari — The Univ. of Texas at Austin

WeM03	Hampton A
Motion Control (Regular Session)	
Chair: Kostic, Dragan	Tech. Univ. Eindhoven
Co-Chair: Schmidt, Peter B.	Rockwell Automation

13:30-13:50
Reducing the Effect of Load Torque Disturbances in Dual Inertia Systems with Lost Motion, pp. 710-715
Schmidt, Peter B. — Rockwell Automation
Rehm, Thomas J. — Rockwell Automation

13:50-14:10
On Motion Control Design and Tuning Techniques, pp. 716-721
Goforth, Frank — Cleveland State Univ.

14:10-14:30
Data-Based Design of High-Performance Motion Controllers, pp. 722-727
Kostic, Dragan — Tech. Univ. Eindhoven
de Jager, Bram — Tech. Univ. Eindhoven
Steinbuch, Maarten — Tech. Univ. Eindhoven

14:30-14:50
Input Shaping with Coulomb Friction Compensation on a Solder Cell Machine, pp. 728-733
Hekman, Keith — The American Univ. In Cairo
Singhose, William E. — Georgia Inst. of Tech.
Lawrence, Jason — Georgia Inst. of Tech.

14:50-15:10
High Bandwidth Fast Tool Servo Control, pp. 734-739
Lu, Xiaodong — MIT
Trumper, David — Massachusetts Inst. of Tech.

15:10-15:30
Precision Position Control of Ionic Polymer Metal Composite, pp. 740-745
Bhat, Nikhil — Pathway Tech.
Kim, Won-jong — Texas A&M Univ.

WeM04 Hampton B

Reduced Order Modelling (Regular Session)

Chair: Astrid, Patricia — Eindhoven Univ. of Tech.
Co-Chair: Tadmor, Gilead — Northeastern Univ.

13:30-13:50
Dynamic Estimation for Reduced Galerkin Models of Fluid Flows, pp. 746-751
Tadmor, Gilead — Northeastern Univ.
Noack, Bernd R — Tech. Univ. Berlin

13:50-14:10
Fixed Point Simulation Design Using Q-Markov Covariance Equivalent Realizations, pp. 752-757
Li, Faming — Univ. of California, San Diego
Skelton, Robert E. — Univ. of California at San Diego

14:10-14:30
Row by Row Structure Simplification, pp. 758-761
Yousefi, Amirhossein — Ph.D. Student
Lohmann, Boris — Univ. of Bremen
Buttelmann, Maik — Ph.D. Student

14:30-14:50
Fast Reduced Order Modeling Technique for Large Scale LTV Systems, pp. 762-767
Astrid, Patricia — Eindhoven Univ. of Tech.

14:50-15:10
Reduced-Order Adaptive Controller Design for Disdurbance Attenuation and Asymptotic Tracking for SISO Linear Systems with Noisy Output Measurements, pp. 768-773
Zhao, Qingrong — Univ. of Cincinnati
Pan, Zigang — Univ. of Cincinnati

15:10-15:30
On Model Reduction Using LMI's, pp. 774-779
Ebihara, Yoshio — Kyoto Univ.
Hagiwara, Tomomichi — Kyoto Univ.

WeM05 Exeter

Modeling and Control of Automated and Manually Driven Highways (Invited Session)

Chair: Horowitz, Roberto — Univ. of California at Berkeley
Co-Chair: Tai, Meihua — Pol. Univ.
Organizer: Tai, Meihua — Pol. Univ.
Organizer: Brennan, Sean — Penn State Univ.

13:30-13:50

A Practical Solution to the String Stability Problem in Autonomous Vehicle Following (I), pp. 780-785

Lu, Guang — Univ. of California at Berkeley
Tomizuka, Masayoshi — Univ. of California at Berkeley

13:50-14:10

Adaptive Throttle Controller Design Based on a Nonlinear Vehicle Model (I), pp. 786-791

Gao, Feng — Tsinghua Univ.
Li, Keqiang — Tsinghua Univ.
Lian, Xiaomin — Tsinghua Univ.
Wang, Jianqiang — Tsinghua Univ.

14:10-14:30

Vision-Based Lane Detection for Passenger Cars: Configuration Aspects (I), pp. 792-797

Huh, Kunsoo — Hanyang Univ.
Park, Jaehak — Hanyang Univ.
Hong, Daegun — Hanyang Univ.
Cho, Dongil — Seoul National Univ.
Park, Jahng Hyon — Hanyang Univ.

14:30-14:50

Methodological Calibration of the Cell Transmission Model (I), pp. 798-803

Munoz, Laura — Univ. of California at Berkeley
Sun, Xiaotian — Univ. of California at Berkeley
Sun, Dengfeng — Univ. of California, Berkeley
Gomes, Gabriel — Univ. of California at Berkeley
Horowitz, Roberto — Univ. of California at Berkeley

14:50-15:10

A Control Scheme for Automatic Path Tracking of Vehicles Subject to Wheel Slip Constraint, pp. 804-809

Peng, Shou-Tao — Southern Taiwan Univ. of Tech.
Sheu, Jer-Jia — Southern Taiwan Univ. of Tech.
Chang, Chau-Chin — Southern Taiwan Univ. of Tech.

15:10-15:30

Observer-Based Sensor Fault Detection and Identification with Application to Vehicle Lateral Control, pp. 810-815

Hsiao, Tesheng — Univ. of California at Berkeley
Tomizuka, Masayoshi — Univ. of California at Berkeley

WeM06 Dalton

Control of Fuel Cell Power Systems (Invited Session)

Chair: Varigonda, Subbarao — United Tech. Res. Center
Co-Chair: Brennan, Sean — Penn State Univ.
Organizer: Brennan, Sean — Penn State Univ.
Organizer: Varigonda, Subbarao — United Tech. Res. Center

13:30-13:50
Parameterization and Validation of a Lumped Parameter Diffusion Model for Fuel Cell Stack Membrane Humidity Estimation (I), pp. 816-821
McKay, Denise — Univ. of Michigan
Stefanopoulou, Anna G. — Univ. of Michigan

13:50-14:10
Modeling and Simulation of a PEM Fuel Cell Humidification System (I), pp. 822-827
Chen, Dongmei — Univ. of Michigan
Peng, Huei — Univ. of Michigan

14:10-14:30
Load Governor for Fuel Cell Oxygen Starvation Protection: A Robust Nonlinear Reference Governor Approach (I), pp. 828-833
Sun, Jing — Univ. of Michigan
Kolmanovsky, Ilya V. — Ford Motor Co.

14:30-14:50
Model Predictive Control for Starvation Prevention in a Hybrid Fuel Cell System (I), pp. 834-839
Vahidi, Ardalan — Univ. of Michigan
Stefanopoulou, Anna G. — Univ. of Michigan
Peng, Huei — Univ. of Michigan

14:50-15:10
Multivariable Control Design for the Water Gas Shift Reactor in a Fuel Processor (I), pp. 840-844
Varigonda, Subbarao — United Tech. Res. Center
Jonas, Eborn — United Tech. Res. Center
Bortoff, Scott A. — United Tech. Res. Center

15:10-15:30
Nonlinear Observer Design for Fuel Processing Reactors in Fuel Cell Power Systems (I), pp. 845-850
Gorgun, Haluk — Rensselaer Pol. Inst.
Arcak, Murat — Rensselaer Pol. Inst.
Varigonda, Subbarao — United Tech. Res. Center
Bortoff, Scott A. — United Tech. Res. Center

WeM07 Gardner A

System Identification (Regular Session)

Chair: Lacy, Seth L. — Air Force Res. Lab.
Co-Chair: Van den Hof, Paul M.J. — Delft Univ. of Tech.

13:30-13:50
Realization from Covariances and Markov Parameters of a Discrete-Time Periodic System, pp. 851-854
Colaneri, Patrizio — Pol. di Milano
Pinzoni, Stefano — Univ. of Padova

13:50-14:10
Subspace System Identification Using a Multichannel Lattice Filter, pp. 855-860
Chen, Neil — Univ. of California, Los Angeles
Gibson, J.S. — Univ. of California, Los Angeles

14:10-14:30
First-Order-Hold Sampling of Positive Real Systems and Subspace Identification of Positive Real Models, pp. 861-866
Hoagg, Jesse B. — Univ. of Michigan
Lacy, Seth L. — Air Force Res. Lab.
Erwin, Richard Scott — Space Vehicles Directorate
Bernstein, Dennis S. — Univ. of Michigan

14:30-14:50
Subspace Identification with Lower Bounded Modal Frequencies, pp. 867-872
Hoagg, Jesse B. — Univ. of Michigan
Lacy, Seth L. — Air Force Res. Lab.
Erwin, Richard Scott — Space Vehicles Directorate
Bernstein, Dennis S. — Univ. of Michigan

14:50-15:10
A Sampling-Based Approach to Nonparametric Dynamic System Identification and Estimation, pp. 873-879
Oh, Songhwai — Univ. of California at Berkeley
Kim, H. Jin — Univ. of California at Berkeley
Sastry, Shankar — Univ. of California at Berkeley

15:10-15:30
A Novel Method of Process Dead-Time Identification: Support Vector Machine Approach, pp. 880-884
ZHU, Hongdong — Shanghai Jiao Tong Univ.
Shao, Huihe — Shanghai Jiao Tong Univ.

WeM08 Gardner B

Linear Model Predictive Control II (Regular Session)

Chair: Singh, Leena — AIAA, IEEE
Co-Chair: Rossiter, J. Anthony — Univ. of Sheffield

13:30-13:50
Using Interpolation to Simplify Explicit Model Predictive Control, pp. 885-890
Rossiter, J. Anthony — Univ. of Sheffield
Grieder, Pascal — ETH , Zurich

13:50-14:10
Model Predictive Control Based Trajectory Optimization for Nap-Of-The-Earth (NOE) Flight Including Obstacle Avoidance, pp. 891-896
Lapp, Tiffany — Massachusetts Inst. of Tech.
Singh, Leena — Draper Lab.

14:10-14:30
Fuzzy Weighting Function Dependent RHC Design for TS Fuzzy Systems with Input Constraints, pp. 897-901
Jeong, Seung Cheol — Pohang Univ. of Science And Tech.
Choi, Doo Jin — Pohang Univ. of Sci. & Tech.
Park, PooGyeon — Pohang Univ. of Sci. & Tech.

14:30-14:50
Stable Trajectory Design for Highly Constrained Environments Using Receding Horizon Control, pp. 902-907
Kuwata, Yoshiaki — Massachusetts Inst. of Tech.
How, Jonathan P. — Massachusetts Inst. of Tech.

14:50-15:10
Adaptive Predictive Control with Neural Prediction for a Class of Nonlinear Systems with Time-Delay, pp. 908-913
Lu, Chi-Huang — National Chung-Hsing Univ.
Tsai, Ching-Chih — National Chung-Hsing Univ.

15:10-15:30
Closed-Loop Stochastic Model Predictive Control in a Receding Horizon Implementation on a Continuous Polymerization Reactor Example, pp. 914-919
Van Hessem, Dennis H. — Delft Univ. of Tech.
Bosgra, Okko H. — Delft Univ. of Tech.

WeM09 Clarendon

Simulation and Control of Multiscale Processes (Invited Session)

Chair: Armaou, Antonios — The Pennsylvania State Univ.
Co-Chair: Vlachos, Dion — Univ. of Delaware
Organizer: Armaou, Antonios — The Pennsylvania State Univ.
Organizer: Vlachos, Dion — Univ. of Delaware

13:30-13:50

*Coarse-Graining of Stochastic Processes and Associated Lattice Monte Carlo Simulations (I)**

Vlachos, Dion — Univ. of Delaware
Chatterjee, Abhijit — Univ. of Delaware,
Katsoulakis, Markos — Univ. of Massachusetts, Amherst

13:50-14:10

*Multiscale Modeling of Materials Processing and Function (I)**

Maroudas, Dimitrios — Univ. of Massachusetts, Amherst

14:10-14:30

A New Wavelet-Based Paradigm for Hierarchical Coarse-Graining Applied to Materials Modelling (I), pp. 920-925

Ismail, Ahmed E. — Massachusetts Inst. of Tech.
Rutledge, Gregory — Massachusetts Inst. of Tech.
Stephanopoulos, George — Massachusetts Inst. of Tech.

14:30-14:50

The Gaptooth Scheme, Patch Dynamics and Equation-Free Controller Design for Distributed Complex/ Multiscale Processes (I), pp. 926-932

Armaou, Antonios — The Pennsylvania State Univ.
Kevrekidis, Yannis — Princeton Univ.
Theodoropoulos, Constantinos — Univ. of Manchester Inst. of Science & Tech.

14:50-15:10

Continuous-Time Control of Distributed Processes Via Microscopic Simulations (I), pp. 933-939

Armaou, Antonios — The Pennsylvania State Univ.

15:10-15:30

Feedback Control of Surface Roughness of GaAs (001) Thin Films Using Kinetic Monte-Carlo Models, pp. 940-945

Lou, Yiming — Univ. of California, Los Angeles
Christofides, Panagiotis D. — Univ. of California at Los Angeles

WeM10 Berkeley

Biomedical Systems Analysis and Control (Invited Session)

Chair: Parker, Robert S. — Univ. of Pittsburgh
Co-Chair: Huzmezan, Mihai — Univ. of British Columbia
Organizer: Parker, Robert S. — Univ. of Pittsburgh
Organizer: Huzmezan, Mihai — Univ. of British Columbia

13:30-13:50
Utilizing Alternate Target Cells in Treating HIV Infection through Scheduled Treatment Interruptions (I), pp. 946-951
Zurakowski, Ryan — Univ. of California, Santa Barbara
Teel, Andrew R. — Univ. of California at Santa Barbara
Wodarz, Dominik — Univ. of California Irvine

13:50-14:10
Toward an Advisory System for Cesarean Section Spinal Anesthesia (I), pp. 952-957
Huzmezan, Mihai — Univ. of British Columbia/ United Tech. Res. Centre
Dumont, Guy A. — Univ. of British Columbia
Fung, Parry — Univ. of British Columbia
Ansermino, John Mark — Univ. of British Columbia
Kamani, Allaudin Ali — Univ. of British Columbia

14:10-14:30
Optimal Estimation Applications to Continuous Glucose Monitoring (I), pp. 958-962
Bequette, B. Wayne — Rensselaer Pol. Inst.

14:30-14:50
Assessment of Performance Limitations Due to Nonlinearity in the Model of a Human with Diabetes (I), pp. 963-968
Hernjak, Nicholas — Univ. of California, Santa Barbara
Doyle, Francis — Univ. of California at Santa Barbara

14:50-15:10
An MILP Approach to Cancer Chemotherapy Dose Regime Design (I), pp. 969-974
Harrold, John — Univ. of Pittsburgh
Parker, Robert S. — Univ. of Pittsburgh

15:10-15:30
Predictive Relay Control in Constrained Minimum-Time Delivery of Therapeutic Dose (I), pp. 975-975
Skliar, Mikhail — Univ. of Utah
Arora, Dhiraj — Univ. of Utah
Roemer, Robert — Univ. of Utah

WeM11 Fairfax A

Control and Estimation Methods in Network Security and Survivability (Invited Session)

Chair: Cabrera, Joao B. D. — Scientific Systems Company, Inc.
Co-Chair: Hespanha, Joao P. — Univ. of California, Santa Barbara
Organizer: Cabrera, Joao B. D. — Scientific Systems Company, Inc.
Organizer: Hespanha, Joao P. — Univ. of California, Santa Barbara

13:30-13:50
Geometry of Network Security (I), pp. 976-981
Jonckheere, Edmond A. — Univ. of Southern California
Lohsoonthorn, Poonsuk — Univ. of Southern California

13:50-14:10
User Profiling for Computer Security (I), pp. 982-987
Pepyne, David L. — Harvard Univ.
Gong, Wei-Bo — Univ. of Massachusetts at Amherst

14:10-14:30
Feasibility of Detecting TCP-SYN Scanning at a Backbone Router (I), pp. 988-995
Shah, Khushboo — Univ. of Southern California
Bohacek, Stephan — Univ. of Delaware
Broido, Andre — Univ. of California, San Diego

14:30-14:50
Temporal and Spatial Distributed Event Correlation for Network Security (I), pp. 996-1001
Jiang, Guofei — Dartmouth Coll.
Cybenko, George — Dartmouth Coll.

14:50-15:10
Quality of Information Measures for Autonomous Decision-Making (I), pp. 1002-1007
Prasanth, Ravi K. — Scientific Systems Co. Inc.
Cabrera, Joao B. D. — Scientific Systems Company, Inc.
Amin, Jayesh — Scientific Systems Company, Inc.
Mehra, Raman K. — Scientific Systems Co. Inc.
Smith, Robert — Air Vehicles Directorate

15:10-15:30
Distributed Change Detection for Worms, DDoS and Other Network Attacks (I), pp. 1008-1013
Cardenas, Alvaro A. — Univ. of Maryland
Baras, John S. — Univ. of Maryland
Ramezani, Vahid — Univ. of Maryland

Spacecraft Control (Regular Session)

Chair: Sanyal, Amit — Univ. of Michigan
Co-Chair: Woolsey, Craig — Virginia Tech.

13:30-13:50
Control of a Dumbbell Spacecraft Using Attitude and Shape Control Inputs Only, pp. 1014-1018
Sanyal, Amit — Univ. of Michigan
Shen, Jinglai — Univ. of Michigan
McClamroch, N. Harris — Univ. of Michigan

13:50-14:10
Passivity-Based Attitude Control for Integrated Power and Attitude Control Using Variable Speed Control Moment Gyroscopes, pp. 1019-1024
DeVon, David — Univ. of Illinois Urbana-Champaign
Fuentes, Robert — Boeing-SVS, Inc.
Fausz, Jerry — Air Force Res. Lab.

14:10-14:30
Asymptotic Stabilization of Motion about an Unstable Orbit: Application to Spacecraft Flight in Halo Orbit, pp. 1025-1030
Kulkarni, Jayant — Cornell Univ.
Campbell, Mark E. — Cornell Univ.

14:30-14:50
Structured Adaptive Model Inversion Control with Actuator Saturation Constraints Applied to Tracking Spacecraft Maneuvers, pp. 1031-1036
Tandale, Monish — Texas A&M Univ.
Subbarao, Kamesh — The Univ. of Texas, Arlington
Valasek, John — Texas A&M Univ.
Akella, Maruthi — The Univ. of Texas at Austin

14:50-15:10
Stationkeeping of an L2 Libration Point Satellite with Theta-D Technique, pp. 1037-1042
Xin, Ming — Univ. of Missouri-rolla
Dancer, Mike — Univ. of Missouri-Rolla
Balakrishnan, S.N. — Univ. of Missouri-Rolla
Pernicka, Henry — Univ. of Missouri-Rolla

15:10-15:30
*On the Constrained Attitude Control Problem**
Kim, Yoonsoo — Res. Assistant
Mesbahi, Mehran — Univ. of Washington
Singh, Gurkirpal — Jet Propulsion Lab.
Hadaegh, Fred Y. — California Inst. of Tech.

WeM13 Beacon Comp D

Nonlinear Stability II (Regular Session)

Chair: Lin, Zongli — Univ. of Virginia
Co-Chair: Hu, Tingshu — Univ. of Virginia

13:30-13:50
A Scaled Feedback Stabilization of Power Integrator Triangular Systems, pp. 1043-1048
Dacic, Dragan — Univ. of California Santa Barbara
Kokotovic, Petar V. — Univ. of California at Santa Barbara

13:50-14:10
Stabilization for Singular Bilinear Systems, pp. 1049-1054
Lu, Guoping — Nantong Inst. of Tech.
Ho, Daniel W. C. — City Univ. of Hong Kong
Zheng, Yufan — Univ. of Melbourne

14:10-14:30
Stability Criteria for Interconnected Iiss Systems and ISS Systems Using Scaling of Supply Rates, pp. 1055-1060
Ito, Hiroshi — Kyushu Inst. of Tech.

14:30-14:50
Hopf Bifurcation Control for Affine Systems, pp. 1061-1066
Verduzco, Fernando — Univ. de Sonora
Alvarez, Joaquin — CICESE

14:50-15:10
Control of Passive Systems Using the Satisficing Paradigm, pp. 1067-1072
Gouvea, Josiel — COPPE/Federal Univ. of Rio de Janeiro
Lizarralde, Fernando — COPPE/Federal Univ. of Rio de Janeiro
Beard, Randal W. — Brigham Young Univ.

15:10-15:30
Finite-Time Stabilization in the Large for Uncertain Nonlinear Systems, pp. 1073-1078
Huang, X. — Case Western Res. Univ.
Lin, Wei. — Case Western Res. Univ.
Yang, Bo — Case Western Res. Univ.

WeM14 Beacon Comp E

Fuzzy Logic Applications (Regular Session)

Chair: Wang, Hua O. — Boston Univ.
Co-Chair: Fadali, Mohammed Sami — Univ. of Nevada

13:30-13:50
Experiments of Fuzzy Lane Following for Mobile Robots, pp. 1079-1084
Antonelli, Gianluca — Univ. of Cassino
Chiaverini, Stefano — Univ. of Cassino

13:50-14:10
Design and Application of Fuzzy PSS for Power Systems Subject to Random Abrupt Variations of the Load, pp. 1085-1090
Arrifano, Natache S. D. — Univ. de Sao Paulo
Oliveira, Vilma A. — Univ. de Sao Paulo
Ramos, Rodrigo A. — Univ. Estadual do Oeste do Paraná

14:10-14:30
Adaptive Fuzzy Attitude Control of Satellite Based on Linearization, pp. 1091-1096
Guan, Ping — Beijing Inst. of Tech.
Liu, Xiangjie — Univ. Nacional Autonoma De Mexico
Felipe, L.R. — Univ. Nacional Autonoma De Mexico
Chen, Jiabin — Beijing Inst. of Tech.

14:30-14:50
Adaptive Fuzzy Control of MMA Batch Polymerization Reactor Based on Fuzzy Trajectory Definition, pp. 1097-1102
Solgi, Reza — Amirkabir Univ. of Tech.
Vosough, Rasoul — K.N.T. Univ. of Tech.
Rafizadeh, Mehdi — Amirkabir Univ. of Tech.

14:50-15:10
Fuzzy Gain Scheduling Attitude Control for Hydrofoil Catamaran, pp. 1103-1108
Ren, Junsheng — Dalian Maritime Univ.
Yang, Yansheng — Dalian Maritime Univ.

15:10-15:30
A Developed Method of Tuning PID Controllers with Fuzzy Rules for Integrating Processes, pp. 1109-1114
Zhang, Jianming — Zhejiang Univ.
Wang, Ning — Zhejiang Univ.
Wang, Shuqing — Zhejiang Univ.

WeM15 Beacon Comp F

Control of Mechanical Systems (Regular Session)

Chair: Patankar, Ravindra P. Michigan Tech. Univ.
Co-Chair: Kim, Won-jong Texas A&M Univ.

13:30-13:50
Intuitive Representation of Gain Schedulers to Facilitate Their Design and Tuning, pp. 1115-1120
Murphy, Bryan Boeing Co.
Kim, Won-jong Texas A&M Univ.

13:50-14:10
Comparison of Model and Non-Model Based Friction Compensation Techniques in the Neighbourhood of Pre-Sliding Friction, pp. 1121-1126
Swevers, Jan K. U. Leuven
Lampaert, Vincent K.U.Leuven, Div. PMA
Al-Bender, Farid K.U.Leuven, Div. PMA

14:10-14:30
Sensorless Speed Control of Induction Motors, pp. 1127-1132
Khalil, Hassan K. Michigan State Univ.
Strangas, Elias Michigan State Univ.

14:30-14:50
Robust Input-Output Decoupling Control for Induction Motors, pp. 1133-1134
Wang, Huangang Tsinghua Univ.
Xu, Wenli Tsinghua Univ.
Shen, Tielong Sophia Univ.
Yang, Geng Tsinghua Univ.

14:50-15:10
On Nonlinear Control of Induction Motors: Comparison of Two Approaches, pp. 1135-1140
Fekih, Afef Univ. of Louisiana at Lafayette
Chowdhury, Fahmida N. Univ. of Louisiana at Lafayette

15:10-15:30
Control of Hysteresis and Kinematic Error Nonlinearities in Harmonic Drives for High Speed Precision Control Applications, pp. 1141-1146
Gandhi, Prasanna S. Indian Inst. of Tech. Bombay
Ghorbel, Fathi H. Rice Univ.

WeM16 Beacon Comp A

Advanced Controls for Disk Drives (Invited Session)

Chair: Messner, William — Carnegie Mellon Univ.
Co-Chair: Oboe, Roberto — Univ. of Trento
Organizer: Messner, William — Carnegie Mellon Univ.
Organizer: Oboe, Roberto — Univ. of Padova

13:30-13:50

DAC Quantization Noise Reduction for Servo Control Systems in Hard Disk Drives (I), pp. 1147-1152

Lu, Wei-Min — Hitachi GST, Inc.
Wood, Roger — Hitachi GST, Inc.
Yu, Mantle — Hitachi GST, Inc.

13:50-14:10

Bandwidth Estimation of HDD Actuators Using Time Delay Identification (I), pp. 1153-1158

Semba, Tetsuo — Hitachi Global Storage Tech.
Huang, Fu-Ying — Hitachi Global Storage Tech.
White, Matthew T. — Hitachi Global Storage Tech.

14:10-14:30

Stretching Servo Performance on a Spin Stand (I), pp. 1159-1164

Feng, Lu — A*STAR Data Storage Inst. Singapore
Wong, Wai Ee — A*STAR Data Storage Inst. Singapore
Du, Chunling — A*STAR Data Storage Inst. Singapore
Duan, Chang — A*STAR Data Storage Inst. Singapore
Guo, Guoxiao — A*STAR Data Storage Inst. Singapore
Chong, Tow Chong — A*STAR Data Storage Inst. Singapore
Ye, Weichun — A*STAR Data Storage Inst. Singapore

14:30-14:50

Phase Stabilized Design of a Hard Disk Drive Servo Using the Complex Lag Compensator (I), pp. 1165-1170

Messner, William — Carnegie Mellon Univ.
Oboe, Roberto — Univ. of Padova

14:50-15:10

Adaptive-Q with Lqg Stabilizing Feedback and Real Time Computation for Disk Drive Servo Control (I), pp. 1171-1175

kalyanam, krishnamoorthy — UCLA
Tsao, Tsu-chin — UCLA

15:10-15:30

Nonlinear Control for Maneuvering Multiple Flexible Mode Systems (I), pp. 1176-1182

La-orpacharapan, Chanat — Univ. of Colorado, Boulder
Pao, Lucy Y. — Univ. of Colorado

WeM17 Beacon Comp G

Complexity Issues in Hybrid Systems (Regular Session)

Chair: Tomlin, Claire J. — Stanford Univ.
Co-Chair: Baczynski, Jack — Lab. Nacional de Computacao Cientifica - LNCC

13:30-13:50
Reachability Analysis of Hybrid Control Systems Using Reduced-Order Models, pp. 1183-1189
Han, Zhi — Carnegie Mellon Univ.
Krogh, Bruce H. — Carnegie Mellon Univ.

13:50-14:10
Optimal Complexity Reduction of Piecewise Affine Models Based on Hyperplane Arrangements, pp. 1190-1195
Geyer, Tobias — Swiss Federal Inst. of Tech.
Torrisi, Fabio Danilo — Swiss Federal Inst. of Tech.
Morari, Manfred — Swiss Federal Inst. of Tech.

14:10-14:30
Low Complexity Control of Piecewise Affine Systems with Stability Guarantee, pp. 1196-1201
Grieder, Pascal — ETH , Zurich
Kvasnica, Michal — ETH Zurich
Baotic, Mato — ETH - Swiss Federal Inst. of Tech.
Morari, Manfred — Swiss Federal Inst. of Tech.

14:30-14:50
Aggregation-Based Approaches to Honey-Pot Searching with Local Sensory Information, pp. 1202-1207
DasGupta, Bhaskar — UIC
Hespanha, Joao P. — Univ. of California, Santa Barbara
Sontag, Eduardo — Rutgers Univ.

14:50-15:10
A New Algorithm for Translating MLD Systems into PWA Systems, pp. 1208-1213
Villa, Jose-Luis — Ec. des Mines de Nantes
Duque, Mauricio — Univ. de los Andes
Gauthier, Alain — Univ. de los Andes
Rakoto-Ravalontsalama, Naly — Ec. des Mines de Nantes

15:10-15:30
Utilizing the Structure of Safety Properties to Aid in the Verification of Hybrid Controllers, pp. 1214-1220
Neogi, Natasha A. — Univ. of Illinois, Urbana-Champaign

WeM18 Beacon Comp B

Adaptive Control II (Regular Session)

Chair: Leonessa, Alexander — Univ. of Central Florida
Co-Chair: Chen, Shuhao — Univ. of Michigan

13:30-13:50

Comparison of Logic-Based Switching Control Designs for a Nonlinear System, pp. 1221-1222

Freidovich, Leonid B. — Michigan State Univ.
Khalil, Hassan K. — Michigan State Univ.

13:50-14:10

Transient Performance, Resetting and Filtering in Nonlinear Multiple Model Adaptive Control, pp. 1223-1228

Hansen, Jostein — PhD student
Johansen, Tor Arne — Norweigian Univ. of Science & Tech.

14:10-14:30

Adaptive Rejection of Periodic Disturbances for a Class of Nonlinearly Parametrized Systems, pp. 1229-1234

Sun, Mingxuan — National Univ. of Singapore
Ge, Shuzhi Sam — National Univ. of Singapore

14:30-14:50

Direct Adaptive Control of Nonnegative and Compartmental Dynamical Systems with Time Delay, pp. 1235-1240

Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
Haddad, Wassim M. — Georgia Inst. of Tech.
Ramakrishnan, Jayanthy — Univ. of Missouri, Columbia
Hayakawa, Tomohisa — Kyoto Univ.

14:50-15:10

Adaptive Control of Linear Time Delay Systems, pp. 1241-1246

Mirkin, Boris — Tech. Inst. of Tech.
Gutman, Per-Olof — Tech. Inst. of Tech.

15:10-15:30

Adaptive Harmonic Steady State Control for Disturbance Rejection, pp. 1247-1252

Chandrasekar, Jaganath — Univ. of Michigan
Liu, Li — Univ. of Michigan
Patt, Daniel — Univ. of Michigan
Friedmann, Peretz P. — Univ. of Michigan
Bernstein, Dennis S. — Univ. of Michigan

WeM19 Beacon Comp H

Sliding Mode Control II (Regular Session)

Chair: Pan, Yaodong — Tokyo Denki Univ.
Co-Chair: Braatz, Richard D. — Univ. of Illinois at Urbana-Champaign

13:30-13:50
Analysis of Modes of Oscillations in a Relay Feedback System, pp. 1253-1258
Boiko, Igor — SNC-Lavalin

13:50-14:10
Robust Synchronization of a Class of Nonlinear Systems, pp. 1259-1264
Rosas, David Isaias — Univ. Autonoma de Baja California
Alvarez, Joaquin — CICESE

14:10-14:30
Hierarchical Intelligent Sliding Mode Control: Application to Stepper Motors, pp. 1265-1270
Rincon, Bernardo — CINVESTAV; Unidad Guadalajara
Loukianov, Alexander G. — CINVESTAV
Sanchez, Edgar N. — CINVESTAV

14:30-14:50
Analysis and Design of 1-Bit Noise-Shaping Quantizer Using Variable Structure Control Approach, pp. 1271-1276
Hu, Jwu-Sheng — National Chiao Tung Univ.
Yu, Shiang-Hwua — National Chiao Tung Univ.

14:50-15:10
Maneuvering Dynamical Systems by Sliding-Mode Control, pp. 1277-1282
Skjetne, Roger — Norwegian Univ. of Science And Tech.
Teel, Andrew R. — Univ. of California, Santa Barbara

15:10-15:30
A Sliding Control Approach to Underactuated Multibody Systems, pp. 1283-1288
Ashrafiuon, Hashem — Villanova Univ.
Erwin, R. Scott — AFRL/VS

WeMI Back Bay Ballroom D

Hardware and Software for Control Education (Interactive Session)

Chair: Lundberg, Kent — MIT
Co-Chair: Schoenwald, David A. — Sandia National Lab.

13:30-15:30
Three-Dimensional Visualization of Nichols, Hall, and Robust-Performance Diagrams (I), pp. 1289-1294
Lundberg, Kent — MIT
Malchano, Zachary — MIT

13:30-15:30
An Agent-Based Simulation Laboratory for Economics and Infrastructure Interdependency (I), pp. 1295-1300
Schoenwald, David A. — Sandia National Lab.
Barton, Dianne — Sandia National Lab.
Ehlen, Mark — Sandia National Lab.

13:30-15:30
Gain Hands-On Experience in Process Control Using Control Station (I), pp. 1301-1306
Cooper, Douglas J. — Univ. of Connecticut
Rice, Robert — Univ. of Connecticut
Arbogast, Jeffrey — UConn

13:30-15:30
Development of a Discrete Event Dynamic Systems Curriculum Using a Web-Based "Real-Time" Simulated Factory (I), pp. 1307-1307
Cassandras, Christos G. — Boston Univ.
Deng, Meimei — Boston
Hu, Jian-Qiang — Boston Univ.
Vakili, Pirooz — Boston Univ.
Zhao, Chenming — Boston Univ.
Panayiotou, Christos — Univ. of Cyprus

13:30-15:30
Low-Cost Magnetic Levitation Project Kits for Teaching Feedback System Design (I), pp. 1308-1313
Lilienkamp, Katherine — MIT
Lundberg, Kent — MIT

13:30-15:30
An Open-Ended Ball-Balancing Laboratory Project for Undergraduates (I), pp. 1314-1318
Rosales, Evencio — MIT
Ito, Bennett — MIT
Lilienkamp, Katherine — MIT
Lundberg, Kent — MIT

13:30-15:30
Take-Home Lab Kits for System Dynamics and Controls Courses (I), pp. 1319-1322
Durfee, William — Univ. of Minnesota
Li, Perry Y. — Univ. of Minnesota
Waletzko, David — Univ. of Minnesota

13:30-15:30
RemoteLab – an E-Mail Based On-Line Control Experiment Service (I), pp. 1323-1328
Cheng, Hung-Ming — Student
Chiu, George T.-C. — Purdue Univ.
Peng, Huei — Univ. of Michigan

13:30-15:30
Internet-Based Remote Control Using a Microcontroller and an Embedded Ethernet (I), pp. 1329-1334
Ahmed, Imran — Pol. Univ.
Wong, Hong — Pol. Univ.
Kapila, Vikram — Pol. Univ.

13:30-15:30
Minimum-Time Swing-Up of a Rotary Inverted Pendulum by Iterative Impulsive Control (I), pp. 1335-1340
Wang, Zhongmin — Utah State Univ.
Chen, YangQuan — Utah State Univ.
Fang, Ning — Utah State Univ.

WeMS Independence Ballroom West

Summary of the NSF Workshop on Control and System Integration of Micro and Nano-Scale Systems (Special Session)

Chair: Baheti, Kishan — National Science Foundation
Co-Chair: Tomizuka, Masayoshi — UC Berkleley/NSF

WeP01 Commonwealth

Theory vs. Practice Forum (Tutorial Session)

Chair: Gao, Zhiqiang — Cleveland State Univ.
Co-Chair: Rhinehart, R. Russell — Oklahoma State Univ.
Organizer: Gao, Zhiqiang — Cleveland State Univ.
Organizer: Rhinehart, R. Russell — Oklahoma State Univ.

16:00-16:00
Theory vs. Practice: The Challenges from Industry (I), pp. 1341-1349
Gao, Zhiqiang — Cleveland State Univ.
Rhinehart, R. Russell — Oklahoma State Univ.

16:00-16:12
*Theory vs. Practice: More Than Just Applied Research (I)**
Bay, John — DARPA

16:12-16:24
The Practice of Industrial Logic Design (I), pp. 1350-1355
Tilbury, Dawn M. — Univ. of Michigan
Lucas, Morrison R. — Raytheon, Inc.

16:24-16:36
*Product End-Use Characteristics Control for Reactive Extrusion Processes (I)**
Ogunnaike, Babatunde A. — Univ. of Delaware

16:36-16:48
*Motion/Drive Control in Web Industry (I)**
Schmidt, Peter B. — Rockwell Automation

16:48-17:00
*Vehicle Health Management (I)**
Gorinevsky, Dimitry — Honeywell Inc.

17:00-17:12
*Abnormal Situation Management in Steel Industry (I)**
Dudzic, Michael — Dofasco, Inc.

17:12-17:24
*Implementation of Advanced Algorithms in Modern DSP Chips (I)**
Fedigan, Stephen J. — Texas Inst.

17:24-18:00
*Panel Discussion (I)**
Gao, Zhiqiang — Cleveland State Univ.
Rhinehart, R. Russell — Oklahoma State Univ.

WeP02 Jefferson

Linear Parameter Varying Systems (Regular Session)

Chair: Wu, Fen — North Carolina State Univ.
Co-Chair: Rogers, Eric — Univ. of Southampton

16:00-16:20
Nonlinear Compensator Synthesis Via Linear Parameter-Varying Control, pp. 1356-1361
Lawrence, Douglas A. — Ohio Univ.
Sznaier, Mario — Penn State Univ.

16:20-16:40
A New Solution Approach to Polynomial LPV System Analysis and Synthesis, pp. 1362-1367
Wu, Fen — North Carolina State Univ.
Prajna, Stephen — California Inst. of Tech.

16:40-17:00
Filter Design for LPV Systems Using Biquadratic Lyapunov Functions, pp. 1368-1373
Sato, Masayuki — Japan Aerospace Exploration Agency

17:00-17:20
Linear Parameter-Varying Descriptions of Nonlinear Systems, pp. 1374-1379
Bruzelius, Fredrik — Chalmers Univ. of Tech.
Pettersson, Stefan — Chalmers Univ. of Tech.
Breitholtz, Claes — Chalmers Univ. of Tech.

17:20-17:40
Hysteresis Compensation Using LPV Gain-Scheduling, pp. 1380-1385
Mehendale, Charudatta — Univ. of Houston
Grigoriadis, Karolos M. — Univ. of Houston

17:40-18:00
H_infty Control of Differential Linear Repetitive Processes, pp. 1386-1391
Paszke, Wojciech — Univ. of Zielona Gora
Galkowski, Krzysztof — Univ. of Zielona Gora
Rogers, Eric — Univ. of Southampton
Owens, David H. — The Univ. of Sheffield

WeP03 Hampton A

Manufacturing and Process Control (Regular Session)

Chair: Leva, Alberto — Pol. di Milano
Co-Chair: Mao, Ziqiang John — Intel

16:00-16:20
Adaptive Modeling and H_infty Control for Photolithography Manufacturing Process, pp. 1392-1393
Kang, Wei — Naval Postgraduate School
Mao, Ziqiang John — Intel

16:20-16:40
Kinematic Calibration on a Parallel Kinematic Machine Tool of the Stewart Platform by Circular Tests, pp. 1394-1399
Ibaraki, Soichi — Kyoto Univ.
Yokawa, Takeshi — Kyoto Univ.
Kakino, Yoshiaki — Kyoto Univ.
Nakagawa, Masao — Okuma Corp.
Matsushita, Tetsuya — Okuma Corp.

16:40-17:00
Autotuning Process Controller with Enhanced Load Disturbance Rejection, pp. 1400-1405
Leva, Alberto — Pol. di Milano

17:00-17:20
Neural Network Modeling and Control of Cold Flow Circulating Fluidized Bed, pp. 1406-1411
Koduru, Praveen — Yale Univ.
Davari, Asad — WVU Tech.
Shadle, Lawrence — NETL
Lawson, Larry — NETL

17:20-17:40
Scheduling a Two-Stage No-Wait Hybrid Flowshop with Separated Setup and Removal Times, pp. 1412-1416
Chang, Junlin — Shanghai Jiaotong Univ.
Yan, Weiwu — Shanghai Jiaotong Univ.
Shao, Huihe — Shanghai Jiao Tong Univ.

17:40-18:00
Synthesis of an Event Based Supervisor for Deadlock Avoidance in Semiconductor Manufacturing Systems, pp. 1417-1421
Zhang, Wenle — Ohio Univ.
Mao, Ziqiang John — Intel

WeP04 Hampton B

Stability of Linear Systems (Regular Session)

Chair: Haddad, Wassim M. — Georgia Inst. of Tech.
Co-Chair: Yedavalli, Rama K. — Ohio State Univ.

16:00-16:20
Stability Theory for Nonnegative and Compartmental Dynamical Systems with Time Delay, pp. 1422-1427
Haddad, Wassim M. — Georgia Inst. of Tech.
Chellaboina, VijaySekhar — Univ. of Missouri- Columbia

16:20-16:40
A New Passivity Property of Linear RLC Circuits with Application to Power Shaping Stabilization, pp. 1428-1433
Garcia-Canseco, Eloisa — LSS-SUPELEC
Ortega, Romeo — LSS-SUPELEC

16:40-17:00
A Note on Asymptotic Stabilization of Linear Systems by Periodic, Piecewise Constant, Output Feedback, pp. 1434-1439
Wong, H.P. — Imperial Coll.
Astolfi, Alessandro — Imperial Coll.

17:00-17:20
Finite-Time Stability of Discrete-Time Systems, pp. 1440-1444
Amato, Francesco — Univ. degli Studi Magna Graecia di Catanzaro
Carbone, Marco — Univ. Mediterranea di Reggio Calabria
Ariola, Marco — Univ. degli Studi di Napoli Federico II
Cosentino, Carlo — Univ. degli Studi di Napoli Federico II

17:20-17:40
Stability Check of Matrix Families: How and Why Vertex Solution for Multiple Vertex Case Is Different from Two Vertex Case, pp. 1445-1450
Yedavalli, Rama K. — Ohio State Univ.

17:40-18:00
A New Approach to the Design of Dynamic Output Feedback Stabilizers for LTI Systems, pp. 1451-1456
Son, Young I. — Myongji Univ.
Shim, Hyungbo — Seoul National Univ.
Jo, Nam H. — Soongsil Univ.
Kim, Kab-Il — Myongji Univ.

WeP05 Exeter

Vehicle Dynamics and Control (Regular Session)

Chair: Canudas de Wit, Carlos — ENSIEG-INPG
Co-Chair: Zheng, Bing — Visteon Corp.

16:00-16:20
A LuGre Tire Friction Model with Exact Aggregate Dynamics, pp. 1457-1462
Tsiotras, Panagiotis — Georgia Inst. of Tech.
Velenis, Efstathios — Georgia Inst. of Tech.
Sorine, Michel — INRIA

16:20-16:40
Nonlinear Control Design for Implementation of Specific Pedal Feeling in Brake-By-Wire Car Design Concepts, pp. 1463-1468
Hildebrandt, Alexander — Tech. Univ. Ilmenau
Sawodny, Oliver — Tech. Univ. Ilmenau
Trutschel, Ralf — Tech. Univ. Ilmenau
Augsburg, Klaus — Tech. Univ. Ilmenau

16:40-17:00
Combining Active Steering and Independent Wheels Braking for CIVIC Lateral Assistance, pp. 1469-1474
Mammar, Said — INRETS

17:00-17:20
Active Steering Control with Front Wheel Steering, pp. 1475-1480
Zheng, Bing — Visteon Corp.
Oh, Pahngroc — Visteon Corp.
Lenart, Barry — Visteon Corp.

17:20-17:40
Design and Experimental Validation of a Linear Robust Controller for an Active Suspension of a Quarter Car, pp. 1481-1486
Lauwerys, Christophe — Katholieke Univ. Leuven
Swevers, Jan — Katholieke Univ. Leuven
Sas, Paul — Katholieke Univ. Leuven

17:40-18:00
An LMI Based Model Predictive Control Scheme with Guaranteed H_infty Performance and Its Application to Active Suspension, pp. 1487-1492
Chen, Hong — Jilin Univ. Campus NanLing
Scherer, Carsten W. — Delft Univ. of Tech.

WeP06 Dalton

Imaging and Visual Servo Control (Regular Session)

Chair: Barchers, Jeffrey D. — Science Applications International Corp.
Co-Chair: Fu, Li-Chen — National Taiwan Univ.

16:00-16:20
Modeling of Laser Beam Control Systems Using Projections Onto Constraint Sets (I), pp. 1493-1498
Barchers, Jeffrey D. — Science Applications International Corp.

16:20-16:40
Bayesian Statistical Approaches to Tracking through Turbulence (I), pp. 1499-1503
fitzpatrick, ben — Loyola Marymount Univ.
mccanless, sarah — Tempest Tech. LLC
wang, yun — Tempest Tech. LLC

16:40-17:00
Setpoint Regulation of Continuum Robots Using a Fixed Camera, pp. 1504-1509
Chitrakaran, Vilas K. — Clemson Univ.
Behal, A. — Clarkson Univ.
Dawson, Darren M. — Clemson Univ.
Walker, Ian D. — Clemson Univ.

17:00-17:20
Immersion and Invariance Adaptive Visual Servoing of Manipulators with Uncertain Dynamics, pp. 1510-1515
Zachi, Alessandro Rosa Lopes — COPPE/UFRJ
Hsu, Liu — COPPE - Federal Univ. of Rio de Janeiro
Ortega, Romeo — LSS-SUPELEC
Lizarralde, Fernando — Federal Univ. of Rio de Janeiro

17:20-17:40
A Robust Visual Servo System for Tracking an Arbitrary-Shaped Object by a New Active Contour Method, pp. 1516-1521
Chen, Pei-ying — National Taiwan Univ.
Huang, Cheng-Ming — NATIONAL TAIWAN Univ.
Fu, Li-Chen — National Taiwan Univ.

17:40-18:00
Passivity-Based Dynamic Visual Feedback Control for Three Dimensional Target Tracking: Stability and L2-Gain Performance Analysis, pp. 1522-1527
Kawai, Hiroyuki — Kanazawa Univ.
Fujita, Masayuki — Kanazawa Univ.

WeP07 Gardner A

Applications of Observer Design (Regular Session)

Chair: Saberi, Ali — Washington State Univ.
Co-Chair: Asada, H. Harry — Massachusetts Inst. of Tech.

16:00-16:20
A GES Mass Flow Observer for Compression Systems: Design and Experiments, pp. 1528-1533
Břhagen, Bjřrnar — Norwegian Univ. of Science And Tech.
Stene, Olav — Norwegian Univ. of Science And Tech.
Gravdahl, Jan Tommy — Norwegian Univ. of Science & Tech.

16:20-16:40
Nonlinear Observer Design for Two-Phase Flow Heat Exchangers of Air Conditioning Systems, pp. 1534-1539
Cheng, Tao — Massachusetts Inst. of Tech.
He, Xiang-Dong — Massachusetts Inst. of Tech.
Asada, H. Harry — Massachusetts Inst. of Tech.

16:40-17:00
Observer Based Diagnosis of Roll Rate Sensor, pp. 1540-1545
Arndt, Marc — Univ. of Apllied Sciences Gelsenkirchen
Ding, E.L. — Univ. of Applied Sciences Gelsenkirchen
Massel, Thomas — Univ. of Applied Sciences

17:00-17:20
An Intrinsic Observer for a Class of Simple Mechanical Systems on a Lie Group, pp. 1546-1551
Maithripala, D. H. S. — Texas Tech. Univ.
Berg, Jordan M. — Texas Tech. Univ.
Dayawansa, Wijesuriya P. — Texas Tech. Univ.

17:20-17:40
Observer Design for Gas Lifted Oil Wells, pp. 1552-1557
Aamo, Ole Morten — NTNU
Eikrem, Gisle Otto — Norwegian Univ. of Science and Tech.
Siahaan, Hardy B. — Norwegian Univ. of Science and Tech.
Foss, Bjarne A. — Norwegian Univ. of Science & Tech.

17:40-18:00
Barocalorimetric Estimation of Emulsion Copolymerization Reactors, pp. 1558-1562
Infante Martínez, José Ramiro — Centro de Investigación en Química Aplicada
Villarreal Cárdenas, Luis Alberto — Centro de Investigación en Química Aplicada
Alvarez Calderón, Jesús — Univ. Autónoma Metropolitana Iztapalapa

WeP08 Gardner B

Linear Model Predictive Control III (Regular Session)

Chair: Grimble, Michael John — Univ. of Strathclyde
Co-Chair: Kothare, Mayuresh V. — Lehigh Univ.

16:00-16:20
State-Dependent Riccati Equation Control with Predicted Trajectory, pp. 1563-1568
Dutka, Arkadiusz S. — Univ. of Strathclyde
Grimble, Michael John — Univ. of Strathclyde

16:20-16:40
State Estimation and the Equivalence of the Regulatory and Supervisory Predictive Control Law, pp. 1569-1574
Uduehi, Damien — Univ. of Strathclyde
Ordys, Andrzej W. — Univ. of Strathclyde
Grimble, Michael — Univ. of Strathclyde

16:40-17:00
A Model Predictive Controller for Multirate Cascade Systems, pp. 1575-1579
LING, Keck-Voon — Nanyang Tech. Univ.
WU, Bingfang — Nanyang Tech. Univ.
HE, Minghua — Nanyang Tech. Univ.
ZHANG, Yu — Nanyang Tech. Univ.

17:00-17:20
Robust Stability Constrained Model Predictive Control, pp. 1580-1585
Cheng, Xu — Emerson Process Management Power and Water Solutions
Jia, Dong — Carnegie Mellon Univ.

17:20-17:40
Two Level Model Predictive Control for the Maximum Control Invariant Set, pp. 1586-1591
Grieder, Pascal — ETH , Zurich
Wan, Zhaoyang — Lehigh Univ.
Kothare, Mayuresh V. — Lehigh Univ.
Morari, Manfred — Swiss Federal Inst. of Tech.

17:40-18:00
Optimal Control Synthesis of a Class of Nonlinear Systems Using Single Network Adaptive Critics, pp. 1592-1597
Padhi, Radhakant — Univ. of Missouri - Rolla
Unnikrishnan, Nishant — ASME
Balakrishnan, S.N. — Univ. of Missouri-Rolla

WeP09 Clarendon

Control and Optimization of Large Scale Complex Systems: Lumped and Distributed Parameter Systems (Invited Session)

Chair: Demetriou, Michael A. — Worcester Pol. Inst.
Co-Chair: Grigoriadis, Karolos M. — Univ. of Houston
Organizer: Demetriou, Michael A. — Worcester Pol. Inst.

16:00-16:20
Optimal Beaver Population Control Using a Reduced-Order Distributed Parameter Model and Single Network Adaptive Critics (I), pp. 1598-1603
Padhi, Radhakant — Univ. of Missouri-Rolla
Balakrishnan, S.N. — Univ. of Missouri - Rolla

16:20-16:40
Collocated Actuator Placement in Structural Systems Using an Analytical Bound Approach (I), pp. 1604-1609
Demetriou, Michael A. — Worcester Pol. Inst.
Grigoriadis, Karolos M. — Univ. of Houston

16:40-17:00
Discrete Verification of Necessary Conditions for Switched Nonlinear Optimal Control Systems (I), pp. 1610-1615
Ross, I. Michael — Naval Postgraduate School
Fahroo, Fariba — Naval Postgraduate School

17:00-17:20
An Approach to the Optimal Scanning Measurement Problem Using Optimum Experimental Design (I), pp. 1616-1621
Ucinski, Dariusz — Univ. of Zielona Gora
Demetriou, Michael A. — Worcester Pol. Inst.

17:20-17:40
Direct Transcription Solution of Inequality Constrained Optimal Control Problems (I), pp. 1622-1626
Betts, John T. — Boeing Corp.
Campbell, Stephen L — North Carolina State Univ.
Engelsone, Anna — North carolina State Univ.

17:40-18:00
*Optimal Design of Fluid Systems Using LES (I)**
Borggaard, Jeff — Virginia Tech.
Iliescu, Traian — Virginia Tech.

WeP10 Berkeley

Biomedical Control Systems (Regular Session)

Chair: Borrello, Michael A. — Trex Enterprises
Co-Chair: Skliar, Mikhail — Univ. of Utah

16:00-16:20
Nonlinear Model Predictive Thermal Dose Control of Thermal Therapies: Experimental Validation with Phantoms, pp. 1627-1632
Arora, Dhiraj — Univ. of Utah
Skliar, Mikhail — Univ. of Utah
Cooley, Daniel — Univ. of Utah
Blankespoor, Adam — Univ. of Utah
Moellmer, Jeff — Univ. of Utah
Roemer, Robert — Univ. of Utah

16:20-16:40
Globally Stable Nonlinear Control of HIV-1 Systems, pp. 1633-1638
Tian, Zhiling — National Univ. of Singapore
Ge, Shuzhi Sam — National Univ. of Singapore
Lee, Tong Heng — National Univ. of Singapore

16:40-17:00
Feedback Control Design of an Elastance-Based Mock Circulatory System, pp. 1639-1644
Loh, Matthew — Lafayette Coll.
Yu, Yih-Choung — Lafayette Coll.

17:00-17:20
Multi-Channel Blind System Identification of the Arterial Network Using a Hemodynamic Wave Propagation Model, pp. 1645-1646
McCombie, Devin — Massachusetts Inst. of Tech.
Asada, H. Harry — Massachusetts Inst. of Tech.

17:20-17:40
In Vitro Test of an Adaptive Flow Controller for a Continuous Flow LVAD, pp. 1647-1648
Wu, Yi — Univ. of Virginia
Allaire, Paul — Univ. of Virginia
Tao, Gang — Univ. of Virginia
Liu, Yingjie — Univ. of Virginia

17:40-18:00
Controlling Respiratory Mechanical Impedance; an Analysis of Proportional Assist Ventilation, pp. 1649-1654
Borrello, Michael A. — Trex Enterprises

WeP11 Fairfax A

Resource Allocation for Communication Networks (Invited Session)

Chair: Akar, Mehmet — Univ. of Southern California
Co-Chair: Safonov, Michael G. — Univ. of Southern California
Organizer: Akar, Mehmet — Univ. of Southern California

16:00-16:20
A Switched System Model for Stability Analysis of Distributed Power Control Algorithms for Cellular Communications (I), pp. 1655-1660
Paul, Ayanendu — Univ. of Southern California
Akar, Mehmet — The Univ. of Southern California
Mitra, Urbashi — The Univ. of Southern California
Safonov, Michael G. — Univ. of Southern California

16:20-16:40
A Power Control Game Based on Outage Probabilities for Multicell Wireless Data Networks (I), pp. 1661-1666
Alpcan, Tansu — Univ. of Illinois at Urbana-champaign
Basar, Tamer — Univ. of Illinois at Urbana-Champaign
Dey, Subhrakanti — Univ. of Melbourne

16:40-17:00
Transmission Timing - a Control Approach to Distributed Uplink Scheduling in WCDMA (I), pp. 1667-1672
Törnqvist, David — Linköping Univ.
Geijer Lundin, Erik — Linköping Univ.
Gunnarsson, Fredrik — Linkoping Univ.
Gustafsson, Fredrik — Linkoping Univ.

17:00-17:20
Interior Point-Based Optimization for Joint Admission Control and Routing in IP Networks (I), pp. 1673-1678
Kuppuswamy, Kalyan — Qualcomm Inc
Lee, Daniel — Univ. of Southern California

17:20-17:40
Global Stability of Vegas-Like TCP Flow (I), pp. 1679-1682
Choe, Hyojeong — CALTECH/POSTECH
Low, Steven — California Inst. of Tech.
Lee, Jin S. — Pohang Univ. of Science & Tech.

17:40-18:00
A Congestion Control Algorithm for Max-Min Resource Allocation and Bounded Queue Sizes (I), pp. 1683-1688
Lestas, Marios — Univ. of Southern California
Ioannou, Petros A. — Univ. of Southern California
Pitsillides, Andreas — Univ. of Cyprus

WeP12 Fairfax B

Flight Vehicle Control (Regular Session)

Chair: Yurkovich, Stephen — The Ohio State Univ.
Co-Chair: Doman, David B. — AFRL

16:00-16:20

A Nonlinear Programming Approach for Control Allocation, pp. 1689-1694

Poonamallee, Vishnu — The Ohio State Univ.
Yurkovich, Stephen — The Ohio State Univ.
Serrani, Andrea — The Ohio State Univ.
Doman, David B. — AFRL
Oppenheimer, Michael — AFRL

16:20-16:40

Model Predictive Dynamic Control Allocation with Actuator Dynamics, pp. 1695-1700

Luo, Yu — The Ohio State Univ.
Serrani, Andrea — The Ohio State Univ.
Yurkovich, Stephen — The Ohio State Univ.
Doman, David B. — AFRL
Oppenheimer, Michael — AFRL

16:40-17:00

Control Allocation for the X-33 Using Existing and Novel Quadratic Programming Techniques, pp. 1701-1706

Simmons, Adam T. — Auburn Univ.
Hodel, Alan S. — Auburn Univ.

17:00-17:20

Hierarchical Control of Future Generation Rotorcraft, pp. 1707-1712

Tolani, Devendra — Pennsylvania State Univ.
Joseph, F.Horn — Penn. State Univ.
Ray, Asok — Pennsylvania State Univ.
Chen, Jialing — Penn. State Univ.

17:20-17:40

A Stochastically Optimal Feedforward and Feedback Technique for Flight Control Systems of High Performance Aircrafts, pp. 1713-1718

Campa, Giampiero — West Virginia Univ.
Fravolini, Mario Luca — Univ. Di Perugia
Napolitano, M.R. — West Virginia Univ.
Perhinschi, Mario George — West Virginia Univ.
Battipede, Manuela — Pol. of Turin

17:40-18:00

Control of Wing Rock Phenomenon with a Variable Universe Fuzzy Controller (I), pp. 1719-1724

Liu, Zenglian — Concordia Univ.
Su, Chun-Yi — Concordia Univ.
Svoboda, Jaroslav — Concordia Univ.

WeP13 Beacon Comp D

Characterization and Stability of Nonlinear Systems (Regular Session)

Chair: Abdallah, Chaouki T. — Univ. of New Mexico
Co-Chair: Woolsey, Craig — Virginia Tech.

16:00-16:20
Nonlinear Stability Analysis for Non-Polynomial Systems, pp. 1725-1730
Mastellone, Silvia — Univ. of New Mexico
Hokayem, Peter — Univ. of Illinois at Urbana-Champaign
Abdallah, Chaouki T. — Univ. of New Mexico
Dorato, Peter — Univ. of New Mexico

16:20-16:40
A Model-Based Characterization of the Long-Term Asymptotic Behavior of Nonlinear Discrete-Time Processes Using Map Invariance, pp. 1731-1736
Kazantzis, Nikolaos — Worcester Pol. Inst.
Good, Theresa — Univ. of Maryland, Baltimore County

16:40-17:00
Minimum-Phase Property of Nonlinear Systems in Terms of a Dissipation Inequality, pp. 1737-1742
Ebenbauer, Christian — Insitute for Systems Theory in Engineering
Allgower, Frank — Univ. of Stuttgart

17:00-17:20
Stability Boundaries Analysis of Non-Autonomous Systems with Resonant Solutions Based on Subharmonic Melnikov Functions, pp. 1743-1748
Susuki, Yoshihiko — Kyoto Univ.
Hikihara, Takashi — Kyoto Univ.

17:20-17:40
Input-Output Analysis of Decentralized Relay Systems, pp. 1749-1754
Faldin, Nikolay — Tula State Univ.
Fedorovski, Platon — Tula State Univ.
Boiko, Igor — SNC-Lavalin

17:40-18:00
A Necessary and Sufficient Local Controllability Condition for Bilinear Discrete-Time Systems, pp. 1755-1757
Calvet, Jean-Louis — LAAS-CNRS, UPS
Djeridane, Badis — LAAS-CNRS

WeP14 Beacon Comp E

Applied Fuzzy Modeling and Control (Regular Session)

Chair: Tang, Yu — National Univ. of Mexico
Co-Chair: Zak, Stanislaw H. — Purdue Univ.

16:00-16:20
Friction and Output Backlash Compensation of Systems Using Neural Network and Fuzzy Logic, pp. 1758-1763
Jang, Jun Oh — Uiduk Univ.
Son, Min Kyong — Uiduk Univ.
Chung, Hee Tae — Pusan Univ. of Foreign Studies

16:20-16:40
Swing-Free Transporting of Two-Dimensional Overhead Crane Using Sliding Mode Fuzzy Control, pp. 1764-1769
Liu, Diantong — Yantai Univ.
Yi, Jianqiang — Inst. of Automation, Chinese Acad. of Sciences
Zhao, Dongbin — Inst. of Automation, Chinese Acad. of Sciences
Wang, Wei — Inst. of Automation, Chinese Acad. of Sciences

16:40-17:00
Neutralization Process Control Using an Adaptive Fuzzy Controller, pp. 1770-1775
Wan, Feng — Zhejiang Univ.
Shang, Huilan — Univ. of Alberta
Wang, Li-Xin — Hong Kong Univ. of Sci. & Tech.
Sun, You-Xian — Zhejiang Univ.

17:00-17:20
Cluster Optimization for Takagi and Sugeno Fuzzy Models and Its Application to a Combined Cycle Power Plant Boiler, pp. 1776-1781
Saez, Doris — Univ. de Chile
Zuńiga, Roberto — Univ. de Chile

17:20-17:40
Robust Agglomerative Clustering Algorithm for Fuzzy Modeling Purposes, pp. 1782-1787
GRISALES, Victor Hugo — Univ. Distrital / Doctorant Lab. LAAS du CNRS
SORIANO, Jose Jairo — Univ. Distrital
BARATO, Sergio — Univ. Distrital
GONZALEZ, Diana Marcela — Univ. Distrital

17:40-18:00
Adaptive Robust Fuzzy Control for Output Tracking, pp. 1788-1793
Tang, Yu — National Univ. of Mexico

WeP15 Beacon Comp F

Fault Tolerant Systems (Regular Session)

Chair: Simani, Silvio — Univ. of Ferrara
Co-Chair: Campos Delgado, Daniel Ulises — Univ. Autonoma de San Luis Potosi

16:00-16:20
Fault Tolerant Control for Unstable Systems: A Linear Time Varying Approach, pp. 1794-1798
Stoustrup, Jakob — Aalborg Univ.
Niemann, Henrik — Tech. Univ. of Denmark

16:20-16:40
Integrated Fault Tolerant Scheme with Disturbance Feedforward, pp. 1799-1804
Campos Delgado, Daniel Ulises — Univ. Autonoma de San Luis Potosi
Martinez Martinez, Sinuhé — Univ. Autonoma de San Luis Potosi
Zhou, Kemin — Lousiana State Univ.

16:40-17:00
Adaptive Compensation of Morphing Actuator Failures, pp. 1805-1810
Chen, Shuhao — Univ. of Michigan
Tao, Gang — Univ. of Virginia
Fei, Juntao — -
Joshi, Suresh M. — NASA Langley Res. Ctr.

17:00-17:20
Controller Design Using Safety Performance Index According to IEC 61508, pp. 1811-1816
Suyama, Koichi — Tokyo Univ. of Marine Science and Tech.

17:20-17:40
A Simultaneous Stabilization Approach to (Passive) Fault Tolerant Control, pp. 1817-1822
Stoustrup, Jakob — Aalborg Univ.
Blondel, Vincent — Univ. catholique de Louvain

17:40-18:00
Nonlinear Reconfiguration of Asymmetric Failures for a Six Degree-Of-Freedom F-16, pp. 1823-1828
Thomas, Suba — Drexel Univ.
Kwatny, Harry — Drexel Univ.
Chang, Bor-chin — Drexel Univ.

WeP16 Beacon Comp A

Information Storage and MEMS (Regular Session)

Chair: Messner, William — Carnegie Mellon Univ.
Co-Chair: Bamieh, Bassam — Univ. of California at Santa Barbara

16:00-16:20
Design and Experiment of Add-On Track Following Controller for Optical Disc Drives Based on Robust Output Regulation, pp. 1829-1835
Shim, Hyungbo — Seoul National Univ.
Kim, Hyung Jong — Hanyang Univ.
Chung, Chung Choo — Hanyang Univ.

16:20-16:40
Calibration of the Characteristic Frequency of an Optical Tweezer Using a Recursive Least-Squares Approach, pp. 1836-1841
Ranaweera, Aruna — Univ. of California, Santa Barbara
Bamieh, Bassam — Univ. of California at Santa Barbara

16:40-17:00
Fault Residuals for Compact Disc Players Based on Redundant and Non-Linear Sensor, pp. 1842-1847
Odgaard, Peter Fogh — Aalborg Univ.
Stoustrup, Jakob — Aalborg Univ.
Andersen, Palle — Aalborg Univ.
Mikkelsen, Henrik — Bang & Olufsen

17:00-17:20
Modeling and Control System Design for Tape Drive Loader Mechanism, pp. 1848-1854
Panda, Shiba P. — Inst. for Control Systems Design
Penner, Bryan D — Inst. for Control Systems Design

17:20-17:40
Fabrication and Optimal Strain Sensor Placement in an Instrumented Disk Drive Suspension for Vibration Suppression, pp. 1855-1861
Oldham, Kenn — Univ. of California, Berkeley
Kon, Stanley — Univ. of California at Berkeley
Horowitz, Roberto — Univ. of California at Berkeley

17:40-18:00
Adaptive Force-Balancing Control of Mems Gyroscope System with Actuator Limits, pp. 1862-1867
Jagannathan, Sarangapani — The Univ. of Missouri-Rolla
Mohammed, Hameed Abdul — Univ. of Missouri Rolla

WeP17 Beacon Comp G

Stability of Hybrid Systems (Regular Session)

Chair: Krogh, Bruce H. — Carnegie Mellon Univ.
Co-Chair: Goncalves, Jorge M. — Univ. of Cambridge

16:00-16:20
Lyapunov-Like Stability of Switched Stochastic Systems, pp. 1868-1872
Dimarogonas, Dimos — National Tech. Univ. of Athens
Kyriakopoulos, Kostas J. — National Tech. Univ. of Athens

16:20-16:40
Stable Multi-Model Switching Control of a Class of Nonlinear Systems, pp. 1873-1878
Franco, Elisa — Univ. of Trieste
Sacone, Simona — Univ. of Genova
Parisini, Thomas — Univ. of Trieste

16:40-17:00
Stability Test Based on Eigenvalue Loci for Bimodal Piecewise Linear Systems, pp. 1879-1884
Iwatani, Yasushi — The Univ. of Tokyo
Hara, Shinji — The Univ. of Tokyo

17:00-17:20
Hybrid Direct Adaptive Stabilization for Nonlinear Uncertain Impulsive Dynamical Systems, pp. 1885-1890
Haddad, Wassim M. — Georgia Inst. of Tech.
Hayakawa, Tomohisa — Kyoto Univ.
Chellaboina, VijaySekhar — Univ. of Missouri- Columbia

17:20-17:40
Finding Surface Lyapunov Functions throughSum-of-Squares Programming, pp. 1891-1892
Spanos, Demetri — California Inst. of Tech.
Goncalves, Jorge M. — California Inst. of Tech.

17:40-18:00
Towards Stability Analysis of Jump Linear Systems with State-Dependent and Stochastic Switching, pp. 1893-1898
Tejada, Arturo — Old Dominion Univ.
Gonzalez, Oscar R. — Old Dominion Univ.
Gray, W. Steven — Old Dominion Univ.

WeP18 Beacon Comp B

Adaptive Control III (Regular Session)

Chair: Lavretsky, Eugene — The Boeing Co.
Co-Chair: Hayakawa, Tomohisa — The Univ. of Tokyo

16:00-16:20
On Integral Control in Backstepping: Analysis of Different Techniques, pp. 1899-1904
Skjetne, Roger — Norwegian Univ. of Science And Tech.
Fossen, Thor I. — Norwegian Univ. of Science & Tech.

16:20-16:40
Approximate Verification of a Class of Adaptive Control Systems, pp. 1905-1910
Prasanth, Ravi K. — Scientific Systems Co. Inc.
Chen, Lingji — Scientific Systems Company Inc.
Boskovic, Jovan D. — Scientific Systems Co. Inc.
Mehra, Raman K. — Scientific Systems Co. Inc.

16:40-17:00
A Non-Orthogonal Projection Approach to Characterization of Almost Positive Real Systems with an Application to Adaptive Control, pp. 1911-1916
Balas, Mark — Univ. of Colorado
Fuentes, Robert — Boeing-SVS, Inc.

17:00-17:20
Robust Adaptive Control for a Class of Perturbed Strict-Feedback Nonlinear Systems, pp. 1917-1922
Ge, Shuzhi Sam — National Univ. of Singapore
Hong, Fan — National Univ. of Singapore
Lee, Tong Heng — National Univ. of Singapore

17:20-17:40
Stability and Convergence in Adaptive Systems, pp. 1923-1928
Stefanovic, Margareta — Univ. of Southern California
Wang, Rengrong — Univ. of Southern California
Safonov, Michael G. — Univ. of Southern California

17:40-18:00
On Parameter Convergence of Adaptive Fully Linearizable Systems, pp. 1929-1933
Huang, Jeng Tze — Van Nung Inst. of Tech.

WeP19 Beacon Comp H

Sliding Mode Control III (Regular Session)

Chair: Erwin, Richard Scott — Space Vehicles Directorate
Co-Chair: Su, Wu-Chung — National Chung Hsing Univ.

16:00-16:20
Modified Sliding Mode Control and Its Application to Electrostatically Controlled Dual-Axis Micromirrors, pp. 1934-1939
Sane, Harshad S. — Corning-Intellisense Inc.
Yazdi, Navid — Corning-IntelliSense Inc.
Mastrangelo, Carlos — Corning-IntelliSense Inc.

16:20-16:40
A Total Chattering-Free Sliding Mode Control for Sampled-Data Systems, pp. 1940-1945
Lin, Chia-Fu — Chung-Shan Inst. of Science and Tech.
Su, Wu-Chung — National Chung Hsing Univ.

16:40-17:00
An Indirect Variable Structure Model Reference Adaptive Control Applied to the Speed Control of a Three-Phase Induction Motor, pp. 1946-1951
Oliveira, Josenalde Barbosa de — Federal Univ. of Rio Grande do Norte
Araujo, Aldayr Dantas de — Federal Univ. of Rio Grande do Norte

17:00-17:20
Sliding-Mode Controller Design with Internal Model Principle for Systems Subject to Periodic Signals, pp. 1952-1957
Lu, Yu-Sheng — National Yunlin Univ. of Science and Tech.

17:20-17:40
Sliding Mode Controller with Sliding Perturbation Observer Based on Gain Optimization Using Genetic Algorithm, pp. 1958-1963
You, Ki Sung — Pusan National Univ.
Lee, Min Cheol — Pusan National Univ.
Son, Kwon — Pusan National Univ.
Yoo, Wan Suk — Pusan National Univ.

17:40-18:00
Controllability of Piecewise Linear Descriptor Systems, pp. 1964-1969
Xie, Guangming — Peking Univ.
Wang, Long — Peking Univ.

WeES Back Bay Ballroom D

Winning That Academic Job (Special Session)

Chair: Hoo, Karlene — Texas Tech. Univ.
Co-Chair: Balas, Mark — Univ. of Colorado
Organizer: Hoo, Karlene — Texas Tech. Univ.

WeLS Back Bay Ballroom D

Resume Exchange (Special Session)

Organizer: Shor, Molly H. — Oregon State Univ.

ThDPL Grand Ballroom

Plenary Session II: Kevin a. Wise (Plenary Session)

Chair: Speyer, Jason L. — Univ. of California at Los Angeles
Co-Chair: Pao, Lucy Y. — Univ. of Colorado

08:00-09:00

*Unmanned Aircraft: The Future in Military Aviation**
Wise, Kevin A. — Boeing Phantom Works

ThA01 Commonwealth

Challenges in Control Engineering of Computing Systems (Tutorial Session)

Chair: Hellerstein, Joe — IBM - T.J. Watson Res. Center
Co-Chair: Wittenmark, Bjorn — Lund Inst. of Tech.
Organizer: Hellerstein, Joe — IBM - T.J. Watson Res. Center

09:30-10:30

Challenges in Control Engineering of Computing Systems. (I), pp. 1970-1979
Hellerstein, Joe — IBM - T.J. Watson Res. Center

10:30-10:45

Design and Evaluation of Load Control in Web Server Systems (I), pp. 1980-1985
Robertsson, Anders — Lund Inst. of Tech.
Wittenmark, Bjorn — Lund Inst. of Tech.
Kihl, Maria — Lund Inst. of Tech. Lund Univ.
Andersson, Mikael — Lund Inst. of Tech.

10:45-11:00

Throttling Utilities in the IBM DB2 Universal Database Server (I), pp. 1986-1991
Parekh, Sujay — IBM T.J. Watson Res. Center
Rose, Kevin — IBM Toronto Lab.
Diao, Yixin — IBM T.J. Watson Res. Center
Chang, Victor — IBM Toronto Lab.
Hellerstein, Joseph — IBM T.J. Watson Res. Center
Lightstone, Sam — IBM Toronto Lab.
Huras, Matt — IBM Toronto Lab.

11:00-11:15

Practical Application of Control Theory to Web Services (I), pp. 1992-1997
Abdelzaher, Tarek — Univ. of Virginia
Lu, Ying — Univ. of Virginia
Zhang, Ronghua — Univ. of Virginia
Henriksson, Dan — Lund Inst. of Tech.

11:15-11:30

*Queueing Model Based Performance Control (I)**
Sha, L. — Univ. of Illinois at Urbana-champaign

ThA02 Independence Ballroom East

LMIs (Regular Session)

Chair: Dullerud, Geir E. — Univ. of Illinois at Urbana-champaign
Co-Chair: Mesbahi, Mehran — Univ. of Washington

09:30-09:50

LMI Based Output Feedback Control of Discrete Linear Repetitive Processes, pp. 1998-2003

Sulikowski, Bartlomiej — Univ. of Zielona Gora, Inst. Control And Computation Eng.
Galkowski, Krzysztof — Univ. of Zielona Gora
Rogers, Eric — Univ. of Southampton
Owens, David H. — The Univ. of Sheffield

09:50-10:10

State Feedback Gain Scheduling for Linear Systems with Time-Varying Parameters, pp. 2004-2009

Montagner, Vinícius F. — Univ. of Campinas
Peres, Pedro L. D. — Univ. of Campinas

10:10-10:30

General Interpolation for Input-Affine Nonlinear Systems, pp. 2010-2014

Bacic, Marko — Univ. of Oxford
Cannon, Mark — Univ. of Oxford
Kouvaritakis, Basil — Oxford Univ.

10:30-10:50

On the Rank Minimization Problem, pp. 2015-2020

Kim, Yoonsoo — Univ. of Washington
Mesbahi, Mehran — Univ. of Washington

10:50-11:10

On the L2-Induced Control for Eventually Periodic Systems, pp. 2021-2026

Farhood, Mazen — Univ. of Illinois at Urbana-champaign
Dullerud, Geir E. — Univ. of Illinois at Urbana-champaign

11:10-11:30

On Robust Stability of Linear Neutral Systems with Nonlinear Parameter Perturbations, pp. 2027-2032

Han, Qing-Long — Central Queensland Univ.
Yu, Li — Zhejiang Univ. of Tech.

ThA03 Hampton A

Control Applications I (Regular Session)

Chair: Rotea, Mario — Purdue Univ.
Co-Chair: Diao, Yixin — IBM Thomas J. Watson Res. Center

09:30-09:50

Extremum Seeking Control of Tunable Thermoacoustic Cooler, pp. 2033-2038

Li, Yaoyu — Purdue Univ.
Rotea, Mario — Purdue Univ.
Chiu, George T.-C. — Purdue Univ.
Mongeau, Luc G. — Purdue Univ.
Paek, In-Su — Purdue Univ.

09:50-10:10

State Feedback Integral Control by Velocity-Based Multiple Model Networks, pp. 2039-2044

Gao, Ruiyao — Dublin Inst. of Tech.
O'Dwyer, Aidan — Dublin Inst. of Tech.
McLoone, Séamus — National Univ. of Ireland, Maynooth
Coyle, Eugene — Dublin Inst. of Tech.

10:10-10:30

Using MIMO Linear Control for Load Balancing in Computing Systems, pp. 2045-2050

Diao, Yixin — IBM Res.
Hellerstein, Joe — IBM Res.
Storm, Adam J. — IBM Toronto Lab.
Surendra, Maheswaran — IBM Res.
Lightstone, Sam — IBM Toronto Lab.
Parekh, Sujay — IBM Res.
Garcia-Arellano, Christian — IBM Toronto Lab.

10:30-10:50

*Thermal Comfort Control of an Advanced Spacesuit**

Saw, Wee-Hee — Student
Thornton, Samuel — Univ. of Missouri
Nair, Satish — Univ. of Missouri-Columbia

10:50-11:10

A Control System for a Hybrid Linear Actuator for a Flush Deck Hatch, pp. 2051-2056

Sendaula, Musoke — Temple Univ.
Biswas, Saroj K. — Temple Univ.
Teter, Jopesh P. — Naval Surface Warfare Center
Brady, David J. — Naval Surface Warfare Center

11:10-11:30

A Neuron Model-Free Controller with Immune Tuning Gain for Hydroelectric Generating Units, pp. 2057-2062

Zhang, Jianming — Zhejiang Univ.
Wang, Ning — Zhejiang Univ.
Wang, Shuqing — Zhejiang Univ.

ThA04 Hampton B

Linear Systems and Control I (Regular Session)

Chair: Franklin, Gene F. — Stanford Univ.
Co-Chair: Lall, Sanjay — Stanford Univ.

09:30-09:50

Input Performance Limitations of Feedback Control, pp. 2063-2068

kariwala, Vinay — Univ. of Alberta
Skogestad, Sigurd — Norwegian Univ. of Science & Tech.
Forbes, J. Fraser — Univ. of Alberta
Meadows, Edward S. — Univ. of Alberta

09:50-10:10

Fundamental Performance Limitations of Modulated and Demodulated Control Systems, pp. 2069-2074

Lau, Katrina — Univ. of Newcastle
Goodwin, Graham C. — Univ. of Newcastle
M'Closkey, Robert — Univ. of California at Los Angeles

10:10-10:30

Optimal Impulse Response Tracking and Disturbance Rejecting Controllers, pp. 2075-2080

Hauksdottir, Anna Soffia — Univ. of Iceland

10:30-10:50

H-Infinity Collocated Control of Structural Systems: An Analytical Bound Approach, pp. 2081-2086

Bai, Yuanqiang — Univ. of Houston
Grigoriadis, Karolos M. — Univ. of Houston
Demetriou, Michael A. — Worcester Pol. Inst.

10:50-11:10

Design of Digital Pre-Compensation Filters by H-Infinity Optimization, pp. 2087-2092

Lim, Anthony Galvin Khang Chuang — Univ. of Western Australia
Sreeram, Victor — Univ. of Western Australia
Wang, Guo Qing — Univ. of Western Australia

11:10-11:30

A Design of Model Matching Systems for Fat Plants, pp. 2093-2097

Kase, Wataru — Osaka Inst. of Tech.
Watanabe, Takuya — Osaka Inst. of Tech.
Mutoh, Yasuhiko — Sophia Univ.

ThA05 Exeter

Vehicle Estimation (Invited Session)

Chair: Tai, Meihua — Pol. Univ.
Co-Chair: Bevly, David M. — Auburn Univ.
Organizer: Brennan, Sean — Penn State Univ.
Organizer: Tai, Meihua — Pol. Univ.

09:30-09:50

Mixture Kalman Filter Based Highway Congestion Mode and Vehicle Density Estimator and Its Application (I), pp. 2098-2103

Sun, Xiaotian — Univ. of California at Berkeley
Munoz, Laura — Univ. of California at Berkeley
Horowitz, Roberto — Univ. of California at Berkeley

09:50-10:10

Linear Estimator for Road Departure Warning Systems (I), pp. 2104-2109

Mudaliar, Nikhil — Univ. of Michigan
LeBlanc, David — Univ. of Michigan
Peng, Huei — Univ. of Michigan

10:10-10:30

Estimation of Vehicle Roll and Road Bank Angle (I), pp. 2110-2115

Ryu, Jihan — Stanford Univ.
Gerdes, J. Christian — Stanford Univ.

10:30-10:50

Vehicle State Estimation Using Steering Torque (I), pp. 2116-2121

Yih, Paul — Stanford Univ.
Ryu, Jihan — Stanford Univ.
Gerdes, J. Christian — Stanford Univ.

10:50-11:10

Estimation of Vehicle Slip Angle Using GPS/INS Measurements with a Model Based Estimator (I), pp. 2122-2127

Anderson, Rusty — Auburn Univ.
Bevly, David M. — Auburn Univ.

11:10-11:30

Nonlinear Tire Lateral Force versus Slip Angle Curve Identification (I), pp. 2128-2133

Koo, Shiang-Lung — Univ. of California at Berkeley
Tan, Han-Shue — Univ. of California at Berkeley
Tomizuka, Masayoshi — Univ. of California at Berkeley

ThA06 Dalton

Optimization I (Regular Session)

Chair: Burnett, Rebecca — Johns Hopkins Univ. Applied Physics Lab.
Co-Chair: DasGupta, Bhaskar — UIC

09:30-09:50

Computational Complexities of Honey-Pot Searching with Local Sensory Information, pp. 2134-2138

DasGupta, Bhaskar — UIC
Hespanha, Joao P. — Univ. of California, Santa Barbara
Sontag, Eduardo D. — Rutgers Univ.

09:50-10:10

The Static Output Feedback Stabilization Problem As a Concave-Convex Programming Problem, pp. 2139-2141

Astolfi, Alessandro — Imperial Coll.
Colaneri, Patrizio — Pol. di Milano

10:10-10:30

Generalized Wielandt and Cauchy-Schwarz Inequalities, pp. 2142-2147

Hasan, Mohammed A. — Univ. of Minnesota

10:30-10:50

On the Duality of Constrained Estimation and Control, pp. 2148-2153

Goodwin, Graham C. — Univ. of Newcastle
De Dona, Jose Adrian — The Univ. of Newcastle
Seron, Maria — The Univ. of Newcastle
Zhuo, Xiang Wei — Univ. of Newcastle, Australia

10:50-11:10

A New PID Tuning Technique Using Ant Algorithm, pp. 2154-2159

VAROL, Huseyin Atakan — Sabanci Univ. (Turkey)
BINGUL, Zafer — Kocaeli Univ. (Turkey)

11:10-11:30

Cost Distribution Shaping: The Relations between Bode Integral, Entropy, Risk-Sensitivity, and Cost Cumulant Control, pp. 2160-2165

Won, Chang-Hee — Univ. of North Dakota

ThA07 Gardner A

Applied Estimation (Regular Session)

Chair: Dayawansa, Wijesuriya P. — Texas Tech. Univ.
Co-Chair: Rizzoni, Giorgio — Ohio State Univ.

09:30-09:50
Modeling, Identification and State Estimation of Diesel Engine Torque and NOx Dynamics in Response to Fuel Quantity and Timing Excitations, pp. 2166-2171
Brahma, Avra — Ohio State Univ.
Upadhyay, Devesh — Ford
Serrani, Andrea — Ohio State Univ.
Rizzoni, Giorgio — Ohio State Univ.

09:50-10:10
Non-Linear Approximation Filtering in Estimating the Origin of Contaminant Particles in a Fluid Flow Using Fixed Sensors, pp. 2172-2177
Navaratna, Channa — Texas Tech. Univ.
Dayawansa, Wijesuriya P. — Texas Tech. Univ.

10:10-10:30
A Class of Impedance Tomography Based Sensors for Semiconductor Manufacturing, pp. 2178-2183
Kruger, Michiel — Univ. of California at Berkeley
Poolla, Kameshwar — Univ. of California at Berkeley
Spanos, Costas J. — Univ. of California at Berkeley

10:30-10:50
High Bandwidth Tilt Measurement Using Low Cost Sensors, pp. 2184-2189
Leavitt, John — Univ. of California, Irvine
Sideris, Athanasios — Univ. of California at Irvine
Bobrow, James E. — Univ. of California, Irvine

10:50-11:10
An Empirical Study into the Robustness of Split Covariance Addition (SCA) for Human Motion Tracking, pp. 2190-2195
Julier, Simon J. — Naval Res. Lab.
LaViola, Jr., Joseph J. — Brown Univ.

11:10-11:30
A Novel Local Invariant Descriptor Adapted to Mobile Robot Vision, pp. 2196-2201
Cao, Guangzhi — Zhejiang Univ. P.R. China
Chen, Jiaqian — Zhejiang Univ. P.R. China
Jiang, Jing-ping — Zhejiang Univ. P.R. China

ThA08 Gardner B

Nonlinear Model Predictive Control (Regular Session)

Chair: Soroush, Masoud — Drexel Univ.
Co-Chair: Allgower, Frank — Univ. of Stuttgart

09:30-09:50
Robust Stabilization of Discrete-Time Nonlinear Systems by Certainty Equivalence Output Feedback with Applications to Model Predictive Control, pp. 2202-2207
Messina, Michael J. — Univ. of California at Santa Barbara
Tuna, Sezai E. — Univ. of California at Santa Barbara
Teel, Andrew R. — Univ. of California at Santa Barbara

09:50-10:10
Certainty Equivalence in Constrained Linear Systems Subject to Stochastic Disturbances, pp. 2208-2213
Batina, Ivo — Eindhoven Univ. of Tech.
Stoorvogel, Anton A. — Eindhoven Univ. of Tech.
Weiland, Siep — Eindhoven Univ. of Tech.

10:10-10:30
Gaussian Process Model Based Predictive Control, pp. 2214-2219
Kocijan, Jus — Jozef Stefan Inst.
Murray-Smith, Roderick — Univ. of Glasgow
Rasmussen, Carl Edward — Max Planck Inst. for Biological Cybernetics
Girard, Agathe — Univ. of Glasgow

10:30-10:50
A Convex Parameterization for Solving Constrained Min-Max Problems with a Quadratic Cost, pp. 2220-2221
Kerrigan, Eric C. — Univ. of Cambridge
Alamo, Teodoro — Univ. de Sevilla

10:50-11:10
In Situ Adaptive Tabulation for Real-Time Control, pp. 2222-2226
Hedengren, John — Univ. of Texas at Austin
Edgar, Thomas F. — Univ. of Texas at Austin

11:10-11:30
Nonlinear Model Predictive Control Based on Predicted State Error Convergence, pp. 2227-2232
Wen, John T. — Rensselaer Pol. Inst.
Jung, Sooyong — Rensselaer Pol. Inst.

ThA09 Clarendon

Distributed Parameter Systems (Regular Session)

Chair: Demetriou, Michael A. — Worcester Pol. Inst.
Co-Chair: Egeland, Olav — Norwegian Univ. of Sci. & Tech.

09:30-09:50
Observer Design for a Towed Seismic Cable, pp. 2233-2238
Nguyen, Tu Duc — Norwegian Univ. of Science And Tech.
Egeland, Olav — Norwegian Univ. of Sci. & Tech.

09:50-10:10
Optimization of a Joint Sensor Placement and Robust Estimation Scheme for Distributed Parameter Processes Subject to Worst Case Spatial Disturbance Distributions, pp. 2239-2244
Demetriou, Michael A. — Worcester Pol. Inst.
Borggaard, Jeff — Virginia Tech.

10:10-10:30
Unstable Modes versus Non-Normal Modes in Supercritical Channel Flows, pp. 2245-2250
Jovanovic, Mihailo — Univ. of California, Santa Barbara
Bamieh, Bassam — Univ. of California at Santa Barbara

10:30-10:50
Control of Distributed Discrete-Time Systems on Graphs, pp. 2251-2256
Chen, Been-Der — Stanford Univ.
Lall, Sanjay — Stanford Univ.

10:50-11:10
On Avoiding Saturation in the Control of Vehicular Platoons, pp. 2257-2262
Jovanovic, Mihailo — Univ. of California, Santa Barbara
Fowler, Jeffrey — Cornell Univ.
Bamieh, Bassam — Univ. of California at Santa Barbara
D'Andrea, Raffaello — Cornell Univ.

11:10-11:30
Adaptive Finite Element Methods for Distributed Parameter System Identification: Applications in Fluorescence Enhanced Frequency Domain Optical Tomography, pp. 2263-2267
Joshi, Amit — Texas A & M Univ. Coll. Station, TX
Sevick-Muraca, Eva M — Texas A&M Univ. Coll. Station, TX

ThA10 Berkeley

Bioengineering Systems (Regular Session)

Chair: Lin, Zongli — Univ. of Virginia
Co-Chair: Asada, H. Harry — Massachusetts Inst. of Tech.

09:30-09:50

Closed-Loop Control in Clinical Pharmacology: Paradigms, Benefits, and Challenges, pp. 2268-2277

Bailey, James M. — Emory Univ. Hospital
Haddad, Wassim M. — Georgia Inst. of Tech.
Hayakawa, Tomohisa — Kyoto Univ.

09:50-10:10

Controlling Drug Infusion Biological Systems FREN with Sliding Bounds, pp. 2278-2283

Treesatayapun, Chidentree — Chiang Mai Univ.
Utrongjit, S. — TBD

10:10-10:30

Approximate Solutions to Nonlinear Fluid Networks with Periodic Inputs, pp. 2284-2289

Koroleva, Olga I. — Univ. of California at San Diego
Krstic, Miroslav — Univ. of California at San Diego

10:30-10:50

Predictive Control of a Nutrient Removal Biological Plant, pp. 2290-2295

Nejjari, Fatiha — Univ. Pol. de Catalunya
Quevedo, Joseba — Tech. Univ. of Catalonia

10:50-11:10

Human Gait Modeling: Dealing with Holonomic Constraints, pp. 2296-2301

Hu, Tingshu — Univ. of Virginia
Lin, Zongli — Univ. of Virginia
Allaire, Paul — Univ. of Virginia

11:10-11:30

Control of Human Thermal Comfort Using Digit Feedback Set Point Reset, pp. 2302-2307

Cline, Harvey — Univ. of Missouri - Columbia
Thornton, Samuel — Univ. of Missouri
Nair, Satish — Univ. of Missouri-Columbia

ThA11 Fairfax A

Control of Communication Systems (Regular Session)

Chair: Elia, Nicola — Iowa State Univ.
Co-Chair: Panayiotou, Christos — Univ. of Cyprus

09:30-09:50

Infinitesimal Perturbation Analysis for a Single Stochastic Fluid Model Node with a Class of Feedback Controlled Traffic, pp. 2308-2313

Panayiotou, Christos — Univ. of Cyprus

09:50-10:10

Queuing Theory Based Open Loop Control of Web Server, pp. 2314-2315

Kodali, Hareesh Kumar — Indian Inst. of Tech.
Majhi, Somanath — Indian Inst. of Tech. Guwahati

10:10-10:30

An Application of the Control Theoretic Modeling for a Scalable TCP ACK Pacer, pp. 2316-2321

Sun, Yishen — Northwestern Univ.
Lee, Chung Chieh — Northwestern Univ.
Berry, Randall — Northwestern Univ.
Haddad, Abraham H. — Northwestern Univ.

10:30-10:50

Differentiated Internet Pricing Using a Hierarchical Network Game Model, pp. 2322-2327

Shen, Hongxia — Univ. of Illinois at Urbana-Champaign
Basar, Tamer — Univ. of Illinois at Urbana-Champaign

10:50-11:10

TCP Retransmission Timer Adjustment Mechanism Using System Identification, pp. 2328-2332

Haeri, Mohammad — Sharif Univ. of Tech.
Mohsenian Rad, Amir Hamed — Sharif Univ. of Tech.

11:10-11:30

Nonlinear Flow Control for Network Traffic Management with Capacity Constraints, pp. 2333-2338

Fan, Yi — Pol. Univ.
Jiang, Zhong-Ping — Pol. Univ.

ThA12 Fairfax B

Multiple Vehicle Systems (Regular Session)

Chair: Feron, Eric — Massachusetts Inst. of Tech.
Co-Chair: Agrawal, Sunil K. — Univ. of Delaware

09:30-09:50
Stability and Safety of Multi-Vehicle Systems, pp. 2339-2343
Wang, Yong — Peking Univ.

09:50-10:10
Design of Control Laws for Maneuvered Formation Flight, pp. 2344-2349
Campa, Giampiero — West Virginia Univ.
Napolitano, M.R. — West Virginia Univ.
Seanor, Brad — West Virginia Univ.
Perhinschi, Mario George — West Virginia Univ.

10:10-10:30
A Unified Nonlinear Controller for a Platoon of Car-Like Vehicles, pp. 2350-2355
Pham, Minhtuan — Nanyang Tech. Univ.
Wang, Danwei — Nanyang Tech. Univ.

10:30-10:50
Nash Strategies with Distance Discount Factor in Target Selection Problems, pp. 2356-2361
Liu, Yong — The Ohio State Univ.
Galati, David — Univ. of Pittsburgh
Simaan, Marwan A. — Univ. of Pittsburgh

10:50-11:10
Research on the Algorithm of Obstacles Avoidance of Outdoor Mobile Robot, pp. 2362-2367
hubin, hubin — Tsinghua Univ.
jinhui, jinhui — Tsinghua Univ.
hekezhong, hekezhong — Tsinghua Univ.
chenguisheng, chenguisheng — Tsinghua Univ.

11:10-11:30
Planning and Control of a Nonholonomic Unicycle Using Ring Shaped Local Potential Fields, pp. 2368-2373
Pathak, Kaustubh — Grad. Student, Univ. of Delaware
Agrawal, Sunil K. — Professor, Univ. of Delaware

ThA13 Beacon Comp D

Control of Nonlinear Systems I (Regular Session)

Chair: Pagilla, Prabhakar R. — Oklahoma State Univ.
Co-Chair: Khorrami, Farshad — Pol. Univ.

09:30-09:50
Multi-Model Control of Nonlinear Systems Using Closed Loop Gap Metric, pp. 2374-2378
Arslan, Erdem — Bogazici Univ.
camurdan, Mehmet C. — Bogazici Univ.
Palazoglu, Ahmet N. — Univ. of California at Davis
Arkun, Yaman — Koc Univ.

09:50-10:10
Controller and Observer Design for Lipschitz Nonlinear Systems, pp. 2379-2384
Pagilla, Prabhakar R. — Oklahoma State Univ.
Zhu, Yongliang — Oklahoma State Univ.

10:10-10:30
A High Gain Multiple Time-Scaling Technique for Global Control of Nonlinear Systems, pp. 2385-2390
Krishnamurthy, Prashanth — Pol. Univ.
Khorrami, Farshad — Pol. Univ.

10:30-10:50
Output Feedback Stabilization and Restricted Tracking for Cascaded Systems with Bounded Control, pp. 2391-2396
Kaliora, Georgia — Imperial Coll.
Jiang, Zhong-Ping — Pol. Univ.
Astolfi, Alessandro — Imperial Coll.

10:50-11:10
Output Feedback Sampled-Data Stabilization of Nonlinear Systems, pp. 2397-2402
Khalil, Hassan K. — Michigan State Univ.

11:10-11:30
Robust Output Regulation with Nonlinear Exosystems, pp. 2403-2408
Chen, Zhiyong — Chinese Univ. of Hong Kong
Huang, Jie — Chinese Univ. of Hong Kong

ThA14 Beacon Comp E

Neural Network Based Adaptive Control (Regular Session)

Chair: Liu, Guangjun — Ryerson Univ.
Co-Chair: Ge, Shuzhi Sam — National Univ. of Singapore

09:30-09:50
Practical Adaptive Neural Control of Nonlinear Systems with Unknown Time Delays, pp. 2409-2414
Hong, Fan — National Univ. of Singapore
Ge, Shuzhi Sam — National Univ. of Singapore
Lee, Tong Heng — National Univ. of Singapore

09:50-10:10
Sliding-Mode Learning of a Neuro-Adaptive Robust Control Configuration, pp. 2415-2420
Alves Jr, Marco Antonio de Oliveira Alves Junior — Embraer
Nobrega, Euripedes — Univ. Estadual De Campinas

10:10-10:30
Several Extensions in Methods for Adaptive Output Feedback Control, pp. 2421-2426
Kim, Nakwan — Georgia Inst. of Tech.
Calise, Anthony J. — Georgia Inst. of Tech.
Hovakimyan, Naira — Virginia Pol. Inst. and State Univ.

10:30-10:50
Model-Based PID Autotuning Enhanced by Neural Structural Identification, pp. 2427-2432
Leva, Alberto — Pol. di Milano
Piroddi, Luigi — Pol. Di Milano

10:50-11:10
Design of Observers for Continuous-Time Nonlinear Systems by Using Neural Networks, pp. 2433-2438
Alessandri, Angelo — CNR National Res. Council of Italy
Cervellera, Cristiano — CNR National Res. Council of Italy
Grassia, Filippo Aldo — CNR National Res. Council of Italy
Sanguineti, Marcello — Univ. di Genova

11:10-11:30
Discrete Time Neural Network Output Feedback Control of Nonlinear Systems in Non-Strict Feedback Form, pp. 2439-2444
He, Pingan — Univ. of Missouri-Rolla
Jagannathan, Sarangapani — Univ. of Missouri-Rolla

ThA15 Beacon Comp F

Fault Detection Methodology (Regular Session)

Chair: Collins, Emmanuel G. — Florida A & M Univ. - Florida State Univ.
Co-Chair: Simani, Silvio — Univ. of Ferrara

09:30-09:50
Hybrid Model Identification for Fault Diagnosis of Non--Linear Dynamic Processes, pp. 2445-2450
Simani, Silvio — Univ. of Ferrara (ITALY)

09:50-10:10
Robust Fault Detection and Isolation Using Robust L1 Estimation, pp. 2451-2456
Curry, Tramone — FAMU-FSU Coll. of Engineering
Collins, Emmanuel G. — Florida A & M Univ. - Florida State Univ.

10:10-10:30
Observers for Fault Detection in Networked Systems with Random Delays, pp. 2457-2462
Kolmanovsky, Ilya V. — Ford Motor Co.
Winstead, Vincent — Univ. of Wisconsin-Madison

10:30-10:50
An Adaptive Observer for Fault Diagnosis in Nonlinear Discrete-Time Systems, pp. 2463-2468
Caccavale, Fabrizio — Univ. degli Studi della Basilicata
Villani, Luigi — Univ. degli Studi di Napoli Federico II

10:50-11:10
Identification Techniques for Chemical Process Fault Diagnosis, pp. 2469-2474
Simani, Silvio — Univ. of Ferrara (ITALY)

11:10-11:30
An Optimization Approach for Worst-Case Fault Detection Observer Design, pp. 2475-2480
Wang, Haibo — School of Electrical & Electronic Engineering, Nanyang Tech. Uni
Wang, Jian Liang — Nanyang Tech. Univ.
Lam, James — Univ. of Hong Kong

ThA16 Beacon Comp A

Control of Micro, Nano, and Quantum Systems (Regular Session)

Chair: Armaou, Antonios — The Pennsylvania State Univ.
Co-Chair: Berg, Jordan M. — Texas Tech. Univ.

09:30-09:50
Optimal Population Transfers for a Quantum System in the Limit of Large Transfer Time, pp. 2481-2486
Grivopoulos, Symeon — Univ. of California at Santa Barbara
Bamieh, Bassam — Univ. of California at Santa Barbara

09:50-10:10
Fabrication and Control of a 6-DOF Magnetic Levitation Stage with Nanopositioning Capability, pp. 2487-2492
Kim, Won-jong — Texas A&M Univ.
Verma, Shobhit — Texas A&M Univ.

10:10-10:30
Design and Control of a 6-DOF High-Precision Integrated Positioner, pp. 2493-2498
Kim, Won-jong — Texas A&M Univ.
Hu, Tiejun — Texas A&M Univ.
Bhat, Nikhil — Pathway Tech.

10:30-10:50
Amplitude Phase Dynamics and Fixed Points in Tapping-Mode Atomic Force Microscopy, pp. 2499-2504
Sebastian, Abu — IBM Res.
Gannepalli, Anil — Iowa State Univ.
Salapaka, Murti V. — Iowa State Univ.

10:50-11:10
*Servo Design for a SPM Lithography System**
Yen, Jia-Yush — National Taiwan Univ.
Lin, I-Ming — National Taiwan Univ.

11:10-11:30
Design and Control of a Vibrating Gyroscope, pp. 2505-2510
Khasawneh, Qais — Univ. of Akron
Batur, Celal — Univ. of akron

ThA17 Beacon Comp G

Hybrid Systems (Regular Session)

Chair: Gonzalez, Oscar R. — Old Dominion Univ.
Co-Chair: Krogh, Bruce H. — Carnegie Mellon Univ.

09:30-09:50

On Existence of Maximal Solution for Infinite Dimensional Perturbed Algebraic Riccati Equations Associated to Markov Jump Linear Systems, pp. 2511-2515

Baczynski, Jack — Lab. Nacional de Computacao Cientifica - LNCC
Fragoso, Marcelo D. — Lab. Nacional de Computacao Cientifica - LNCC

09:50-10:10

Predictive Control of Hybrid Systems under a Multi-MLD Formalism with State Space Polyhedral Partition, pp. 2516-2521

THOMAS, Jean — Supélec
Dumur, Didier — Ec. Superieure d'Electricite
buisson, Jean — Supelec

10:10-10:30

On a Class of Controlled Invariant Sets, pp. 2522-2527

Iordache, Marian — Univ. of Notre Dame
Antsaklis, Panos J. — Univ. of Notre Dame

10:30-10:50

Probabilistic Controllability Analysis of Sampled-Data/Discrete-Time Piecewise Affine Systems, pp. 2528-2533

Azuma, Shun-ichi — Tokyo Inst. of Tech.
Imura, Jun-ichi — Tokyo Inst. of Tech.

10:50-11:10

On the Stability of Jump-Linear Systems Driven by Finite-State Machines with Markovian Inputs, pp. 2534-2539

Patilkulkarni, Sudarshan — Old Dominion Univ.
Herencia-Zapana, Heber — Old Dominion Univ.
Gray, W. Steven — Old Dominion Univ.
Gonzalez, Oscar R. — Old Dominion Univ.

11:10-11:30

On Uniform Convergence in Markov Jump Linear Systems Problems and the Kolmogorov Forward Equation, pp. 2540-2544

Baczynski, Jack — Lab. Nacional de Computacao Cientifica - LNCC
Fragoso, Marcelo D. — Lab. Nacional de Computacao Cientifica - LNCC

ThA18 Beacon Comp B

Adaptive Control with Constraints (Regular Session)

Chair: Joshi, Suresh M. NASA Langley Res. Ctr.
Co-Chair: Polycarpou, Marios M. Univ. of Cincinnati

09:30-09:50

Positive Mu-Modification for Stable Adaptation in the Presence of Input Constraints, pp. 2545-2550

Lavretsky, Eugene The Boeing Co.
Hovakimyan, Naira Virginia Pol. Inst. and State Univ.

09:50-10:10

An Anti-Windup Design for Single Input Adaptive Control Systems in Strict Feedback Form, pp. 2551-2556

Do, Hyun Min Seoul National Univ.
Basar, Tamer Univ. of Illinois at Urbana-Champaign
Choi, Jin Young Seoul National Univ.

10:10-10:30

On-Line Approximation Based Control of Uncertain Nonlinear Systems with Magnitude, Rate and Bandwidth Constraints on the States and Actuators, pp. 2557-2562

Farrell, Jay A. Univ. of California at Riverside
Polycarpou, Marios M. Univ. of Cincinnati
Sharma, Manu Barron Associates Inc.

10:30-10:50

Reinforcement Learning-Based Output Feedback Control of Nonlinear Systems with Input Constraints, pp. 2563-2568

He, Pingan Univ. of Missouri-rolla
Jagannathan, Sarangapani Univ. of Missouri-Rolla

10:50-11:10

Neural Network Control of a Class of Nonlinear Systems with Actuator Saturation, pp. 2569-2574

Gao, Wenzhi Louisiana Tech. Univ.
Selmic, Rastko R. Louisiana Tech. Univ.

11:10-11:30

Decentralized Control with Input Saturation, pp. 2575-2579

Saberi, Ali Washington State Univ.
Stoorvogel, Anton A. Eindhoven Univ. of Tech.
Sannuti, Peddapullaiah Rutgers Univ.

ThA19 Beacon Comp H

Sliding Mode Control IV (Regular Session)

Chair: Thein, May-Win — Univ. of New Hampshire
Co-Chair: Sanchez, Edgar N. — CINVESTAV

09:30-09:50

Power System Singularly Perturbed Discontinuous Control, pp. 2580-2585

Soto-Cota, Adolfo — Ph.d. Student
Fridman, Leonid M. — National Autonomous Univ. of Mexico
Loukianov, Alexander G. — CINVESTAV
Canedo, Jose M. — CINVESTAV

09:50-10:10

Speed Regulation of Induction Motors: An Adaptive Sensorless Sliding Mode Control Scheme, pp. 2586-2591

Aurora, Claudio — CESI spa
Ferrara, Antonella — Univ. of Pavia

10:10-10:30

A Higher Order Sliding Mode Controller for a Class of MIMO Nonlinear Systems: Application to PM Synchronous Motor Control, pp. 2592-2597

Laghrouche, Salah — Ec. Centrale de Nantes / CNRS
Plestan, Franck — Ec. Centrale De Nantes - Cnrs
Glumineau, Alain — Ec. Centrale Nantes

10:30-10:50

On the Discrete-Time Modelling and Control of Induction Motors with Sliding Modes, pp. 2598-2602

Castillo-Toledo, Bernardino — Estudios Avanzados del IPN
Di Gennaro, Stefano — Univ. di L'Aquila
Loukianov, Alexander G. — CINVESTAV
Rivera, Jorge — CINVESTAV Unidad Guadalajara

10:50-11:10

Electro-Hydraulic Actuator Trajectory Tracking, pp. 2603-2608

Avila, Manuel A. — CINVESTAV, Unidad Guadalajara
Loukianov, Alexander G. — CINVESTAV
Sanchez, Edgar N. — CINVESTAV

11:10-11:30

Dynamic Modeling and Sliding Mode Control of a Five-Link Biped During the Double Support Phase, pp. 2609-2614

Mu, Xiuping — Univ. of MAnitoba
Wu, Qiong — Univ. of Manitoba

ThM01 Commonwealth

Sensing, Modeling and Control of Xerography (Tutorial Session)

Chair: Chiu, George T.-C. — Purdue Univ.
Co-Chair: Li, Perry Y. — Univ. of Minnesota
Organizer: Chiu, George T.-C. — Purdue Univ.
Organizer: Li, Perry Y. — Univ. of Minnesota
Organizer: Hamby, Eric S. — Xerox Corp.

13:30-14:30
A Control-Oriented Survey of Xerographic Systems: Basic Concepts to New Frontiers (I), pp. 2615-2629
Hamby, Eric S. — Xerox Corp.
Gross, Eric — Xerox Corp.

14:30-14:50
Time Sequential Sampling and Reconstruction of Tone and Color Reproduction Functions for Xerographic Printing (I), pp. 2630-2635
Li, Perry Y. — Univ. of Minnesota
Sim, Teck Ping — Univ. of Minnesota
Lee, Dongjun — Univ. of Illinois at Urbana-Champaign

14:50-15:10
A Robust Estimation Algorithm for Printer Modeling (I), pp. 2636-2641
Rotea, Mario — Purdue Univ.
Lana, Carlos — Purdue Univ.

15:10-15:30
Incorporating Human Visual Model and Spatial Sampling in Banding Artifact Reduction (I), pp. 2642-2647
Chen, Cheng-Lun — Lexmark
Chiu, George T.-C. — Purdue Univ.

ThM02 Independence Ballroom East

Uncertain Systems (Regular Session)

Chair: Runolfsson, Thordur — The Univ. of Oklahoma
Co-Chair: Barmish, B. Ross — Univ. of Wisconsin

13:30-13:50
On the Stability of Interval Matrices, pp. 2648-2653
Franze, Giuseppe — Univ. degli Studi della Calabria
Carotenuto, Luciano — Univ. degli Studi della Calabria
Muraca, Pietro — Univ. degli Studi della Calabria

13:50-14:10
Improved Bounded Real Lemma for Continuous-Time Stochastic Systems with Polytopic Uncertainties, pp. 2654-2658
Gao, Huijun — Harbin Inst. of Tech.
Wang, Changhong — Harbin Inst. of Tech.

14:10-14:30
Uncertainty Analysis of Complex Dynamical Systems, pp. 2659-2664
Mezic, Igor — Univ. of California, Santa Barbara
Runolfsson, Thordur — Univ. of Oklahoma

14:30-14:50
A Bisection Algorithm for the Mixed Mu Upper Bound and Its Supremum, pp. 2665-2670
Fransson, Carl-magnus — Chalmers Univ. of Tech.
Saunders, Michael — Stanford Univ.

14:50-15:10
On Robust Stability with Nonlinear Parameter Dependence: Some Benchmark Problems Illustrating the Dilation Integral Method, pp. 2671-2673
Babayigit, Akin — Yale Univ.
Barmish, B. Ross — Univ. of Wisconsin
Shcherbakov, Pavel S. — Moscow Inst. of Control Sciences

15:10-15:30
On the Stepwise Hurwitz Property: A New Tool for Robust Output Feedback Stabilization, pp. 2674-2680
Fu, Minyue — Univ. of Newcastle
Barmish, B. Ross — Univ. of Wisconsin

ThM03 Hampton A

Control Applications II (Regular Session)

Chair: Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign
Co-Chair: Gerdes, J. Christian — Stanford Univ.

13:30-13:50
H_infty Tracking Control of a Rigid Spacecraft, pp. 2681-2686
Luo, Wencheng — Nanyang Tech. Univ.
Chu, Yun-Chung — Nanyang Tech. Univ.
Ling, Keck-Voon — Nanyang Tech. Univ.

13:50-14:10
Input Shaper Design in Convex Optimization Framework with Frequency Domain Constraints, pp. 2687-2692
Bae, Hong S. — Stanford Univ.
Gerdes, J. Christian — Stanford Univ.

14:10-14:30
Lateral Adaptive Control for Vehicle Lane Keeping, pp. 2693-2698
Netto, Mariana — LIVIC - LCPC/INRETS
Chaib, Salim — LIVIC - LCPC/INRETS
Mammar, Said — INRETS

14:30-14:50
An Anti-Lock Braking Control System for a Hybrid Electromagnetic/electrohydraulic Brake-By-Wire System, pp. 2699-2704
Anwar, Sohel — Visteon Corp.

14:50-15:10
Adaptive Observer for Traffic Density Estimation, pp. 2705-2710
Alvarez, Luis — Univ. Nacional Autonoma De Mexico
Munoz, Laura — Univ. of California at Berkeley
Sun, Xiaotian — Univ. of California at Berkeley
Horowitz, Roberto — Univ. of California at Berkeley

15:10-15:30
Control of High-Performance Mini and Microscale Electrical Cylinders, pp. 2711-2716
Lyshevski, Sergey — Rochester Inst. of Tech.

ThM04 Hampton B

Linear Systems and Control II (Regular Session)

Chair: Hauksdottir, Anna Soffia — Univ. of Iceland
Co-Chair: kariwala, Vinay — Univ. of Alberta

13:30-13:50
H2-Optimal Decoupling of Previewed Signals in the Continuous-Time Domain, pp. 2717-2722
Marro, Giovanni — Univ. of Bologna
Ntogramatzidis, Lorenzo — Univ. of Bologna
Zattoni, Elena — Univ. of Bologna

13:50-14:10
Sensitivity of Time Response to Characteristic Ratios, pp. 2723-2728
Kim, Youngchol — Chungbuk National Univ.
Kim, Keunsik — Daecheon Coll.
Manabe, Shunji — -

14:10-14:30
Optimal Sensor and Actuator Location for Descriptor Systems Using Generalized Gramians and Balanced Realizations, pp. 2729-2734
Marx, Benoit — Lab. d'Automatique de Grenoble
Koenig, Damien — Lab. d'Automatique de Grenoble
Georges, Didier — Lab. d'Automatique de Grenoble

14:30-14:50
Common Stabilizers for Linear Control Systems in the Presence of Actuators Outage, pp. 2735-2739
Liang, Yew-Wen — National Chiao Tung Univ.
Liaw, Der-Cherng — National Chiao Tung Univ.

14:50-15:10
Controller Tuning Via Minimization of Time Weighted Absolute Error, pp. 2740-2744
Mossberg, Magnus — Karlstad Univ.

15:10-15:30
Inequalities and Bounds for the Zeros of Polynomials Using Perron-Frobenius and Gerschgorin Theories, pp. 2745-2750
Hasan, Mohammed A. — Univ. of Minnesota

ThM05 Exeter

Longitudinal Vehicle Control (Regular Session)

Chair: Hedrick, Karl — Univ. of California at Berkeley
Co-Chair: Beard, Randal W. — Brigham Young Univ.

13:30-13:50
Design and Experimental Implementation of Longitudinal Control for Automated Transit Buses, pp. 2751-2756
Song, Bongsob — Ajou Univ.
Hedrick, Karl — Univ. of California at Berkeley

13:50-14:10
Model Reference Control Approach for Safe Longitudinal Control, pp. 2757-2762
Martinez, John-Jairo — LAG-INPG
Canudas-de-Wit, Carlos — LAG-INPG

14:10-14:30
Investigation of Different Techniques for Determining the Road Uphill Gradient and the Pitch Angle of Vehicles, pp. 2763-2768
Massel, Thomas — Univ. of Applied Sciences Gelsenkirchen
Ding, E.L. — Univ. of Applied Sciences Gelsenkirchen
Arndt, Marc — Univ. of Apllied Sciences Gelsenkirchen

14:30-14:50
Decentralized Control of a Large Platoon of Vehicles Using Non-Identical Controllers, pp. 2769-2776
Khatir, Maziar E. — Univ. of Toronto
Davison, Edward J. — Univ. of Toronto

14:50-15:10
Hybrid Variable Structure Path Tracking Control of Articulated Vehicles, pp. 2777-2782
Ferrara, Antonella — Univ. of Pavia
Magnani, Lorenza — Univ. of Pavia

15:10-15:30
Novel Integrated Management System Design of Electric Motorcycles, pp. 2783-2788
Hsu, Su-Hau — National Taiwan Univ.
Hsu, De-wei — National Taiwan Univ.
Fu, Li-Chen — National Taiwan Univ.
Hsu, Yu-Po — National Taiwan Univ.

ThM06 Dalton

Optimization II (Regular Session)

Chair: Won, Chang-Hee — Univ. of North Dakota
Co-Chair: Stewart, Paul — Univ. of Sheffield

13:30-13:50
*On-Line Design of Robust Fuzzy-Logic Control Systems by Multi-Objective Evolutionary Methods**
Stewart, Paul — Univ. of Sheffield
Fleming, P.J. — Univ. of Sheffield
Stone, David — Univ. of Sheffield

13:50-14:10
Application of Stochastic Optimization to Collision Avoidance, pp. 2789-2794
Burnett, Rebecca — Johns Hopkins Univ. Applied Physics Lab.

14:10-14:30
Stochastic Approximation on Discrete Sets Using Simultaneous Perturbation Difference Approximations, pp. 2795-2798
Hill, Stacy D. — Johns Hopkins Univ.
Gerencser, Laszlo — Hungarian Acad. of Sciences
Vago, Zsuzsanna — Computer & Automation Inst. of HAS

14:30-14:50
A Riccati-Genetic Algorithms Approach to Fixed-Structure Controller Synthesis, pp. 2799-2804
Farag, Adel Omram — Tech. Univ. Hamburg-Harburg
Werner, Herbert — Tech. Univ. Hamburg-Harburg

14:50-15:10
Simultaneous Perturbation Extremum Seeking Method for Dynamic Optimization Problems, pp. 2805-2810
Nusawardhana, - — Purdue Univ.
Zak, Stanislaw H. — Purdue Univ.

15:10-15:30
Continuous Particle Swarm Optimization Technique with Stability Analysis, pp. 2811-2817
Emara, Hassan M. — Faculty of Engineering Cairo Univ.
Mohamed, Hossam A. Abdel Fattah — Cairo Univ.

ThM07 Gardner A

Identification of Linear Systems (Regular Session)

Chair: Meckl, Peter H. — Purdue Univ.
Co-Chair: Colaneri, Patrizio — Pol. di Milano

13:30-13:50
Least Costly Identification Experiment for Control. a Solution Based on a High-Order Model Approximation, pp. 2818-2823
Bombois, Xavier — Delft Univ. of Tech.
Scorletti, Gerard — ISMRA
Van den Hof, Paul M.J. — Delft Univ. of Tech.
Gevers, Michel — Univ. Catholique de Louvain

13:50-14:10
Confidence Measure Estimation in Dynamical Systems Model Input Set Selection, pp. 2824-2829
Deignan, Paul — Purdue Univ.
King, Galen — Purdue Univ.
Meckl, Peter — Purdue Univ.
Jennings, Kristofer — Purdue Univ.

14:10-14:30
Closed-Loop Identification of Multivariable Processes with Part of the Inputs Controlled, pp. 2830-2835
Leskens, Martijn — TNO Environment, Energy and Process Innovation
Van den Hof, Paul M.J. — Delft Univ. of Tech.

14:30-14:50
H-Infinity Parameter Estimation for State-Space Models, pp. 2836-2839
Kiriakidis, Kiriakos — U.S. Naval Acad.
O'Brien, Richard — United States Naval Acad.

14:50-15:10
System Realization Using 2-D Output Measurements, pp. 2840-2845
Piou, Jean Eugene — MIT Lincoln Lab.

15:10-15:30
Instrumental Variable Methods for Continuous-Time Model Identification in Closed-Loop, pp. 2846-2851
Gilson, Marion — Univ. Henri Poincaré, Nancy 1
Garnier, Hugues — Univ. Henri Poincaré, Nancy 1
Van den Hof, Paul M.J. — Delft Univ. of Tech.

ThM08 Gardner B

Digital/sampled-Data Control I (Regular Session)

Chair: Niemann, Henrik — Tech. Univ. of Denmark
Co-Chair: Tomizuka, Masayoshi — UC Berkleley/NSF

13:30-13:50
Verifying Asymptotic Bounds for Discrete-Time Sliding Mode Systems with Disturbance Inputs, pp. 2852-2857
Kapinski, James — Carnegie Mellon Univ.
Krogh, Bruce H. — Carnegie Mellon Univ.

13:50-14:10
Sensitivity Minimization for Controller Implementations: Fixed-Point Approach, pp. 2858-2863
Ko, Hsien-Ju — Tatung Univ.
Yu, Wen-Shyong — Tatung Univ.

14:10-14:30
*Structural Properties of H-Inf Discrete-Time Controllers Based on J-Lossless Factorisations**
Suchomski, Piotr — Gdansk Univ. of Tech.

14:30-14:50
Fixed-Point Digital Controller, pp. 2864-2869
Chetelat, Olivier — CSEM SA

14:50-15:10
A Convex Approach for Robust State Feedback Control of Discrete-Time Systems with State Delay, pp. 2870-2875
Leite, Valter J. S. — CEFET/MG - UnED Div.
Tarbouriech, Sophie — LAAS-CNRS
Peres, Pedro L. D. — Univ. of Campinas

15:10-15:30
A Frequency-Domain Solution to the H^2 Sampled-Data Problem†
Fardad, Makan — Univ. of California, Santa Barbara
Bamieh, Bassam — Univ. of California at Santa Barbara

ThM09 Clarendon

Noise and Vibration Control (Regular Session)

Chair: Sano, Akira — Keio Univ.
Co-Chair: Fuentes, Robert — Boeing-SVS, Inc.

13:30-13:50
Hybrid Feedforward-Feedback Active Noise Control, pp. 2876-2881
Streeter, Alex -
Ray, Laura — Dartmouth Coll.
Collier, Robert — Dartmouth Coll.

13:50-14:10
Integrated Opto-Mechanical Modeling with Scene-Based Metrology Techniques for Structural Dynamics Compensation, pp. 2882-2888
Fahnestock, Eugene G. — Department of Aerospace Engineering and Aviation, The Ohio State
Fuentes, Robert — Boeing-SVS Inc.
Erwin, Richard Scott — Air Force Res. Lab. Space Vehicles Directorate

14:10-14:30
Modeling and Adaptive Control of a Coordinate Measuring Machine, pp. 2889-2894
Orbak, Ali Yurdun — Uludag Univ.

14:30-14:50
Direct Adaptive Approach to Multichannel Active Noise Control and Sound Reproduction, pp. 2895-2900
Ohta, Yusuke — Keio Univ.
Sano, Akira — Keio Univ.

14:50-15:10
The Application of Fractional Order Control to Backlash Vibration Suppression, pp. 2901-2906
Ma, Chengbin — the Univ. of Tokyo
Hori, Yoichi — the Univ. of Tokyo

15:10-15:30
Vibration Control of a Cantilever Beam Using Multiple Model Adaptive Control, pp. 2907-2908
Tjahyadi, Hendra — Flinders Univ.
He, Fangpo — Flinders Univ.
Sammut, Karl — Flinders Univ.

ThM10 Berkeley

Nonlinear Process Analysis and Control (Invited Session)

Chair: Kazantzis, Nikolaos — Worcester Pol. Inst.
Co-Chair: Guay, Martin — Queen's Univ.
Organizer: Kazantzis, Nikolaos — Worcester Pol. Inst.
Organizer: Guay, Martin — Queen's Univ.

13:30-13:50
Dynamic Precompensation and Output Feedback Control of Integrated Process Networks (I), pp. 2909-2914
Contou-Carrere, Marie-Nathalie — Univ. of Minnesota
Daoutidis, Prodromos — Univ. of Minnesota

13:50-14:10
Model Reduction for Process Control Using Iterative Nonlinear Identification (I), pp. 2915-2920
Vargas, Alejandro — Univ. of Stuttgart
Allgower, Frank — Univ. of Stuttgart

14:10-14:30
A Model-Based Control Method Applicable to Unstable, Non-Minimum-Phase, Nonlinear Processes (I), pp. 2921-2924
Panjapornpon, Chanin — Drexel Univ.
Soroush, Masoud — Drexel Univ.
Seider, Warren D. — Univ. of Pennsylvania

14:30-14:50
A Method for PID Controller Tuning Using Nonlinear Control Techniques (I), pp. 2925-2930
Mhaskar, Prashant — Univ. of California at Los Angeles
El-Farra, Nael H. — Univ. of California Los Angeles
Christofides, Panagiotis D. — Univ. of California at Los Angeles

14:50-15:10
Nonlinear Observer Design for State and Disturbance Estimation (I), pp. 2931-2936
Kravaris, Costas — Univ. of Patras
Sotiropoulos, Vassilios — Univ. of Patras
Georgiou, Costas — Univ. of Patras
Kazantzis, Nikolaos — Worcester Pol. Inst.
Xiao, MingQing — Southern Illinois Univ.
Krener, Arthur J — Univ. of California at Davis

15:10-15:30
Adaptive Extremum-Seeking Receding Horizon Control of Nonlinear Systems (I), pp. 2937-2942
adetola, veronica — Queen's Univ.
Dehaan, Darryl — Queen's Univ.
Guay, Martin — Queen's Univ.

ThM11 Fairfax A

Communication Networks: Convergence and Stability Analysis (Regular Session)

Chair: Dullerud, Geir E. — Univ. of Illinois at Urbana-champaign
Co-Chair: Haddad, Abraham H. — Northwestern Univ.

13:30-13:50
Lyapunov-Based Stability Analysis of REM Congestion Control, pp. 2943-2947
Imer, Orhan Cagri — Univ. of Illinois at Urbana-Champaign
Basar, Tamer — Univ. of Illinois at Urbana-Champaign

13:50-14:10
Global Stability of Internet Congestion Controllers with Heterogeneous Delays, pp. 2948-2953
Ying, Lei — Univ. of Illinois at Urbana-Champaign
Dullerud, Geir E. — Univ. of Illinois at Urbana-Champaign
Srikant, Rayadurgam — Univ. of Illinois at Urbana-Champaign

14:10-14:30
About the Stability of Active Queue Management Mechanisms, pp. 2954-2959
Bauso, Dario — Univ. di Palermo
Giarre, Laura — Univ. Di Palermo
Neglia, Giovanni — Univ. degli Studi di Palermo

14:30-14:50
Nonlinear Analysis of RED a Comparative Study, pp. 2960-2965
Jiang, Kai — Shanghai Jiaotong Univ.
Wang, Xiaofan — Shanghai JiaoTong Univ.
Xi, Yugeng — Shanghai Jiao Tong Univ.

14:50-15:10
Washout Filter-Aided RED Control, pp. 2966-2971
Ranjan, Priya — Inst. For Systems Res.
La, Richard J. — Univ. of Maryland, Coll. Park
Abed, Eyad H. — Univ. of Maryland

15:10-15:30
Convergence Results for Synchronised Communication Networks, pp. 2972-2975
Berman, Abraham — Department of Mathematics, The Tech. Israel
Shorten, Robert — The Hamilton Inst. NUI Maynooth, Ireland
Leith, Douglas J. — The Hamilton Inst. NUI Maynooth, Ireland

ThM12 Fairfax B

Spacecraft and Underwater Vehicles (Regular Session)

Chair: How, Jonathan P. — Massachusetts Inst. of Tech.
Co-Chair: McLain, Timothy W. — Brigham Young Univ.

13:30-13:50
A Survey of Spacecraft Formation Flying Guidance and Control (Part II): Control, pp. 2976-2985
Scharf, Daniel — Jet Propulsion Lab.
Hadaegh, Fred Y. — California Inst. of Tech.
Ploen, Scott — Jet Propulsion Lab.

13:50-14:10
Energy Optimal Reconfiguration for Large Scale Formation Flying, pp. 2986-2991
Sultan, Cornel — Scientific Systems Company, Inc.
Seereeram, Sanjeev — Scientific Systems Company, Inc.
Mehra, Raman K. — Scientific Systems Co. Inc.
Hadaegh, Fred Y. — California Inst. of Tech.

14:10-14:30
Formation of Formations: Hierarchy and Stability, pp. 2992-2997
Williams, Anca — Portland State Univ.
Glavaski, Sonja T. — Honeywell Lab.
Samad, Tariq — Honeywell Lab.

14:30-14:50
Directional Control of an Underwater Vehicle by Feedback Passivation, pp. 2998-3003
Kim, Hye-Young — Virginia Tech.
Woolsey, Craig — Virginia Tech.

14:50-15:10
Logic-Based Switching Control for Trajectory-Tracking and Path-Following of Underactuated Autonomous Vehicles with Parametric Modeling Uncertainty, pp. 3004-3010
Aguiar, Antonio Pedro — Univ. of California, Santa Barbara
Hespanha, Joao P. — Univ. of California, Santa Barbara

15:10-15:30
Fin/Rudder Roll Stabilisation of Ships: A Gain Scheduling Control Methodology, pp. 3011-3016
TANGUY, Hervé — SIREHNA - IRCCyN
Lebret, Guy — IRCCyN - Ec. Centrale de Nantes

ThM13 Beacon Comp D

Control of Nonlinear Systems II (Regular Session)

Chair: Lee, Jay H. — Georgia Inst. of Tech.
Co-Chair: Huang, Jie — Chinese Univ. of Hong Kong

13:30-13:50
H-Infinity Output Feedback Control for a Class of Nonlinear Systems, pp. 3017-3022
Coutinho, Daniel Ferreira — Pontificia Univ. Catolica do Rio Grande do Sul
Trofino, Alexandre — Federal Univ. of Santa Catarina

13:50-14:10
State and Output Feedback Stabilization of a Class of Discrete-Time Nonlinear Systems, pp. 3023-3028
Bouazza, Kheir Eddine — Iut De Longwy. Univ. Henri Poincar -nancy
Boutayeb, M. — CRAN-CNRS URA 821
Darouach, Mohamed — Univ. Henri Poincare-Nancy

14:10-14:30
Interconnection and Damping Assignment Passivity--Based Control of Mechanical Systems with Underactuation Degree One, pp. 3029-3034
Acosta, José Ángel — Univ. de Sevilla
Ortega, Romeo — LSS-SUPELEC
Astolfi, Alessandro — Imperial Coll.

14:30-14:50
Robust Observer Backstepping Neural Network Control of Nonlinear Systems in Strict Feedback Form, pp. 3035-3040
Chatlatanagulchai, Withit — Purdue Univ.
Meckl, Peter H. — Purdue Univ.

14:50-15:10
Empirical Model Based Control of Nonlinear Processes Using Approximate Dynamic Programming, pp. 3041-3046
Lee, Jong Min — Georgia Inst. of Tech.
Lee, Jay H. — Georgia Inst. of Tech.

15:10-15:30
Global Output Feedback Stabilization for Uncertain Nonlinear Systems with Output Dependent Incremental Rate, pp. 3047-3052
Chen, Zhiyong — Chinese Univ. of Hong Kong
Huang, Jie — Chinese Univ. of Hong Kong

ThM14 Beacon Comp E

Control Systems Analysis and Design (Regular Session)

Chair: Munro, Neil — UMIST
Co-Chair: Hayakawa, Tomohisa — The Univ. of Tokyo

13:30-13:50
Control of a Planar System with Quantized Input/Output, pp. 3053-3058
Cepeda, Alfonso — Univ. de Sevilla
Astolfi, Alessandro — Imperial Coll.

13:50-14:10
Feedback Control with Central Pattern Generator for Decentralized Coordination of Prototype Mechanical Rectifier, pp. 3059-3064
Iwasaki, Tetsuya — Univ. of Virginia
Liu, Bo — Univ. of Virginia

14:10-14:30
Achieving Diagonal Dominance by Frequency Interpolation, pp. 3065-3069
Nobakhti, Amin — UMIST
Munro, Neil — UMIST

14:30-14:50
Control of Multivariable Systems with Interval Parameters, pp. 3070-3074
Shao, Yan — Bradford Univ.
Zhang, Y. M. — Univ. of Kentucky

14:50-15:10
Parameter Governors for Discrete-Time Nonlinear Systems with Pointwise-In-Time State and Control Constraints, pp. 3075-3081
Kolmanovsky, Ilya V. — Ford Motor Co.
Sun, Jing — Univ. of Michigan

15:10-15:30
Visualization of PLC Programs Using XML, pp. 3082-3087
Bani Younis, Mohammed — Univ. of Kaiserslutern
Frey, Georg — Univ. of Kaiserslautern

ThM15 Beacon Comp F

Application of Fault Detection I (Regular Session)

Chair: Ray, Asok — Pennsylvania State Univ.
Co-Chair: Stankovic, Alex M. — Northeastern Univ.

13:30-13:50
Leakage Fault Identification in a Hydraulic Positioning System Using Extended Kalman Filter, pp. 3088-3093
An, Liang — U of Manitoba
Sepehri, Nariman — Uinv. of Manitoba

13:50-14:10
Model-Based Broken Rotor Bar Detection on an IFOC Driven Squirrel Cage Induction Motor, pp. 3094-3099
Rodriguez-Cortes, Hugo — Northeastern Univ.
Stankovic, Alex M. — Northeastern Univ.
Hadjicostis, Christoforos — Univ. of Illinois at Urbana-Champaign

14:10-14:30
Classifying Disc Defects in Optical Disc Drives by Using Time-Series Clustering, pp. 3100-3105
van Helvoirt, Jan — Tech. Univ. Eindhoven
Leenknegt, George A. L. — Philips Optical Storage
Steinbuch, Maarten — Tech. Univ. Eindhoven
Goossens, Henk J. — Philips Res. East Asia

14:30-14:50
Fault Diagnosis in Turbine Engines Using Neural Networks Clustering Technique[†]
Kim, Kyusung — Honeywell Inc

14:50-15:10
Fault Detection in a Belt-Drive System Using a Proportional Reduced Order Observer, pp. 3106-3110
Martinez-Guerra, Rafael — CINVESTAV, Depto. de Control Automático.
Garrido, Rubén — CINVESTAV, Depto. de Control Automático.
Palacios, René — CINVESTAV, Depto. de Control Automático.
Mendoza, Juan — CINVESTAV, Depto. de Control Automático.

15:10-15:30
A Mixture Probabilistic PCA Model for Multivariate Manufacturing Processes Monitoring, pp. 3111-3115
Zhang, Feng — Texas A&M Univ.

ThM16 Beacon Comp A

Control in Atomic Force Microscopy (Invited Session)

Chair: Salapaka, Srinivasa — Univ. of Illinois at Urbana-Champaign
Co-Chair: Devasia, Santosh — Univ. of Washington
Organizer: Salapaka, Srinivasa — Univ. of Illinois at Urbana-Champaign

13:30-13:50

Control of Dynamics-Coupling Effects in Piezo-Actuator for High-Speed AFM Operation (I), pp. 3116-3121

Tien, Szuchi — Univ. of Washington
Zou, Qingze — Univ. of Washington
Devasia, Santosh — Univ. of Washington

13:50-14:10

Thermal Noise Response Based Control of Tip-Sample Separation in an Atomic Force Microscope (I), pp. 3122-3127

Gannepalli, Anil — Iowa State Univ.
Sebastian, Abu — IBM Res.
Cleveland, Jason — Asylum Res.
Salapaka, Murti V. — Iowa State Univ.

14:10-14:30

On Dual Actuation in Atomic Force Microscopes (I), pp. 3128-3133

El Rifai, Khalid — MIT
El Rifai, Osamah M. — Massachusetts Inst. of Tech.
Youcef-Toumi, Kamal — Massachusetts Inst. of Tech.

14:30-14:50

Design of a Decoupling Controller for Electrostatically Coupled Microcantilevers Based on Current Measurement (I), pp. 3134-3139

Napoli, Mariateresa — Univ. of California at Santa Barbara
Bamieh, Bassam — Univ. of California at Santa Barbara

14:50-15:10

*A New Sample-Profile Estimate for Faster Imaging in Atomic Force Microscopy (I)**

Salapaka, Srinivasa — Univ. of Illinois at Urbana-Champaign
De, Tathagata — Iowa State Univ.

15:10-15:30

*Effects of Internal Resonance on the Nonlinear Dynamics of Tapping Mode AFM Microcantilevers (I)**

hu, Shuiqing — Purdue Univ. ME Dept.
Raman, Arvind — Purdue Univ.
Reifenberger, Ronald — Purdue Univ.
Crittenden, Scott — Purdue Univ.

ThM17 Beacon Comp G

Stochastic Systems (Regular Session)

Chair: Wang, Hong — UMIST
Co-Chair: Skliar, Mikhail — Univ. of Utah

13:30-13:50
Cramér-Rao Bounds and Monte Carlo Calculation of the Fisher Information Matrix in Difficult Problems, pp. 3140-3145
Spall, James C. — Johns Hopkins Univ.

13:50-14:10
Asymptotic Properties of an Output-Feedback Suboptimal Control Scheme for Stochastic Bilinear Systems, pp. 3146-3151
Carravetta, Francesco — IASI-CNR
Mavelli, Gabriella — IASI-CNR

14:10-14:30
Optimization of Stochastic Uncertain Systems: Large Deviations and Robustness for Partially Observable Diffusions, pp. 3152-3157
Charalambous, Charalambos D. — Univ. of Ottawa
Rezaei, Farzad — PhD Student

14:30-14:50
Robust H_infinity Filtering for 2-D Stochastic Systems, pp. 3158-3163
Gao, Huijun — Harbin Inst. of Tech.
Lam, James — Univ. of Hong Kong
Wang, Changhong — Harbin Inst. of Tech.
Xu, Shengyuan — The Univ. of Hong Kong

14:50-15:10
Characterization of the Optimal Disturbance Attenuation for Nonlinear Stochastic Partially Observable Uncertain Systems, pp. 3164-3169
Charalambous, Charalambos D. — Univ. of Ottawa
Rezaei, Farzad — PhD Student

15:10-15:30
Robust Stabilization of Markovian Jump Linear Singular Systems with Wiener Process, pp. 3170-3175
raouf, jamila — Ec. Pol. de Montreal
Boukas, El-Kebir — Ec. Pol. de Montreal

ThM18 Beacon Comp B

Adaptive Control Applications (Regular Session)

Chair: Wang, Jin — WVU-Tech.
Co-Chair: Liu, Guangjun — Ryerson Univ.

13:30-13:50
Adaptive Optics with Adaptive Filtering and Control, pp. 3176-3179
Liu, Yu-tai — Univ. of California, Los Angeles
Gibson, J.S. — Univ. of California, Los Angeles

13:50-14:10
Performance Comparison of Different Neural Augmentation for the NASA Gen_2 IFCS F-15 Control Laws, pp. 3180-3184
Perhinschi, Mario George — West Virginia Univ.
Burken, John — NASA
Napolitano, M.R. — West Virginia Univ.
Campa, Giampiero — West Virginia Univ.
Fravolini, Mario Luca — Univ. Di Perugia

14:10-14:30
Adaptive Interval Model Control and Application, pp. 3185-3190
Zhang, Chuan — Univ. of Kentucky
Walcott, Bruce L. — Univ. of Kentucky

14:30-14:50
Adaptive Robust Control of an F-15 Aircraft, pp. 3191-3196
Fisher, James — Texas A&M Univ.
Smith, S. Craig — Maxtor
Burken, John — NASA

14:50-15:10
Robust Inventory Control Systems, pp. 3197-3202
Wang, Jin — WVU-Tech.
Ydstie, Erik B. — Carnegie Mellon

15:10-15:30
Adaptive Calibration of Surrogate Measurements and Its Application to Preemptive Control of Moisture Content in Paper Manufacturing, pp. 3203-3208
Liu, Zeyu — Univ. of Minnesota, Twin cities
Li, Perry Y. — Univ. of Minnesota

ThM19 Beacon Comp H

Control Education (Regular Session)

Chair: Berg, Jordan M. — Texas Tech. Univ.
Co-Chair: Leva, Alberto — Pol. di Milano

13:30-13:50
Integrating Experiments in Control Education, pp. 3209-3214
Molengraft, René van de — Tech. Univ. Eindhoven
Steinbuch, Maarten — Tech. Univ. Eindhoven
Kraker, Bram de — Tech. Univ. Eindhoven

13:50-14:10
*Redesigning Undergraduate Control Courseware**
Chang, Timothy N. — New Jersey Inst. of Tech.
Jaroonsiriphan, Puttiphong — New Jersey Inst. of Tech.
Chang, Daphne — Passaic County Community Coll.

14:10-14:30
Magnetic Levitation System: A Virtual Lab in "Easy Java Simulation", pp. 3215-3220
Dormido, Sebastian — UNED
Martín, Carla — UNED
Pastor, Rafael — UNED
Sánchez, José — UNED
Esquembre, Francisco — Univ. of Murcia

14:30-14:50
An Educational Testbed for Design and Implementation of Computer Control Software, pp. 3221-3226
Moallem, Mehrdad — Univ. of Western Ontario

14:50-15:10
An Experimental Laboratory on Control Structures, pp. 3227-3232
Leva, Alberto — Pol. di Milano

15:10-15:30
Matlab-Based Graphical User Interface Development for Basic Stamp 2 Microcontroller Projects, pp. 3233-3238
Li, Yan-Fang — Pol. Univ.
Harari, Saul — Pol. Univ.
Wong, Hong — Pol. Univ.
Kapila, Vikram — Pol. Univ.

ThMI1 Back Bay Ballroom D

Biomedical Applications (Interactive Session)

Chair: Misawa, Eduardo — Oklahoma State Univ.
Co-Chair: Kulkarni, Vishwesh — Univ. of Colorado, Boulder

13:30-15:30
*Wearable Health Monitoring Systems (I)**
Asada, H. Harry — Massachusetts Inst. of Tech.
Shaltis, Phillip — Massachusetts Inst. of Tech.
McCombie, Devin — Massachusetts Inst. of Tech.
Reisner, Andrew — Harvard Medical School

13:30-15:30
Rehabilitation Robotics: Adapting Robot Behavior to Suit Patient Needs and Abilities (I), pp. 3239-3244
Buerger, Stephen P. — Massachusetts Inst. of Tech.
Palazzolo, Jerome J. — Massachusetts Inst. of Tech.
Krebs, Hermano Igo — Massachusetts Inst. of Tech.
Hogan, Neville — Massachusetts Inst. of Tech.

ThMI2 Back Bay Ballroom D

Modeling and Simulation of Locomotion (Interactive Session)

Chair: Piscitelle, Louis — US Army SBCCOM Natick Soldier Center
Co-Chair: Misawa, Eduardo — Oklahoma State Univ.

13:30-15:30
*Assessment of the Equivalency of 3-D Kinetics and Kinematics in Overground versus Treadmill Locomotion for Horizontal and Graded Ambulation and the Application of Neural Networks to Assess Gait Patterns (I)**
Hasselquist, Leif — U.S.Army Natick Soldier Center

13:30-15:30
*Control of Human and Robotic Locomotion (I)**
Kuo, Arthur D. — Univ. of Michigan

13:30-15:30
Late Motor Processing in Low-Impedance Robots: Impedance Control of Series-Elastic Actuators (I), pp. 3245-3251
Pratt, Gill — Franklin W. Olin Coll. of Engineering
Willisson, Pace — Consultant
Bolton, Clive — Consultant
Hofman, Andreas — MIT Computer Science and AI Lab.

13:30-15:30
*Dynamics and Stability of Locomotion for Actively Powered Simplest Walking Model (I)**
Piscitelle, Louis — US Army SBCCOM Natick Soldier Center

ThMI3 — Back Bay Ballroom D

Industrial Applications (Interactive Session)

Chair: Misawa, Eduardo — Oklahoma State Univ.
Co-Chair: Judd, Robert P. — Ohio Univ.

13:30-15:30
*New and Traditional Challenges in the Design of Hard Disk Drive Servo Systems (I)**
Mittal, Samir — Seagate Tech.
Won, Justin — Seagate
Shan, Ximin — Seagate Tech.

13:30-15:30
*Compensation of External Vibration in Hard Disk Drive Servo Systems (I)**
Bahirat, Shirish — Seagate Tech.
Mittal, Samir — Seagate Tech.

13:30-15:30
*Vast DOF Actutator Systems (I)**
Asada, H. Harry — Massachusetts Inst. of Tech.
Wade, Eric — MIT
Cho, Kyu-Jin — Massachusetts Inst. of Tech.
Roy, Binayak — MIT

13:30-15:30
*Interactive Presentation of the Optimal Arbitrary Time-Delay (OAT) Filter Via Distributed Control (I)**
Book, Wayne J. — Georgia Inst. of Tech.
Dickerson, Stephen L. — Georgia Inst. of Tech.
Coleman, Scott — CAMotion, Inc.

ThP01 — Commonwealth

Convex Optimization: Overview and New Applications (Tutorial Session)

Chair: Hindi, Haitham — Palo Alto Res. Center (PARC)
Co-Chair: Hershenson, Maria-del-Mar — Barcelona Design
Organizer: Hindi, Haitham — Palo Alto Res. Center (PARC)

16:00-17:00
A Tutorial on Convex Optimization (I), pp. 3252-3265
Hindi, Haitham — Palo Alto Res. Center (PARC)

17:00-17:15
CMOS Analog Circuit Design Via Geometric Programming (I), pp. 3266-3271
Hershenson, Maria-del-Mar — Barcelona Design

17:15-17:30
Nonlinear Stability Via Sum of Squares Programming (I), pp. 3272-3272
Parrilo, Pablo A. — Swiss Federal Inst. of Tech.

17:30-17:45
*Weight Design in Markov Chains and Distributed Algorithms (I)**
Xiao, Lin — Stanford Univ.

17:45-18:00
Rank Minimization and Applications in System Theory (I), pp. 3273-3278
Fazel, Maryam — California Inst. of Tech.
Hindi, Haitham — Palo Alto Res. Center
Boyd, Stephen — Stanford Univ.

ThP02 Independence Ballroom East

Robust Control I (Regular Session)

Chair: Beck, Carolyn L. — Univ. of Illinois at Urbana-Champaign
Co-Chair: Misawa, Eduardo — Oklahoma State Univ.

16:00-16:20
Mapping Integral Quadratic Constraints into Parameter Space, pp. 3279-3284
Muhler, Michael — Robert Bosch GmbH
Ackermann, Juergen — DLR

16:20-16:40
Fixed Order H_∞-Synthesis: Computing Optimal Values by Robust Performance Analysis, pp. 3285-3290
Hol, Camile W.J. — Delft Univ. of Tech.
Scherer, Carsten W. — Delft Univ. of Tech.

16:40-17:00
A Model Reference Robust Control with Unknown High Frequency Gain Sign, pp. 3291-3296
Yan, Lin — Beijing Univ. of Aeronautics and Astronautics
Jiang, Xu — Beijing Univ. of Aeronautics and Astronautics

17:00-17:20
Robust PID Controller Tuning with Specification on Modulus Margin, pp. 3297-3302
Garcia, Daniel — Ec. Pol. Federale de Lausanne
Karimi, Alireza — Ec. Pol. Federale de Lausanne
Longchamp, Roland — Ec. Pol. Federale de Lausanne

17:20-17:40
Guaranteed Cost Control of Multimodeling Systems, pp. 3303-3308
Mukaidani, Hiroaki — Hiroshima Univ.
Oya, Hidetoshi — Univ. of Electro-Communications
Xu, Hua — Univ. of Tsukuba

17:40-18:00
Robust Output Feedback Controller Design Via Genetic Algorithms and LMIs: The Mixed H2 / Hinf Problem, pp. 3309-3314
Pereira, Gustavo José — Pontifical Catholic Univ. of Paraná - PPGEPS
Araújo, Humberto Xavier de — Pontifical Catholic Univ. of Paraná - PPGEPS

ThP03 Hampton A

Control Applications III (Regular Session)

Chair: Wu, Neng Eva — Binghamton Univ.
Co-Chair: Judd, Robert P. — Ohio Univ.

16:00-16:20

A Digital Feedback Damping Scheme for a Micromachined Directional Microphone, pp. 3315-3320

Wu, N. Eva — Binghamton Univ.
Miles, Ronald — Binghamton Univ.
Aydin, Oguz — Binghamton Univ.

16:20-16:40

Embedded, Real-Time DSP Control of an Electrostatically Suspended Gyroscope, pp. 3321-3326

Hill, Daniel — Boeing
Letendre, Toni — Boeing
Mills, Haru — Boeing

16:40-17:00

Rate Loop Control Based on Torque Compensation in Anti-Backlash Geared Servo System, pp. 3327-3332

Kwon, Young Shin — LG Innotek co.Ltd

17:00-17:20

Deadlock Avoidance for Flexible Manufacturing Systems with Choices Based on Digraph Circuit Analysis, pp. 3333-3338

Zhang, Wenle — Ohio Univ.
Judd, Robert P. — Ohio Univ.

17:20-17:40

Power Control for Wireless Networks Using Multiple Controllers and Switching, pp. 3339-3344

Paul, Ayanendu — Univ. of Southern California
Akar, Mehmet — Univ. of Southern California
Safonov, Michael G. — Univ. of Southern California
Mitra, Urbashi — Univ. of Southern California

17:40-18:00

Non-Linear Trajectory Generation and Lateral Control New Algorithms to Minimize Platoon's Oscillations, pp. 3345-3350

Awawdeh, AbdelBaset M.H. — Univ. of Alcala
Espinosa, Felipe — Univ. of Alcala
Mazo, Manuel — Univ.

ThP04 Hampton B

Linear Systems (Regular Session)

Chair: Hauksdottir, Anna Soffia — Univ. of Iceland
Co-Chair: Aghdam, Amir G. — Concordia Univ.

16:00-16:20
Parallel Compensator for Control Systems with Nonminimum Phase Plants, pp. 3351-3356
Gessing, Ryszard — Pol. Slaska

16:20-16:40
Frequency-Domain Analysis of Linear Time-Periodic Systems, pp. 3357-3362
Sandberg, Henrik — Lund Inst. of Tech.
Mollerstedt, Erik — Ericsson Mobile Platforms
Bernhardsson, Bo M. — Ericsson Mobile Platforms

16:40-17:00
*{H}_{infty } Suboptimal Model Reduction for Singular Systems}**
Liu, Wan Quan — Curtin Univ. of Tech.

17:00-17:20
Robust Order Reduction, pp. 3363-3368
Trofino, Alexandre — Federal Univ. of Santa Catarina
Coutinho, Daniel Ferreira — Pontificia Univ. Catolica do Rio Grande do Sul

17:20-17:40
Decentralized Two-Time-Scale Motions Control Using Generalized Sampled-Data Hold Functions, pp. 3369-3374
Becerril, Rafael — Concordia Univ.
Aghdam, Amir G. — Concordia Univ.
Yurkevich, Valery D. — Novosibirsk State Tech. Univ.

17:40-18:00
Regulator Constrained Control and Rate Problem for Linear Systems with Additive Disturbances, pp. 3375-3380
Mesquine, Fouad — Univ. Cadi Ayyad, Faculty of Science-Semlalia
Tadeo, Fernando — Univ. of Valladolid
Benzaouia, Abdellah — Faculty of Science Semlalia, Univ. Cadi Ayyad

ThP05 Exeter

Automotive Control and Dynamics Using Scale Vehicle Testbeds (Invited Session)

Chair: Brennan, Sean — Penn State Univ.
Co-Chair: Tai, Meihua — Pol. Univ.
Organizer: Brennan, Sean — Penn State Univ.
Organizer: Tai, Meihua — Pol. Univ.

16:00-16:20

Using Scaled Vehicles to Investigate the Influence of Various Properties on Rollover Propensity (I), pp. 3381-3386

Travis, William E. — Auburn Univ.
Whitehead, Randall — Auburn Univ.
Bevly, David M. — Auburn Univ.
Flowers, George — Auburn Univ.

16:20-16:40

Scale-Model Vehicle Analysis Using an Off-The-Shelf Scale-Model Testing Apparatus (I), pp. 3387-3392

O'Brien, Richard — United States Naval Acad.
Piepmeier, Jenelle — United States Naval Acad.
Hoblet, Philip — United States Naval Acad.
Burns, Steven — United States Naval Acad.
George, Charles — United States Naval Acad.

16:40-17:00

Similarity Conditions for Comparing Closed-Loop Vehicle Roll and Pitch Dynamics (I), pp. 3393-3398

Brennan, Sean — Penn. State Univ.

17:00-17:20

Autonomous Control of a Scale Model of a Trailer-Truck Using an Obstacle-Avoidance Path-Planning Hierarchy (I), pp. 3399-3404

Woodley, Robert — Univ. of Missouri-Rolla
Acar, Levent — Univ. of Missouri - Rolla

17:20-17:40

Control Oriented Modeling for Enhanced Yaw Stability and Vehicle Steerability (I), pp. 3405-3410

Huang, Jihua — Univ. of California at Berkeley
Ahmed, Jasim — Senior Systems Engineer
Kojic, Aleksandar — Robert Bosch Res. and Tech. Center
Hathout, Jean-Pierre — Robert Bosch Corp.

17:40-18:00

Dimensionless Analysis of Tire Characteristics for Vehicle Dynamics (I), pp. 3411-3416

Polley, Matthew — Univ. of Illinois Urbana-Champaign
Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign

ThP06 Dalton

Target Tracking & Collision Avoidance (Regular Session)

Chair: Burnett, Rebecca — Johns Hopkins Univ. Applied Physics Lab.
Co-Chair: Beard, Randal W. — Brigham Young Univ.

16:00-16:20

Adaptive Control of a Tilt Mirror for Laser Beam Steering, pp. 3417-3421

Kim, Byung-Sub — Korea Inst. of Machinery and Materials
Gibson, J.S. — Univ. of California, Los Angeles
Tsao, Tsu-chin — UCLA

16:20-16:40

Multiple-Target Tracking and Identity Management in Clutter, with Application to Aircraft Tracking, pp. 3422-3428

Hwang, Inseok — Stanford Univ.
Balakrishnan, Hamsa — Stanford Univ.
Roy, Kaushik — Stanford Univ.
Tomlin, Claire J. — Stanford Univ.

16:40-17:00

Algorithms for Air Traffic Flow Management under Stochastic Environments, pp. 3429-3434

Nilim, Arnab — Univ. of California at Berkeley
El Ghaoui, Laurent M. — Univ. of California at Berkeley

17:00-17:20

Model-Based Statistical Tracking and Decision Making for Collision Avoidance Application, pp. 3435-3440

Karlsson, Rickard — Linkoping Univ.
Jansson, Jonas — Linköping Univ. Volvo Car Corp.
Gustafsson, Fredrik — Linkoping Univ.

17:20-17:40

Active Contours and Optical Flow for Automatic Tracking of Flying Vehicles, pp. 3441-3446

Ha, Jincheol — Georgia Inst. of Tech.
Alvino, Christopher — Georgia Inst. of Tech.
Pryor, Gallagher — Georgia Inst. of Tech.
Niethammer, Marc — Georgia Inst. of Tech.
Johnson, Eric N. — Georgia Inst. of Tech.
Tannenbaum, Allen — Georgia Inst. of Tech.

17:40-18:00

Three Dimensional Analysis of Basic Formation Initialization Algorithms in Deep Space, pp. 3447-3453

Bikdash, Marwan U. — North Carolina A&T State Univ.
Hadaegh, Fred Y. — Jet Propulsion Lab.
Scharf, Daniel, P. — Jet Propulsion Lab.
Ploen, Scott — Jet Propulsion Lab.

ThP07 Gardner A

Observer Theory (Regular Session)

Chair: Asada, H. Harry — Massachusetts Inst. of Tech.
Co-Chair: Yaz, Edwin — Marquette Univ.

16:00-16:20
Analysis, Design, and Performance Limitations of H_2 Optimal Filtering in the Presence of an Additional Input with Known Frequency, pp. 3454-3459
Saberi, Ali — Washington State Univ.
Stoorvogel, Anton A. — Eindhoven Univ. of Tech.
Sannuti, Peddapullaiah — Rutgers Univ.

16:20-16:40
Connections between H_2 Optimal Filters and Unknown Input Observers -- Performance Limitations of H_2 Optimal Filtering, pp. 3460-3465
Saberi, Ali — Washington State Univ.
Stoorvogel, Anton A. — Eindhoven Univ. of Tech.
Sannuti, Peddapullaiah — Rutgers Univ.

16:40-17:00
Robust State Estimation with Q-Integral Observers, pp. 3466-3471
ibrir, Salim — Ec. Pol. de Montreal

17:00-17:20
Unknown Inputs Proportional Integral Observers for Descriptor Systems with Multiple Delays and Unknown Inputs, pp. 3472-3473
Koenig, Damien — Lab. d'Automatique de Grenoble
Marx, Benoit — Lab. d'Automatique de Grenoble
Sename, Olivier — Lab. d'Automatique de Grenoble

17:20-17:40
Observers for a Class of Descriptor Systems with Lipschitz Constraint, pp. 3474-3479
Lu, Guoping — Nantong Inst. of Tech.
Ho, Daniel W. C. — City Univ. of Hong Kong
Zheng, Yufan — Univ. of Melbourne

17:40-18:00
State and Input Estimation for Descriptor Systems with Unknown Inputs, pp. 3480-3481
Sun, Liying — Jinan Univ.
Cheng, Zhaolin — Shandong Univ.

18:00-18:20
Resilient Design of Thau's Observer Using Lmis, pp. 3482-3483
Yaz, Edwin — Marquette Univ.
Jeong, Chung Seop — Marquette Univ.
Alotaibi, Mosleh — Univ. of Arkansas

ThP08 Gardner B

Digital/sampled-Data Control II (Regular Session)

Chair: Stoustrup, Jakob — Aalborg Univ.
Co-Chair: Rabbath, Camille Alain — Defence Res. & Development Canada

16:00-16:20
Design and Properties of Feedback-Feedforward Sampled-Data Model-Reference LQG Control, pp. 3484-3489
Grygiel, Rafal — Silesian Tech. Univ.
Blachuta, Marian — Silesian Tech. Univ.

16:20-16:40
Fault Tolerant Controllers for Sampled-Data Systems, pp. 3490-3495
Niemann, Henrik — Tech. Univ. of Denmark
Stoustrup, Jakob — Aalborg Univ.

16:40-17:00
Practical Techniques for Optimal Dual-Rate Digital Redesign, pp. 3496-3501
Rabbath, Camille Alain — Defence Res. & Development Canada
Lechevin, Nicolas — Univ. du Quebec
Hori, Noriyuki — McGill Univ.

17:00-17:20
Periodically Weighted Model-Matching Problems with LPTV Controllers Formulated in Dual Lifted Forms, pp. 3502-3507
Tange, Yoshio — Univ. of Tokyo
Tsumura, Koji — Univ. of Tokyo

17:20-17:40
Adpative Control of Dual-Rate Systems Based on Least Squares Methods, pp. 3508-3513
Ding, Feng — Univ. of Alberta
Chen, Tongwen — Univ. of Alberta

17:40-18:00
Performance and Aliasing Analysis of Multi-Rate Digital Controllers with Interlacing, pp. 3514-3519
Wu, Shang-Chen — Univ. of California at Berkeley
Tomizuka, Masayoshi — Univ. of California at Berkeley

ThP09 Clarendon

Control and Identification of Large Structural Systems (Invited Session)

Chair: Christenson, Richard — Colorado School of Mines
Co-Chair: Barroso, Luciana — Texas A&M Univ.
Organizer: Christenson, Richard — Colorado School of Mines
Organizer: Barroso, Luciana — Texas A&M Univ.

16:00-16:20
Bounded and Dissipative Solutions of the Bouc-Wen Model for Hysteretic Structural Systems (I), pp. 3520-3525
Ikhouane, Fayçal — Univ. Pol. de Catalunya
Manosa, Victor — Univ. Pol. de Catalunya
Rodellar, Jose — Univ. Pol. de Catalunya

16:20-16:40
Health Monitoring of Structures under Ambient Vibrations Using Semiactive Devices (I), pp. 3526-3531
Elmasry, Mohamed I S — Univ. of Southern California
Johnson, Erik A — Univ. of Southern California

16:40-17:00
Qualitative Results for a Hierarchical Discrete Event Control Paradigm Derived from Structures Operating under Nominal and Fault Conditions (I), pp. 3532-3537
Sain, Patrick M. — Raytheon Company

17:00-17:20
Satellite Structure Attitude Control with Parameter Robust Risk-Sensitive Control Synthesis (I), pp. 3538-3543
Won, Chang-Hee — Univ. of North Dakota

17:20-17:40
Active Control of Structures with Uncertain Coupled Subsystems and Actuator Dynamics, pp. 3544-3549
Luo, Ningsu — Univ. de Girona
Villamizar Mejía, Rodolfo — Univ. de Girona
Rodellar, Jose — Univ. Pol. de Catalunya
Vehi, Josep — Univ. de Girona

17:40-18:00
Robust Actuator Placement in Flexible Plates Subject to Worst-Case Spatial Distribution of Disturbances, pp. 3550-3555
Demetriou, Michael A. — Worcester Pol. Inst.
Moghani, Taraneh — Worcester Pol. Inst.

ThP10 Berkeley

Process Control (Regular Session)

Chair: Marquez, Horacio J. — Univ. of Alberta
Co-Chair: Dumont, Guy A. — Univ. of British Columbia

16:00-16:20

Decentralized Cascade Control of Binary Distillation Columns, pp. 3556-3561

Castellanos-Sahagun, Eduardo — Univ. Autonoma Metroplitana, Unidad Iztapalapa, Departamento de
Alvarez, Jesus — Univ. Auto. Metropolitanta-Iztapal

16:20-16:40

Operating Point Selection in Multimodel Controller Design, pp. 3562-3567

Tan, Wen — North China Electric Power Univ.
Marquez, Horacio J. — Univ. of Alberta
Chen, Tongwen — Univ. of Alberta

16:40-17:00

Performance Assessment of MIMO Systems under Partial Information, pp. 3568-3573

Xia, Hao — Univ. of Stathclyde
Majecki, Pawel — Univ. of Strathclyde
Ordys, Andrzej W. — Univ. of Strathclyde
Grimble, Michael John — Univ. of Strathclyde

17:00-17:20

Design of an Industrial Distributed Controller Near Spatial Domain Boundaries, pp. 3574-3580

Mijanovic, Stevo — Univ. of British Columbia
Stewart, Greg E — Honeywell Process Solutions
Dumont, Guy A. — Univ. of British Columbia
Davies, Michael S. — Univ. of British Columbia

17:20-17:40

A Model Based Control Concept with Knowledge Based Overhead Control of a Roasting Process, pp. 3581-3586

Voglauer, Bernhard — Vienna Univ. of Tech.
Geyrhofer, Wolfgang — Vienna Univ. of Tech.
Jörgl, H. Peter — Vienna Univ. of Tech.

17:40-18:00

Shaping of Molecular Weight Distribution Using B-Spline Based Predictive Probability Density Function Control, pp. 3587-3592

Yue, Hong — UMIST
Zhang, Jinfang — Inst. of Automation, Chinese Acad. of Sciences
Wang, Hong — UMIST
Cao, Liulin — Beijing Uni. of Chemical Tech.

ThP11 Fairfax A

Wireless Networks (Regular Session)

Chair: Elia, Nicola — Iowa State Univ.
Co-Chair: Wen, John T. — Rensselaer Pol. Inst.

16:00-16:20
Capacity-Achieving Feedback Scheme for Flat Fading Channels with Channel State Information, pp. 3593-3598
Liu, Jialing — Iowa State Univ.
Elia, Nicola — Iowa State Univ.
Tatikonda, Sekhar — Yale Univ.

16:20-16:40
Theoretic Analysis of Two Broadcasting Protocols in Mobile Ad Hoc Networks, pp. 3599-3604
Zhang, Hao — Pol. Univ.
Jiang, Zhong-Ping — Pol. Univ.

16:40-17:00
Wireless Medium Access Control in Networked Control Systems, pp. 3605-3610
Liu, Xiangheng — Stanford Univ.
Goldsmith, Andrea — Stanford Univ.

17:00-17:20
Control and Adaptation of TDMA in Wireless Networks, pp. 3611-3616
Kabamba, Pierre T. — Univ. of Michigan
Meerkov, Semyon M. — Univ. of Michigan
Tang, Choon Yik — Univ. of Michigan

17:20-17:40
Passivation Designs for CDMA Uplink Power Control, pp. 3617-3621
Fan, Xingzhe — Rensselaer Pol. Inst.
Arcak, Murat — Rensselaer Pol. Inst.
Wen, John T. — Rensselaer Pol. Inst.

17:40-18:00
Robustness of CDMA Power Control against Disturbances and Time-Delays, pp. 3622-3627
Fan, Xingzhe — Rensselaer Pol. Inst.
Arcak, Murat — Rensselaer Pol. Inst.
Wen, John T. — Rensselaer Pol. Inst.

ThP12 Fairfax B

Missile and Space Vehicle Control (Regular Session)

Chair: Weibel, Steven P. — Raytheon Missile Systems
Co-Chair: Weiss, Haim M. — Rafael

16:00-16:20

Lateral Acceleration Control Design of a Non-Linear Homing Missile Using Multi-Objective Evolution Strategies (I), pp. 3628-3633

Sreenuch, Tarapong — Cranfield Univ.
Tsourdos, Antonios — Cranfield Univ. Royal Military Coll. of Sci.
Hughes, Evan James — Cranfield Univ. (rmcs)
White, Brian A. — Cranfield Univ.

16:20-16:40

Stability of Modern Guidance Laws with Model Mismatch, pp. 3634-3639

Weiss, Haim M. — Rafael
Hexner, Gyorgy — RAFAEL, Haifa ISRAEL

16:40-17:00

Differential Geometric Guidance Based on the Involute of the Target's Trajectory: 2-D Aspects, pp. 3640-3645

Ariff, Omar — Cranfield Univ.
Zbikowski, R — Cranfield Univ.
Tsourdos, Antonios — Cranfield Univ. Royal Military Coll. of Sci.
White, Brian A. — Cranfield Univ.

17:00-17:20

Rigid Body Equations of Motion for Modeling and Control of Spacecraft Formations-Part 1: Absolute Equations of Motion, pp. 3646-3653

Ploen, Scott — Jet Propulsion Lab.
Hadaegh, Fred Y. — California Inst. of Tech.
Scharf, Daniel — Jet Propulsion Lab.

17:20-17:40

Feedback Control for Counterflow Thrust Vectoring, pp. 3654-3659

Collins, Emmanuel G. — Florida A & M Univ. - Florida State Univ.
Zhao, Yanan — Florida A&M Univ. - Florida State Univ.
Alvi, Farrukh — Florida State Univ.
Alidu, Mohammed I. — Florida A&M Univ.
Strykowski, Paul J. — Univ. of Minnesota

17:40-18:00

Orbit Dynamics and Kinematics with Full Quaternions, pp. 3660-3665

Andreis, Davide — Pol. di Torino
Canuto, Enrico S. — Pol. di Torino

ThP13 Beacon Comp D

Control of Uncertain Nonlinear Systems (Regular Session)

Chair: Guay, Martin — Queen's Univ.
Co-Chair: Ding, Zhengtao — The Univ. of Manchester

16:00-16:20
Tracking of Perturbed Nonlinear Plants Using Robust Right Coprime Factorization Approach, pp. 3666-3670
Deng, Mingcong — Okayama Univ.
Inoue, Akira — Okayama Univ.
Ishikawa, Kazushi — Okayama Univ.
Hirashima, Yoichi — Okayama Univ.

16:20-16:40
Output Feedback Stabilization of Uncertain Non-Minimum Phase Nonlinear Systems, pp. 3671-3676
Diao, Lili — Queen's Univ.
Guay, Martin — Queen's Univ.

16:40-17:00
Output Regulation of Uncertain Nonlinear Systems with Nonlinear Exosystems, pp. 3677-3682
Ding, Zhengtao — The Univ. of Manchester

17:00-17:20
Output Feedback Stabilization of a Class of Uncertain Nonlinear Systems, pp. 3683-3688
Karagiannis, Dimitrios — Imperial Coll.
Jiang, Zhong-Ping — Pol. Univ.
Ortega, Romeo — LSS-SUPELEC
Astolfi, Alessandro — Imperial Coll.

17:20-17:40
Feedback Stabilization of Nonlinear Stochastic Time-Delay Systems with State and Control-Dependent Noise, pp. 3689-3692
Zhang, Weihai — Shandong Inst. of Light Industry
Chen, Bor-Sen — National Tsing Hua Univ.
Li, Qinghua — Shandong Inst. of Light Industry

17:40-18:00
Adaptive Robust Output Feedback Controllers Guaranteeing Uniform Ultimate Boundedness for Uncertain Nonlinear Systems, pp. 3693-3698
Liu, Fenlin — Information Engineering Inst.
Cai, Yanrong — Information Engineering Inst.
Luo, Junyong — Information Engineering Inst.

ThP14 Beacon Comp E

Large Scale Systems (Regular Session)

Chair: Lall, Sanjay — Stanford Univ.
Co-Chair: Chellaboina, VijaySekhar — Univ. of Missouri- Columbia

16:00-16:20
Vector Dissipativity Theory for Discrete-Time Large-Scale Nonlinear Dynamical Systems, pp. 3699-3704
Haddad, Wassim M. — Georgia Inst. of Tech.
Hui, Qing — Georgia Inst. of Tech.
Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
Nersesov, Sergey G. — Georgia Inst. of Tech.

16:20-16:40
Accelerating Large-Scale Non-Linear Models for Monitoring and Control Using Spatial and Temporal Correlations, pp. 3705-3710
Bos, Robert — Delft Univ. of Tech.
Bombois, Xavier — Delft Univ. of Tech.
Van den Hof, Paul M.J. — Delft Univ. of Tech.

16:40-17:00
A Decentralized Output Feedback Controller for a Class of Large-Scale Interconnected Nonlinear Systems, pp. 3711-3716
Pagilla, Prabhakar R. — Oklahoma State Univ.
Zhu, Yongliang — Oklahoma State Univ.

17:00-17:20
Control Design for Topology-Independent Stability of Interconnected Systems, pp. 3717-3722
Cogill, Randy — Stanford Univ.
Lall, Sanjay — Stanford Univ.

17:20-17:40
A Frequency Domain Condition for Stability of Interconnected MIMO Systems, pp. 3723-3728
Gattami, Ather — Lund Inst. of Tech.
Murray, Richard M. — California Inst. of Tech.

17:40-18:00
Graph Theoretic Methods in the Stability of Vehicle Formations, pp. 3729-3734
Lafferriere, Gerardo A. — Portland State Univ.
Caughman, John — Portland State Univ.
Williams, Anca — Portland State Univ.

ThP15 Beacon Comp F

Application of Fault Detection II (Regular Session)

Chair: Hadjicostis, Christoforos — Univ. of Illinois at Urbana-Champaign
Co-Chair: van Helvoirt, Jan — Tech. Univ. Eindhoven

16:00-16:20

Transducer Design and Neural Signature Analysis for Diagnosis of Energized Transmission Lines, pp. 3735-3740

Lim, Sun-Wook — Univ. of Denver
Shoureshi, Rahmat — Univ. of Denver

16:20-16:40

Detection of Fatigue Crack Anomaly: A Symbolic Dynamics Approach, pp. 3741-3746

khatkhate, Amol — Pennsylvania State Univ.
Ray, Asok — Pennsylvania State Univ.
Chin, Shin — Pennsylvania State Univ.
Rajagopalan, Venkatesh — Pennsylvania State Univ.
Keller, Eric — Pennsylvania State Univ.

16:40-17:00

Adaptive Accommodation of Failures in Second-Order Flight Control Actuators with Measurable Rates†

Boskovic, Jovan D. — Scientific Systems Co. Inc.
Bergstrom, Sarah — Scientific Systems Company, Inc.
Mehra, Raman K. — Scientific Systems Co. Inc.

17:00-17:20

Flight Testing of a Reconfigurable Control System on an Unmanned Aircraft., pp. 3747-3752

Shore, David — Univ. of Utah
Bodson, Marc — Univ. of Utah

17:20-17:40

Adaptive Fuzzy-Neural-Based Multiple Models for Fault Diagnosis of a Pneumatic Actuator, pp. 3753-3758

shi, li — Shanghai Univ.
Sepehri, Nariman — Uinv. of Manitoba

17:40-18:00

Neuro-Fuzzy Diagnosis in Final Control Elements of Ac Motors, pp. 3759-3763

Alexandru, Monica — Pol. Univ. of Bucharest
Popescu, Dumitru — Pol. Univ. of Bucharest

ThP16 Beacon Comp A

Precision Motion Control (Invited Session)

Chair: Tsao, Tsu-chin — UCLA
Co-Chair: Christofides, Panagiotis D. — Univ. of California at Los Angeles
Organizer: Tsao, Tsu-chin — UCLA

16:00-16:20
Design of Robustly Stable Disturbance Observers Based on Closed Loop Consideration Using H-Infinity Optimization and Its Applications to Motion Control Systems (I), pp. 3764-3769
Wang, Chun-Chih — Univ. of California at Berkeley
Tomizuka, Masayoshi — Univ. of California at Berkeley

16:20-16:40
Modeling and Control of a Magnetostrictive Tool Servo System (I), pp. 3770-3775
Ro, Paul I. — North Carolina State Univ.
Panusittikorn, Witoon — North Carolina State Univ.

16:40-17:00
Application of a Recursive Minimum-Norm Learning Controller to Precision Motion Control of an Underactuated Mechanical System (I), pp. 3776-3781
Hu, Ai-Ping — Southern Illinois Univ. at Edwardsville
Sadegh, Nader — Georgia Inst. of Tech.

17:00-17:20
A Time-Varying Iterative Learning Control Scheme (I), pp. 3782-3787
Tharayil, Marina — Univ. of Illinois at Urbana Champaign
Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign

17:20-17:40
Inversion-Based Precision-Positioning of Inertial Reaction Devices (I), pp. 3788-3793
Vander Giessen, Clint — Electro Scientific Industries Inc.,
Zou, Qingze — Univ. of Washington
Devasia, Santosh — Univ. of Washington

17:40-18:00
Repetitive Control of Linear Time Varying Systems with Application to Electronic Cam Motion Control (I), pp. 3794-3799
Wang, Junqing — UCLA
Tsao, Tsu-chin — UCLA

ThP17 Beacon Comp G

Stochastic Methods (Regular Session)

Chair: Spall, James C. — Johns Hopkins Univ.
Co-Chair: Soroush, Masoud — Drexel Univ.

16:00-16:20
A Modified PCA Method Via the Minimization of Error Entropy, pp. 3800-3801
Guo, Zhenhua — Inst. of Automation, P R China
Yue, Hong — Inst. of Automation, P R China
Wang, Hong — UMIST, UK

16:20-16:40
Almost Sure Convergence of Two Time-Scale Stochastic Approximation Algorithms, pp. 3802-3807
Tadic, Vladislav — Univ. of Sheffield

16:40-17:00
Optimal State Estimation with Continuous, Multirate and Randomly Sampled Measurements, pp. 3808-3813
zhang, Huichai — Univ. of Utah
Basin, Michael V. — Autonomous Univ. of Nuevo Leon
Skliar, Mikhail — Univ. of Utah

17:00-17:20
Discrete Optimization, SPSA and Markov Chain Monte Carlo Methods, pp. 3814-3819
Gerencser, Laszlo — Hungarian Acad. of Sciences
Hill, Stacy D. — Johns Hopkins Univ.
Vago, Zsuzsanna — Computer & Automation Inst. of HAS
Vincze, Zoltán — -

17:20-17:40
An Ant System Approach to Markov Decision Processes, pp. 3820-3825
Chang, Hyeong Soo — Sogang Univ.
Gutjahr, Walter J. — Univ. of Vienna
Yang, Jihoon — Sogang Univ.
Park, Sungyong — Sogang Univ.

17:40-18:00
Active Identification of Unknown Systems: An Information Theoretic Approach, pp. 3826-3830
Baglietto, Marco — Univ. of Genoa
Scardovi, Luca — Univ. of Genoa
Zoppoli, Riccardo — Univ. of Genoa

ThP18 Beacon Comp B

Adaptive Control of Mechanical Systems (Regular Session)

Chair: Hovakimyan, Naira — Virginia Pol. Inst. and State Univ.
Co-Chair: Kim, Nakwan — Georgia Inst. of Tech.

16:00-16:20
Contouring Control of Stewart Platform Based Machine Tools, pp. 3831-3838
Garagic, Denis — Scientific Systems Inc.
Srinivasan, Krishnaswamy — The Ohio State Univ.

16:20-16:40
Adaptive Regulation of Amplitude Limited Robot Manipulators with Uncertain Kinematics and Dynamics, pp. 3839-3844
Dixon, Warren E. — Oak Ridge Nationl Lab.

16:40-17:00
Nonlinear Adaptive Ship Course Tracking Control Based on Backstepping and Nussbaum Gain, pp. 3845-3850
DU, Jialu — Dalian Maritime Univ.
Guo, Chen — Dalian Maritime Univ.

17:00-17:20
Real-Time Multiple Parameter Estimation for Voltage Controlled Brushless DC Motor Actuators, pp. 3851-3856
Patankar, Ravindra P. — Michigan Tech. Univ.
Zhu, Liangtao — Michigan Tech. Univ.

17:20-17:40
Recursive Identification of Hysteresis in Smart Materials, pp. 3857-3862
Tan, Xiaobo — Univ. of Maryland
Baras, John S. — Univ. of Maryland

17:40-18:00
Experimental Study of a Novel Adaptive Controller for Active Vibration Isolation, pp. 3863-3868
Zuo, Lei — Massachusetts Inst. of Tech.
Slotine, Jean-Jacques E. — Massachusetts Inst. of Tech.
Nayfeh, Samir — Massachusetts Inst. of Tech.

ThP19 Beacon Comp H

Switched Systems I (Regular Session)

Chair: Hespanha, Joao P. — Univ. of California, Santa Barbara
Co-Chair: Pettersson, Stefan — Chalmers Univ. of Tech.

16:00-16:20
Controller Design of Switched Linear Systems, pp. 3869-3874
Pettersson, Stefan — Chalmers Univ. of Tech.

16:20-16:40
Control Design of Switched LPV Systems Using Multiple Parameter-Dependent Lyapunov Functions, pp. 3875-3880
Lu, Bei — North Carolina State Univ.
Wu, Fen — North Carolina State Univ.

16:40-17:00
A Singularity Test for the Existence of a Common Quadratic Lyapunov Functions for Pairs of Stable LTI Systems, pp. 3881-3884
King, Christopher — Northeastern Univ.
Shorten, Robert — The Hamilton Inst.

17:00-17:20
Piecewise Quadratic Lyapunov Functions for Piecewise Affine Time-Delay Hybrid Systems, pp. 3885-3889
Kulkarni, Vishwesh — Massachusetts Inst. of Tech.
Jun, Myungsoo — Cornell Univ.
Hespanha, Joao P. — Univ. of California, Santa Barbara

17:20-17:40
Quadratic Stabilization of a Switched Affine System about a Nonequilibrium Point, pp. 3890-3895
Bolzern, Paolo — Pol. di Milano
Spinelli, William — Pol. di Milano

17:40-18:00
Conditions for Uniform Solvability of Parameter-Dependent Lyapunov Equations with Applications, pp. 3896-3901
Krishnamurthy, Prashanth — Pol. Univ.
Khorrami, Farshad — Pol. Univ.

ThES Back Bay Ballroom D

History of Control (Special Session)

Chair: Abramovitch, Daniel Y. — Agilent Lab.
Co-Chair: Lundberg, Kent — MIT
Organizer: Abramovitch, Daniel Y. — Agilent Lab.
Organizer: Lundberg, Kent — MIT

FrDPL Grand Ballroom

Plenary Session III: Claire J. Tomlin (Plenary Session)

Chair: Speyer, Jason L. — Univ. of California at Los Angeles
Co-Chair: Pao, Lucy Y. — Univ. of Colorado

08:00-09:00

*Hybrid Control: From Air Traffic to Fly Wings**

Tomlin, Claire J. — Stanford Univ.

FrA01 Commonwealth

Model-Based Control for Semiconductor and Advanced Materials Processing (Tutorial Session)

Chair: Kosut, Robert L. — SC Solutions, Inc.
Co-Chair: Emami-Naeini, Abbas — SC Solutions, Inc.
Organizer: Ghosal, Sarbajit — Senior Res. Engineer

09:30-10:00

Model-Based Control for Semiconductor and Advanced Materials Processing: An Overview (I), pp. 3902-3909

Emami-Naeini, Abbas — SC Solutions, Inc.
Ebert, Jon L. — SC Solutions, Inc.
Kosut, Robert L. — SC Solutions, Inc.
de Roover, Dick — SC Solutions, Inc.
Ghosal, Sarbajit — SC Solutions, Inc.

10:00-10:30

Model-Based Control of Rapid Thermal Processing for Semiconductor Wafers (I), pp. 3910-3921

Ebert, Jon L. — SC Solutions, Inc.
de Roover, Dick — SC Solutions, Inc.
Porter II, La Moyne L. — SC Solutions, Inc.
Lisiewicz, Valerie — SC Solutions, Inc.
Ghosal, Sarbajit — SC Solutions, Inc.
Kosut, Robert L. — SC Solutions, Inc.
Emami-Naeini, Abbas — SC Solutions, Inc.

10:30-11:00

Model-Based Control for Chemical-Mechanical Planarization Systems (I), pp. 3922-3929

de Roover, Dick — SC Solutions Inc.
Emami-Naeini, Abbas — SC Solutions, Inc.
Ebert, J. L. — SC Solutions, Inc.

11:00-11:30

Multiscale Modeling and Control of RF Diode Sputter Deposition for GMR Thin Films (I), pp. 3930-3941

Ghosal, Sarbajit — SC Solutions, Inc.
Kosut, Robert L. — SC Solutions, Inc.
Ebert, J.L. — SC Solutions, Inc.
Porter, L. L. — SC Solutions, Inc.

FrA02 Independence Ballroom East

Robust Control II (Regular Session)

Chair: Roberts, Peter D. City Univ. London
Co-Chair: Muhler, Michael Robert Bosch GmbH

09:30-09:50

A Linear Programming Approach to the Synthesis of Fixed Structure Controllers, pp. 3942-3949

Darbha, Swaroop Texas A & M Univ.
Pargaonkar, Sudhir Texas A & M Univ.
Bhattacharyya, Shankar P. Texas A & M Univ.

09:50-10:10

Washout Filters in Feedback Control: Benefits, Limitations and Extensions, pp. 3950-3955

Hassouneh, Munther A. Univ. of Maryland at Coll. Park
Lee, Hsien-Chiarn Chung Shan Inst. of Science and Tech. Taiwan
Abed, Eyad H. Univ. of Maryland at Coll. Park

10:10-10:30

A Mu -Analysis Application to Stability of Optical Networks, pp. 3956-3961

Pavel, Lacra Univ. of Toronto

10:30-10:50

Finite Frequency Property-Based Robust Control Analysis and Synthesis, pp. 3962-3967

Kiyama, Tsuyoshi Osaka Univ.
Nishio, Emi Osaka Univ.

10:50-11:10

Nonstationary Robust Control for Time-Varying System, pp. 3968-3973

Otsuki, Masatsugu Keio Univ.
Yoshida, Kazuo Keio Univ.

11:10-11:30

Robust H_; Filtering for LPV Discrete-Time State-Delayed Systems, pp. 3974-3979

Wang, junling Harbin Inst. of Tech.
Wang, Chang-hong Harbin Inst. of Tech.
Gao, Huijun The Univ. of Hong Kong

FrA03 Hampton A

Robotic Control (Regular Session)

Chair: Kozlowski, Krzysztof R. — Poznan Univ. of Tech.
Co-Chair: Hwang, Chih-Lyang — Tatung Univ.

09:30-09:50

Adaptive Synchronization Control of a Planar Parallel Manipulator, pp. 3980-3985

Ren, Lu — Univ. of Toronto
Mills, James K. — Univ. of Toronto
Sun, Dong — City Univ. of Hong Kong

09:50-10:10

Control System for the Automatic Handling of Biological Cells with Mobile Microrobots, pp. 3986-3991

Hülsen, Helge — Univ. of Oldenburg
Trüper, Tammo — Univ. of Oldenburg
Fatikow, Sergej — Univ. of Oldenburg

10:10-10:30

Swing-Up Control of a Serial Double Inverted Pendulum, pp. 3992-3997

Henmi, Tomohiro — Okayama Univ.
Deng, Mingcong — Okayama Univ.
Inoue, Akira — Okayama Univ.
Ueki, Nobuyuki — Okayama Univ.
Hirashima, Yoichi — Okayama Univ.

10:30-10:50

A Trajectory Tracking of Legged Robot Using Decentralized Control with Robustness Designs, pp. 3998-4003

Hwang, Chih-Lyang — Tatung Univ.

10:50-11:10

Sagittal Gait Synthesis for a Five-Link Biped Robot, pp. 4004-4009

Mu, Xiuping — Univ. of MAnitoba
Wu, Qiong — Univ. of Manitoba

11:10-11:30

A Robust Controller for an Electro-Mechanical Fin Actuator, pp. 4010-4015

Yoo, Chung-Hee — Agency for Defense Development

FrA04 Hampton A

PID Control (Regular Session)

Chair: Wu, Wei — National Yunlin Univ. of Science and Tech. Taiwan, R.O.C.

Co-Chair: Ogunnaike, Babatunde A. — National Yunlin Univ. of Science and Tech. Taiwan, Univ. of Delaware

09:30-09:50

Memory-Based On-Line Tuning PID Controllers for Nonlinear Systems, pp. 4016-4021

Takao, Kenji — Hiroshima Univ.
Yamamoto, Toru — Hiroshima Univ.
Hinamoto, Takao — Hiroshima Univ.

09:50-10:10

A Noncausal Approach for the Improvement of PID Control, pp. 4022-4027

Piazzi, Aurelio — Univ. of Parma
Visioli, Antonio — Univ. of Brescia

10:10-10:30

Fuzzy Proportional Integral-Proportional Derivative (PI-PD) Controller, pp. 4028-4033

Veeraiah, M.P. — IITGuwahati
Majhi, S. — IITGuwahati
Mahanta, Chitralekha — IITGuwahati

10:30-10:50

Stability Analysis and Tuning Strategies for a Novel Next Generation Regulatory Controller, pp. 4034-4039

Mukati, Kapil — -
Ogunnaike, Babatunde A. — Univ. of Delaware

10:50-11:10

A PID Based MIMO Control System of the CMS Tracker Thermal Screen, pp. 4040-4041

Carrone, Enzo — CERN - European Organization for Nuclear Res.
Tsirou, Andromachi — CERN - European Organization for Nuclear Res.

11:10-11:30

Nonlinear PI/PID Controllers for a High-Order Reactor System, pp. 4042-4047

Wu, Wei — National Yunlin Univ. of Science and Tech. Taiwan, R.O.C.

FrA05 Exeter

Powertrain Control (Regular Session)

Chair: Javaherian, Hossein — GM R&D and Planning
Co-Chair: peyton jones, james — Villanova Univ.

09:30-09:50

Control of Homogeneous Charge Compression (HCCI) Ignition Engine Dynamics, pp. 4048-4053

Bengtsson, Johan — Lund Univ.
Strandh, Petter — Lund Univ.
Johansson, Rolf — Lund Univ.
Tunestİl, Per — Lund Inst. of Tech.
Johansson, Bengt — Lund Inst. of Tech.

09:50-10:10

Optimization and Scheduling for Automotive Powertrains, pp. 4054-4059

Jankovic, Mrdjan — Ford Res. Lab.
Magner, Stephen W. — Ford Motor Company

10:10-10:30

Estimating the Oxygen Storage Level of a Three-Way Automotive Catalyst, pp. 4060-4065

Muske, Kenneth R. — Villanova Univ.
Peyton Jones, James C. — Villanova Univ.

10:30-10:50

Adaptive Critic Learning Techniques for Automotive Engine Control, pp. 4066-4071

Javaherian, Hossein — GM R&D and Planning
Liu, Derong — Univ. of Illinois at Chicago
Zhang, Yi — Univ. of Illinois at Chicago
Kovalenko, Olesia — Univ. of Illinois at Chicago

10:50-11:10

Energy Management Strategies for Vehicle Power Nets, pp. 4072-4077

Koot, Michiel — Tech. Univ. Eindhoven, The Netherlands
Kessels, J.T.B.A. — Tech. Univ. Eindhoven, The Netherlands
de Jager, Bram — Tech. Univ. Eindhoven, The Netherlands
Heemels, W.P.M.H. — Tech. Univ. Eindhoven, The Netherlands
van den Bosch, P.P.J. — Tech. Univ. Eindhoven, The Netherlands

11:10-11:30

Simulation and Control of an Automotive Dry Clutch, pp. 4078-4083

Serrarens, Alexander Franciscus Anita — Drivetrain Innovations b.v.
Dassen, Marc — Tech. Univ. Eindhoven
Steinbuch, Maarten — Eindhoven Univ. of Tech.

FrA06 Dalton

Tracking (Regular Session)

Chair: Kalandros, Michael K. — Johns Hopkins Applied Physics Lab.
Co-Chair: Leitner, Jesse A. — NASA Goddard Space Flight Center

09:30-09:50

Attitude Determination and Orbital Estimation Using Earth Position and Magnetic Field Vector Measurements, pp. 4084-4089

Morton, Brogan — Univ. of New Hampshire
Koprubasi, Kerem — Univ. of New Hampshire
Thein, May-Win — Univ. of New Hampshire

09:50-10:10

Estimation of Aperture Errors with Direct Interferometer-Output Feedback for Spacecraft Formation Control, pp. 4090-4095

Lu, Hui-Ling — Optimal Synthesis Inc.
Cheng, Victor H. L. — Optimal Synthesis Inc.
Leitner, Jesse A. — NASA Goddard Space Flight Center
Lyon, Richard G. — NASA Goddard Space Flight Center
Carpenter, Kenneth G. — NASA Goddard Space Flight Center

10:10-10:30

*Maneuvering Target Tracking Using Switchings among IMM-Viterbi(m) Estimators**

Ho, Tan-Jan — Queen's Univ.

10:30-10:50

Tracking of Multiple Maneuvering Targets Using Multiscan JPDA and IMM Filtering, pp. 4096-4101

Puranik, Sumedh — Auburn Univ.
Tugnait, Jitendra K. — Auburn Univ.

10:50-11:10

A Method for Dealing with Assignment Ambiguity, pp. 4102-4107

Julier, Simon J. — ITT AES / NRL
Uhlmann, Jeffrey — Univ. of Columbia-missouri
Nicholson, David — BAE Systems

11:10-11:30

Underwater Vehicle Trajectory Estimation Using Contracting PDE-Based Observers, pp. 4108-4113

Jouffroy, Jerome — NTNU
Opderbecke, Jan — IFREMER

FrA07 Gardner A

Estimation and Control (Regular Session)

Chair: Bhattacharyya, Shankar P. — Texas A & M Univ.
Co-Chair: Khalil, Hassan K. — Michigan State Univ.

09:30-09:50

Output Feedback Control Using High-Gain Observers in the Presence of Measurement Noise, pp. 4114-4119

Ahrens, Jeffrey H. — Michigan State Univ.
Khalil, Hassan K. — Michigan State Univ.

09:50-10:10

Reduced-Order H-Infinity Filtering for Discrete-Time, Linear, Time-Varying Systems, pp. 4120-4125

O'Brien, Richard — United States Naval Acad.
Kiriakidis, Kiriakos — United States Naval Acad.

10:10-10:30

Real and Complex Stabilization: Stability and Performance, pp. 4126-4138

Ho, Ming-Tzu — National Cheng Kung Univ.
Silva, Guillermo J. — IBM Server Group
Datta, Aniruddha — Texas A & M Univ.
Bhattacharyya, Shankar P. — Texas A & M Univ.

10:30-10:50

Synthesis of Controllers for Non-Minimum Phase and Unstable Systems Using Non-Sequential MIMO Quantitative Feedback Theory, pp. 4139-4144

Lan, Chen-yang — Texas A&M Univ.
Kerr, Murray — The Univ. of Queensland
Jayasuriya, Suhada — Texas A&M Univ.

10:50-11:10

A Lyapunov Approach to Frequency Analysis, pp. 4145-4150

Hu, Tingshu — Univ. of Virginia
Teel, Andrew R. — Univ. of California at Santa Barbara
Lin, Zongli — Univ. of Virginia

11:10-11:30

Minimal Positive Realizations of a Class of Third-Order Systems, pp. 4151-4152

Wang, Zhizhen — Peking Univ.
Wang, Long — Peking Univ.
Yu, Wensheng — Chinese Acad. of Sciences
Liu, Guo Ping — ALSTOM

FrA08 Gardner B

Time-Delay Systems I (Regular Session)

Chair: Cao, Yong-Yan — Univ. of Virginia
Co-Chair: Niculescu, Silviu-Iulian — Univ. de Tech. de Compiegne

09:30-09:50
Analysis of Nonlinear Time-Delay Systems Using the Sum of Squares Decomposition, pp. 4153-4158
Papachristodoulou, Antonis — California Inst. of Tech.

09:50-10:10
Robust Stability of Quasipolynomials: Vertex Tests and Extensions, pp. 4159-4164
Chen, Jie — Univ. of California at Riverside
Niculescu, Silviu-Iulian — Univ. de Tech. de Compiegne

10:10-10:30
Fixed-Lag Smoothing As a Constrained Version of the Fixed-Interval Case, pp. 4165-4170
Mirkin, Leonid — Tech. - IIT
Tadmor, Gilead — Northeastern Univ.

10:30-10:50
New Sufficient Conditions for Stability Analysis of Time Delay Systems Using Dissipativity Theory, pp. 4171-4176
Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
Haddad, Wassim M. — Georgia Inst. of Tech.
Kamath, Ajeet — Univ. of Missouri-Columbia

10:50-11:10
A Mixed IQC Approach to Nonlinear Delay-Dependent System Analysis, pp. 4177-4182
Roozbehani, Mardavij — Massachusetts Inst. of Tech. ASME
Knospe, Carl R. — Univ. of Virginia

11:10-11:30
A New Delay-Dependent Stability Condition and H_infty Control for Jump Time-Delay Systems, pp. 4183-4188
Cao, Yong-Yan — Univ. of Virginia
Hu, Li-sheng — Shanghai Jiao Tong Univ.
xue, anke — Dept. of Automation, Hangzhou Inst. of Electronics Engineeri

FrA09 Clarendon

Health Monitoring of Large Structural Systems (Invited Session)

Chair: Barroso, Luciana — Texas A&M Univ.
Co-Chair: Johnson, Erik A — Univ. of Southern California
Organizer: Barroso, Luciana — Texas A&M Univ.
Organizer: Christenson, Richard — Colorado School of Mines

09:30-09:50

Identification and Tracking of Structural Parameters with Unknown Excitations (I), pp. 4189-4194

Yang, Jann N. — Univ. of California at Irvine
Pan, Shuwen — Univ. of California, Irvine
Lin, Silian — Univ. of California, Irvine

09:50-10:10

A New Methodology for Non-Destructive Evaluation and Rating of Bridges (I), pp. 4195-4200

Whalen, Timothy M. — Purdue Univ.
Gauthier, Javier F. — Purdue Univ.
Liu, Judy — Purdue Univ.

10:10-10:30

LMS-Based Structural Health Monitoring Methods for the ASCE Benchmark Problem (I), pp. 4201-4206

Chase, J. Geoffrey — Univ. of Canterbury
Barroso, Luciana — Texas A&M Univ.
Hwang, Kyu-Suk — Univ. of Canterbury

10:30-10:50

Damage Localization for Offshore Structures by Modal Strain Energy Decomposition Method (I), pp. 4207-4212

Yang, Hezhen — Coll. of Engineering, Ocean Univ. of China
Li, Huajun — Coll. of Engineering, Ocean Univ. of China
Hu, S.-L. James — Dept. of Ocean Engineering, Univ. of Rhode Island

10:50-11:10

Implementation of a SHM Method on a Numerical Model of a Cable-Stayed Bridge (I), pp. 4213-4218

Caicedo, Juan — Washington Univ.
Dyke, Shirley J. — Washington Univ.

11:10-11:30

A Wavelet Packet Based Sifting Process and Its Application for Structural Health Monitoring (I), pp. 4219-4224

Shinde, Abhijeet — Worcester Pol. Inst.
Hou, Zhikun — Worcester Pol. Inst.

FrA10 Berkeley

Nonlinear Control of Chemical Processes (Invited Session)

Chair: Gatzke, Edward P. — Univ. of South Carolina
Co-Chair: Parker, Robert S. — Univ. of Pittsburgh
Organizer: Gatzke, Edward P. — Univ. of South Carolina
Organizer: Parker, Robert S. — Univ. of Pittsburgh

09:30-09:50
Reduced Order Control in Microchemical Systems (I), pp. 4225-4230
Bleris, Leonidas — Lehigh Univ.
Kothare, Mayuresh V. — Lehigh Univ.

09:50-10:10
Control of a Granulation Process Using a Nonlinear Model Predictive Control Formulation (I), pp. 4231-4236
Gatzke, Edward P. — Univ. of South Carolina
Gantt, Justin A. — Univ. of South Carolina

10:10-10:30
Reduced-Order Modeling of High Purity Distillation Columns for Nonlinear Model Predictive Control (I), pp. 4237-4242
Khowinij, Suabtragool — Univ. of Massachusetts
Bian, Shoujun — Univ. of Massachusetts
Henson, Michael A. — Univ. of Massachussetts
Belanger, Paul — Praxair
Megan, Lawrence — Praxair

10:30-10:50
Control Systems Analysis of a Multiscale Simulation Code for Copper Electrodeposition (I), pp. 4243-4248
Rusli, Effendi — Univ. of Illinois at Urbana-Champaign
Drews, Timothy O. — Univ. of Illinois at Urbana-Champaign
Braatz, Richard D. — Univ. of Illinois at Urbana-Champaign

10:50-11:10
Control-Relevant Identification for Third-Order Volterra Systems: A Polymerization Case Study (I), pp. 4249-4254
Soni, Abhishek — Univ. of Pittsburgh
Parker, Robert S. — Univ. of Pittsburgh

11:10-11:30
Computation of the Nonlinear Nyquist Robust Stability Margin for Structured Uncertainties (I), pp. 4255-4260
Remark, Brian J. — Univ. of Florida
Crisalle, Oscar D. — Univ. of Florida

FrA11 Fairfax A

Decentralized Control (Regular Session)

Chair: Ge, Shuzhi Sam — National Univ. of Singapore
Co-Chair: Guo, Yi — Univ. of Central Florida

09:30-09:50
A Decentralized Algorithm for Robust Constrained Model Predictive Control, pp. 4261-4266
Richards, Arthur — Massachusetts Inst. of Tech.
How, Jonathan P. — Massachusetts Inst. of Tech.

09:50-10:10
Decentralized Output Feedback Control of Large-Scale Nonlinear Systems Interconnected by Unmeasurable States, pp. 4267-4272
Frye, Michael — Univ. of Texas at San Antonio
Lu, Yuanlin — Univ. of Texas at San Antonio
Qian, Chunjiang — Univ. of Texas at San Antonio

10:10-10:30
An Optimization Algorithm for Decentralized Digital Control of Continuous-Time Systems Which Accounts for Inter-Sample Ripple, pp. 4273-4278
Aghdam, Amir G. — Concordia Univ.
Davison, Edward J. — Univ. of Toronto

10:30-10:50
Coordinated Decentralized Adaptive Output Feedback Control of Interconnected Systems, pp. 4279-4284
Hovakimyan, Naira — Virginia Pol. Inst. and State Univ.
Lavretsky, Eugene — The Boeing Co.
Yang, Bong-jun — Georgia Inst. of Tech.
Calise, Anthony J. — Georgia Inst. of Tech.

10:50-11:10
Decentralized Robust Model Reference Adaptive Control for Interconnected Time-Delay Systems, pp. 4285-4289
Hua, Changchun — Yanshan Univ.
Guan, Xinping — Yanshan Univ.
Shi, Peng — School of Tech.

11:10-11:30
Decentralized Disturbance Attenuation for Large-Scale Nonlinear Systems with Delayed State Interconnections, pp. 4290-4295
Guo, Yi — Univ. of Central Florida

FrA12 Fairfax B

Networked Autonomous Agents (Regular Session)

Chair: Chow, Mo-Yuen — North Carolina State Univ.
Co-Chair: Jadbabaie, Ali — Univ. of Pennsylvania

09:30-09:50
On the Stability of the Kuramoto Model of Coupled Nonlinear Oscillators, pp. 4296-4301
Jadbabaie, Ali — Univ. of Pennsylvania
Motee, Nader — Univ. of Pennsylvania
Barahona, Mauricio — Imperial Coll. London

09:50-10:10
Recursive Backstepping Control of Chaotic Duffing Oscillators, pp. 4302-4306
Zaher, Ashraf A. — Oakland Univ.
Zohdy, Mohammed A. — Oakland Univ.
Harb, Ahmad — Jordan Univ. of Science & Tech.

10:10-10:30
Model Predictive Path Tracking Via Middleware for Networked Mobile Robot Over IP Network, pp. 4307-4312
Tipsuwan, Yodyium — Kasetsart Univ.
Chow, Mo-Yuen — North Carolina State Univ.

10:30-10:50
Gain Scheduling Middleware for Networked Mobile Robot Control, pp. 4313-4318
Tipsuwan, Yodyium — Kasetsart Univ.
Chow, Mo-Yuen — North Carolina State Univ.

10:50-11:10
Secure Communication Using H_; Chaotic Synchronization and International Data Encryption Algorithm, pp. 4319-4324
Yu, Gwo-Ruey — I-Shou Univ.

11:10-11:30
LQR-Output Feedback Gain Scheduling of Mobile Networked Controlled Systems, pp. 4325-4329
Tzes, Anthony — Univ. of Patras
Nikolakopoulos, George — Univ. OF PATRAS

FrA13 Beacon Comp D

Feedback and Feedforward Linearization (Regular Session)

Chair: Krstic, Miroslav — Univ. of California at San Diego
Co-Chair: Kazantzis, Nikolaos — Worcester Pol. Inst.

09:30-09:50
Control of a Laboratory Helicopter Using Switched 2-Step Feedback Linearization, pp. 4330-4335
Lopez-Martinez, Manuel — Escuela Superior de Ingenieros. Univ. de Sevilla
Díaz, J.M. — Escuela Superior de Ingenieros. Univ. de Sevilla
Ortega, M. G. — Univ. de Sevilla
Rubio, F.R. — Univ. de Sevilla

09:50-10:10
Superheater Control Based on Feedback Linearization, pp. 4336-4341
Bolek, Wiktor — Wroclaw Univ. of Tech.
Sasiadek, Jurek Z — Carleton Univ.

10:10-10:30
Suppression of Effects of Nonlinearities by Disturbance Observers, pp. 4342-4347
Shahruz, Shahram M. — Berkeley Eng. Res. Inst.

10:30-10:50
Feedforward Systems Linearizable by Coordinate Change, pp. 4348-4353
Krstic, Miroslav — Univ. of California at San Diego

10:50-11:10
Global Adaptive Control of Feedforward Systems Using Dynamic High Gain Scaling, pp. 4354-4359
Krishnamurthy, Prashanth — Pol. Univ.
Khorrami, Farshad — Pol. Univ.

11:10-11:30
Integrator Forwarding Control Laws for Some Classes of Linearizable Feedforward Systems, pp. 4360-4365
Krstic, Miroslav — Univ. of California at San Diego

FrA14 Beacon Comp E

Modeling and Estimation (Regular Session)

Chair: Meckl, Peter H. — Purdue Univ.
Co-Chair: Hill, Stacy D. — Johns Hopkins Univ.

09:30-09:50

Human Thermal Model with Extremities for Asymmetric Environments, pp. 4366-4371

Iyoho, Anthony — Univ. of Missouri-Columbia
Jang, Tai — Univ. of Missouri-Columbia
Nair, Satish — Univ. of Missouri-Columbia

09:50-10:10

A Semiempirical Identification Method by Using a Multiestimation Technique Via Reduced-Order Nominal Models, pp. 4372-4377

Alonso-Quesada, Santiago — Univ. del País Vasco
de la Sen, Manuel — Univ. del Pais Vasco
Bilbao-Guillerna, Aitor — Univ. del País Vasco
Ibeas-Hernández, Asier — Univ. del País Vasco

10:10-10:30

Identificability of Multi-Leaks in a Pipeline, pp. 4378-4383

Verde, Cristina — Inst. de Ingenieria, UNAM
Visairo, Nancy — CENIDET

10:30-10:50

Inequality-Based Estimates of Systems Reliability, pp. 4384-4387

Hill, Stacy D. — Johns Hopkins Univ.
Spall, James C. — Johns Hopkins Univ.

10:50-11:10

Maximum Likelihood Estimation on Mismatch for Stochastic Nearly Optimal Control, pp. 4388-4392

Ye, Zhengmao — Wayne State Univ.
Ye, Yongmao — LiaoNing TV Station

11:10-11:30

High Gain Observer : Attenuation of the Peak Phenomena, pp. 4393-4397

elyaagoubi, elhassane — ENSEM, Univ. Hassan II ain chock
el assoudi, abdellatif — ENSEM
Hammouri, Hassan — Univ. Claude Bernard

FrA15 Beacon Comp F

Fault Detection and Accomodation I (Regular Session)

Chair: Stoustrup, Jakob — Aalborg Univ.
Co-Chair: Garcia, Humberto E. — Argonne National Lab.

09:30-09:50
Fault Diagnosis in a Class of Differential-Algebraic Systems, pp. 4398-4402
Wen, Chen — Simon Fraser Univ.
Saif, Mehrdad — Simon Fraser Univ.
Shafai, Bahram — Northeastern Univ.

09:50-10:10
Improved Diagnosis of Sensor Faults Using Multivariate Statistics, pp. 4403-4407
Lieftucht, Dirk — Queen's Univ. of Belfast
Kruger, Uwe — Queen's Univ. of Belfast
Irwin, George W. — Queen's Univ. of Belfast

10:10-10:30
Analysis of the Delta(AIC) Statistic for Optimal Detection of Small Changes in Dynamic Systems, pp. 4408-4413
Conner, Jeremy — Univ. of California
Seborg, Dale E. — Univ. of California
Larimore, Wallace E. — Adaptics, Inc.

10:30-10:50
Software for Auxiliary Signal Design, pp. 4414-4419
Campbell, Stephen L — North Carolina State Univ.
Nikoukhah, Ramine — INRIA, Rocquencourt

10:50-11:10
Partial PCA-Based Optimal Structured Residual Design for Fault Isolation, pp. 4420-4425
Cao, Jin — Geroge Mason Univ.
Gertler, Janos J. — George Mason Univ.

11:10-11:30
Operational Reconfigurability in Command and Control, pp. 4426-4431
Wu, N. Eva — Binghamton Univ.
Busch, Timothy — Air Force Res. Lab.

FrA16 Beacon Comp A

Control of Fluid Power Systems (Invited Session)

Chair: Barth, Eric J. — Vanderbilt Univ.
Co-Chair: Li, Perry Y. — Univ. of Minnesota
Organizer: Barth, Eric J. — Vanderbilt Univ.
Organizer: Li, Perry Y. — Univ. of Minnesota

09:30-09:50
Impact Control in Hydraulic Actuators with Friction: Theory and Experiments, pp. 4432-4437
Sekhavat, Pooya — Univ. of Manitoba
Wu, Qiong — Univ. of Manitoba
Sepehri, Nariman — Uinv. of Manitoba

09:50-10:10
Programmable Valves: A Solution to Bypass Deadband Problem of Electro-Hydraulic Systems (I), pp. 4438-4443
Liu, Song — Purdue Univ.
Yao, Bin — Purdue Univ.

10:10-10:30
Nonlinear Averaging Applied to the Control of Pulse Width Modulated (PWM) Pneumatic Systems (I), pp. 4444-4448
Shen, Xiangrong — Graduate Res. Assistant
Zhang, Jianlong — Univ. of Southern California
Barth, Eric J. — Vanderbilt Univ.
Goldfarb, Michael — Vanderbilt Univ.

10:30-10:50
Optimal and Robust Design of Unstable Valve (I), pp. 4449-4454
Yuan, Qinghui — Univ. of Minnesota
Li, Perry Y. — Univ. of Minnesota

10:50-11:10
Earthmoving Vehicle Powertrain Controller Design and Evaluation (I), pp. 4455-4460
Carter, Don — Raytheon
Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign

11:10-11:30
Sliding Mode Control of a Direct-Injection Monopropellant-Powered Actuator (I), pp. 4461-4466
Fite, Kevin B. — Vanderbilt Univ.
Mitchell, Jason E. — Vanderbilt Univ.
Barth, Eric J. — Vanderbilt Univ.
Goldfarb, Michael — Vanderbilt Univ.

FrA17 Beacon Comp G

Control of Discrete Event Systems (Regular Session)

Chair: Su, Hongye — Zhejiang Univ.
Co-Chair: Ray, Asok — Pennsylvania State Univ.

09:30-09:50

Structured Design of Reconfigurable Logic Control Functions through Sequential Function Charts (I), pp. 4467-4471

Carpanzano, Emanuele — National Res. Council
Cataldo, Andrea — National Res. Council
Tilbury, Dawn M. — Univ. of Michigan

09:50-10:10

Control Using Nondeterministic Superviors for Partially Observed Discrete Event Systems, pp. 4472-4476

Kumar, Ratnesh — Iowa State Univ.
Jiang, Shengbing — General Motors Corp.
Zhou, Changyan — Iowa state Univ.
Qiu, Wenbin — Iowa state Univ.

10:10-10:30

Resilience to Failures and Reconfigurations in the Supervision Based on Place Invariants (I), pp. 4477-4482

Iordache, Marian — Univ. of Notre Dame
Antsaklis, Panos J. — Univ. of Notre Dame

10:30-10:50

Decentralized Control of Discrete Event Systems Using Prioritized Composition with Exclusion, pp. 4483-4487

Qiu, Wenbin — Iowa State Univ.
Kumar, Ratnesh — Iowa State Univ.
Chandra, Vigyan (Vigs) — Eastern Kentucky Univ.

10:50-11:10

Control of Nondeterministic Discrete Event Systems for Bisimulation Equivalence, pp. 4488-4492

Zhou, Changyan — Iowa state Univ.
Kumar, Ratnesh — Iowa State Univ.
Jiang, Shengbing — General Motors Corp.

11:10-11:30

Supervisor Synthesis for Bounded Petri Nets Based on a Transformation Function, pp. 4493-4498

Ru, Yu — Zhejiang Univ.
Wu, Weimin — Zhejiang Univ.
Su, Hongye — Zhejiang Univ.
Chu, Jian — Zhejiang Univ.

FrA18 Beacon Comp B

Adaptive Systems (Regular Session)

Chair: Bonvin, Dominique — EPFL
Co-Chair: Pan, Zigang — Univ. of Cincinnati

09:30-09:50
Fitting Controllers to Data: The MIMO Case, pp. 4499-4504
Cabral, Fabricio B. — Inst. Militar De Engenharia
Safonov, Michael G. — Univ. of Southern California

09:50-10:10
Neural Network Adaptive Dynamic Output Feedback Control for Nonlinear Nonnegative Systems Using Tapped Delay Memory Units, pp. 4505-4510
Hayakawa, Tomohisa — Kyoto Univ.
Haddad, Wassim M. — Georgia Inst. of Tech.
Hovakimyan, Naira — Virginia Pol. Inst. and State Univ.
Bailey, James M. — Emory Univ. Hospital

10:10-10:30
Autonomus Creation of Cause and Effect Relations: Metrics for Evaluation of Goodness of Linguistic Rules, pp. 4511-4516
Sharma, Nitin — Oklahoma State Univ.
Rhinehart, R. Russell — Oklahoma State Univ.

10:30-10:50
Reinforcement Learning with Supervision by a Stable Controller, pp. 4517-4522
Rosenstein, Michael — Univ. of Massachusetts
Barto, Andrew — Univ. of Massachusetts

10:50-11:10
Adaptive Controller Design and Disturbance Attenuation for SISO Linear Systems with Noisy Output Measurements and Partly Measured Disturbances, pp. 4523-4528
Zeng, Sheng — Univ. of Cincinnati
Pan, Zigang — Univ. of Cincinnati

11:10-11:30
Accuracy Aspects of Iterative Correlation-Based Controller Tuning, pp. 4529-4534
Miskovic, Ljubisa — EPFL
Karimi, Alireza — EPFL
Bonvin, Dominique — EPFL

FrA19 Beacon Comp H

Switched Systems II (Regular Session)

Chair: Kulkarni, Vishwesh — Univ. of Colorado, Boulder
Co-Chair: Xu, Xuping — Penn State Erie

09:30-09:50

Stabilization of Switched Symmetric Systems, pp. 4535-4536

Xie, Guangming — Peking Univ.
Fu, Qi — Peking Univ.
Wang, Long — Peking Univ.

09:50-10:10

Practical Stabilizability of a Class of Switched Systems, pp. 4537-4542

Xu, Xuping — Penn State Erie

10:10-10:30

Robust H_{infty} Control and Quadratic Stabilization of Uncertain Switched Linear Systems, pp. 4543-4548

Ji, Zhijian — Peking Univ.
Wang, Long — Peking Univ.
Xie, Dongmei — Peking Univ.

10:30-10:50

Global Stability Analysis of DC-DC Converters Using Sampled-Data Modeling, pp. 4549-4554

Almer, Stefan — Royal Inst. of Tech.
Jonsson, Ulf T. — Royal Inst. of Tech.
Kao, Chung-Yao — Royal Inst. of Tech.
Mari, Jorge — Royal Inst. of Tech.

10:50-11:10

Stability Analysis for Switched Systems with Continuous-Time and Discrete-Time Subsystems, pp. 4555-4560

Zhai, Guisheng — Wakayama Univ.
Lin, Hai — Univ. of Notre Dame
Michel, Anthony N. — Univ. of Notre Dame
Yasuda, Kazunori — Wakayama Univ.

11:10-11:30

Necessary and Sufficient Conditions for Stability of a Class of Second Order Switched Systems, pp. 4561-4562

Paul, Ayanendu — Univ. of Southern California
Akar, Mehmet — Univ. of Southern California
Safonov, Michael G. — Univ. of Southern California
Mitra, Urbashi — Univ. of Southern California

FrNS Liberty A

Writing a Winning NSF CAREER Proposal (Special Session)

Chair: Baheti, Kishan — National Science Foundation
Co-Chair: Tomizuka, Masayoshi — UC Berkleley/NSF
Organizer: Baheti, Kishan — National Science Foundation
Organizer: Tomizuka, Masayoshi — UC Berkleley/NSF

FrM01 Commonwealth

Control-Oriented Approaches to Supply Chain Management in Semiconductor Manufacturing (Tutorial Session)

Chair: Rivera, Daniel E. — Arizona State Univ.
Co-Chair: Kempf, Karl — Intel Corp.
Organizer: Rivera, Daniel E. — Arizona State Univ.

13:30-14:30

Control-Oriented Approaches to Supply Chain Management in Semiconductor Manufacturing (I), pp. 4563-4576
Kempf, Karl — Intel Corp.

14:30-14:45

*A Tutorial on Strategic Safety Stock Placement in Supply Chains (I)**
Willems, Sean — Boston Univ. School of Management

14:45-15:00

A Model Predictive Control Strategy for Supply Chain Management in Semiconductor Manufacturing under Uncertainty (I), pp. 4577-4582
Wang, Wenlin — Arizona State Univ.
Rivera, Daniel E. — Arizona State Univ.
Kempf, Karl G. — Intel Corp.
Smith, Kirk D. — Intel Corp.

15:00-15:15

Modeling, Validation and Control of Manufacturing Systems (I), pp. 4583-4588
Lefeber, Erjen — Eindhoven Univ. of Tech.
van den Berg, Roel — Eindhoven Univ. of Tech.
Rooda, J.E. — Eindhoven Univ. of Tech.

15:15-15:30

Continuous Models for Production Flows (I), pp. 4589-4594
Armbruster, Dieter — Arizona State Univ.
Ringhofer, Christian — Arizona State Univ.
Jo, Tae-Chang — New Mexico Inst. of Mining and Tech.

FrM02 Independence Ballroom East

Robust Control Synthesis (Regular Session)

Chair: Swevers, Jan — K. U. Leuven
Co-Chair: Cheng, Zhaolin — Shandong Univ.

13:30-13:50
Singular LQ Suboptimal Control Problem with Disturbance Rejection for Descriptor Systems, pp. 4595-4600
Chen, Li — Shandong Univ.
Cheng, Zhaolin — Shandong Univ.

13:50-14:10
Optimal Decoupling for MIMO-Controller Design with Robust Performance, pp. 4601-4606
Vaes, David — Katholieke Univ. Leuven
Swevers, Jan — K. U. Leuven
Sas, Paul — Katholieke Univ. Leuven

14:10-14:30
Constrained MCP under Closed-Loop Uncertainty, pp. 4607-4612
Warren, Adam — McMaster Univ.
Marlin, Thomas E. — McMaster Univ.

14:30-14:50
Robust Control Synthesis with General Frequency Domain Specifications: Static Gain Feedback Case, pp. 4613-4618
Iwasaki, Tetsuya — Univ. of Virginia
Hara, Shinji — The Univ. of Tokyo

14:50-15:10
Multiobjective Optimization Applied to Robust H2/H-Infinity State-Feedback Control Synthesis, pp. 4619-4624
Gonçalves, Eduardo N. — Centro Federal de Educação Tecnológica de Minas Gerais
Palhares, Reinaldo M. — Federal Univ. of Minas Gerais (UFMG)
Takahashi, Ricardo H. C. — Federal Univ. of Minas Gerais (UFMG)

15:10-15:30
Design of a Novel Simply Structured Mixed-Sensitivity Loop-Shaping Robust Controller for a Gas-Turbine, pp. 4625-4630
Nobakhti, Amin — UMIST
Munro, Neil — UMIST

FrM03 Hampton A

Path Planning (Regular Session)

Chair: Singhose, William E. — Georgia Inst. of Tech.
Co-Chair: Steinbuch, Maarten — Eindhoven Univ. of Tech.

13:30-13:50
Nonlinear Sliding Mode Control and Feasible Workspace Analysis for a Cable Suspended Robot with Input Constraints and Disturbances, pp. 4631-4636
oh, so-ryeok — Univ. of Delaware
Agrawal, Sunil K. — Univ. of delaware

13:50-14:10
Trajectory Planning and Feedforward Design for High Performance Motion Systems, pp. 4637-4642
Lambrechts, Paul Frank — Eindhoven Univ. of Tech.
Boerlage, Matthijs — Eindhoven Univ. of Tech.
Steinbuch, Maarten — Eindhoven Univ. of Tech.

14:10-14:30
Robot Path Planning for Spray Coating: A Frequency Domain Approach, pp. 4643-4648
Duncan, Stephen — Univ. of Oxford
Jones, Paul — Univ. of Oxford
Wellstead, Peter E. — Hamilton Inst.

14:30-14:50
Variable Parameter EW-RLS Algorithm with Dead Zone for the Trajectory Tracking of the Joints of the Manipulator, pp. 4649-4652
Xue, Yuncan — Shanghai Jiaotong Univ.
Du, Hongbin — Shanghai Jiaotong Univ.
Shao, Huihe — Shanghai Jiaotong Univ.

14:50-15:10
Nonholonomic Motion Planning: Steering Using Bang-Bang Control, pp. 4653-4656
Li, Sheng — Nanjing Univ. of Sci. and Tech.
Hu, Weili — Nanjing Univ. of Sci. and Tech.
Ma, Guoliang — Nanjing Univ. of Sci. and Tech.
Chen, Qingwei — Nanjing Univ. of Sci. and Tech.
Wu, Xiaobei — Nanjing Univ. of Sci. and Tech.

15:10-15:30
Reference Shaping of Periodic Trajectory for Systems Having Constraints, pp. 4657-4662
Sugie, Toshiharu — Kyoto Univ.
Suzuki, Hiromi — Kyoto Univ.

FrM04 Hampton A

Constrained Control (Regular Session)

Chair: Beard, Randal W. — Brigham Young Univ.
Co-Chair: Calise, Anthony J. — Georgia Inst. of Tech.

13:30-13:50
Constrained Nonlinear Tracking Control for Small Fixed-Wing Unmanned Air Vehicles, pp. 4663-4668
Ren, Wei — Brigham Young Univ.
Beard, Randal W. — Brigham Young Univ.

13:50-14:10
Properties of a New Parameterization for the Control of Constrained Systems with Disturbances, pp. 4669-4674
Kerrigan, Eric C. — Univ. of Cambridge
Maciejowski, Jan M. — Univ. of Cambridge

14:10-14:30
Augmenting Adaptive Output Feedback Control of Uncertain Nonlinear Systems with Actuator Nonlinearities, pp. 4675-4680
Yang, Bong-jun — Georgia Inst. of Tech.
Calise, Anthony J. — Georgia Inst. of Tech.
Hovakimyan, Naira — Virginia Pol. Inst. and State Univ.

14:30-14:50
A Globally Stabilising Controller under Saturated Input for Linear Planar Systems with One Unstable Pole, pp. 4681-4686
Favez, Jean-Yves — EPFL
Mullhaupt, Philippe — Ec. Pol. Fed. de Lausanne
Srinivasan, B. — Res. Associate
Bonvin, Dominique — EPFL

14:50-15:10
Phase Compensation Design for Prevention of PIO Due to Actuator Rate Saturation, pp. 4687-4691
Alcalá, Ismael — Univ. de Sevilla
Gordillo, Francisco — Escuela Superior de Ingenieros Univ. de Sevilla
Aracil, Javier — Univ. de Sevilla

15:10-15:30
Gain Tuned Internal Model Control for Handling Saturation in Actuators, pp. 4692-4697
Ling, Chung Seng — The Univ. of Birmingham
Brown, Michael D. — Lockheed Martin UK
Weston, Paul Francis — The Univ. of Birmingham
Roberts, Clive — The Univ. of Birmingham

FrM05 Exeter

Advances in Automotive and Vehicle Control (Invited Session)

Chair: Bevly, David M. — Auburn Univ.
Co-Chair: Brennan, Sean — Penn State Univ.
Organizer: Tai, Meihua — Pol. Univ.
Organizer: Brennan, Sean — Penn State Univ.

13:30-13:50

Managing Complexity in Large Scale Control System Design (I), pp. 4698-4703

Phillips, Anthony M. — Ford Motor Co.
Yanakiev, Diana — Ford Motor Company
Jiang, Fangjun — The Inst. Systems and Automation Society

13:50-14:10

Control of a Ground Vehicle Using Quadratic Programming Based Control Allocation Techniques (I), pp. 4704-4709

Plumlee, John H. — Auburn Univ.
Bevly, David M. — Auburn Univ.
Hodel, Alan S. — Auburn Univ.

14:10-14:30

A Stochastic Control Strategy for Hybrid Electric Vehicles (I), pp. 4710-4715

Lin, Chan-Chiao — Univ. of Michigan
Peng, Huei — Univ. of Michigan
Grizzle, Jessy W. — Univ. of Michigan

14:30-14:50

Power Distribution Control Coordinating Ultracapacitors and Batteries for Electric Vehicles (I), pp. 4716-4721

Ozatay, Evren — Penn. State Univ.
Zile, Ben — Penn. State Univ.
Anstrom, Joel — Penn. State Univ.
Brennan, Sean — Penn. State Univ.

14:50-15:10

Heavy-Duty Truck Control: Short Inter-Vehicle Distance Following (I), pp. 4722-4727

Lu, Xiao-yun — Univ. of California at Berkeley
Shladover, Steven E. — Univ. of California at Berkeley
Hedrick, Karl — Univ. of California at Berkeley

15:10-15:30

Human Simulating Control Algorithm on Vehicle Lateral Tracking (I), pp. 4728-4733

Xu, youchun — Tsinghua Univ. Beijing, P.R. China
Li, Keqiang — Tsinghua Univ.
Ma, Ying — Tsinghua Univ.
Gao, Feng — Tsinghua Univ.
Yuan, Yi — Military Transportation Inst.
Zhao, Yufan — Military Transportation Inst.

FrM06 Dalton

Multisensor Management and Fusion Algorithms for Target Tracking (Tutorial Session)

Chair: Trailovic, Lidija — Univ. of Colorado at Boulder
Co-Chair: Kalandros, Michael K. — Johns Hopkins Applied Physics Lab.
Organizer: Pao, Lucy Y. — Univ. of Colorado
Organizer: Bar-Shalom, Yaakov — Univ. of Connecticut

13:30-14:30
Tutorial on Multisensor Management and Fusion Algorithms for Target Tracking (I), pp. 4734-4748
Kalandros, Michael K. — Johns Hopkins Applied Physics Lab.
Trailovic, Lidija — Univ. of Colorado at Boulder
Pao, Lucy Y. — Univ. of Colorado
Bar-Shalom, Yaakov — Univ. of Connecticut

14:30-14:50
Practical Implementation Issues of Out-Of-Sequence Measurements (I), pp. 4749-4749
Lanzkron, Paul J. — ALPHATECH Inc

14:50-15:10
Multiple Hypotheses Tracking Based Distributed Fusion Using Decorrelated Pseudo Measurement Sequence (I), pp. 4750-4751
Mallick, Mahendra — Lockheed Martin Orincon Corp.
Pao, Lucy Y. — Univ. of Colorado
Chang, Kuo-Chu — George Mason Univ.

15:10-15:30
Closing the Loop in Sensor Fusion Systems: Stochastic Dynamic Programming Approaches (I), pp. 4752-4757
Schneider, Michael — ALPHATECH
Mealy, Gregory — ALPHATECH
Pait, Felipe M — Univ. Sao Paulo and Alphatech, Inc.

15:30-15:30
Feature Level Data Fusion of HSI and Multi-View SAR: Principal Component Approach (I)†
O'Neil, Sean — MITRE Coporation

FrM07 Gardner A

Identification of Nonlinear Systems (Regular Session)

Chair: Martinez-Guerra, Rafael — CINVESTAV-IPN
Co-Chair: Westwick, David — Univ. of Calgary

13:30-13:50
Extended Recursive Least Squares Algorithm for Nonlinear Stochastic Systems, pp. 4758-4763
Chen, huixin — Univ. of Sunderland

13:50-14:10
Recursive Identification of Systems with Hard Input Nonlinearities of Known Structure, pp. 4764-4769
Giri, F. — ISMRA
Rochdi, Y. — Ismra
Chaoui, F.Z. — Ismra

14:10-14:30
Gradient Algorithm for On-Line Estimation of Parameters and Nonlinear Restoring Forces in Civil Structures, pp. 4770-4775
Garrido, Rubén — Cinvestav-IPN
Rivero, Francisco J. — CINVESTAV
Gomez, Bernardo — CINVESTAV
Martinez-Garcia, Juan Carlos — CINVESTAV-IPN
Martinez-Guerra, Rafael — CINVESTAV-IPN

14:30-14:50
Identification of Rate-Dependent Hysteresis Using the Semilinear Duhem Model, pp. 4776-4781
Oh, JinHyoung — Univ. of Michigan
Bernstein, Dennis S. — Univ. of Michigan

14:50-15:10
A Direct Approach to Identify Closed Loop Wiener Systems, Whose Linear Dynamics Are Open-Loop Unstable, pp. 4782-4787
Zhao, Yong — Univ. of Calgary
Westwick, David — Univ. of Calgary

15:10-15:30
Basis-Function Optimization for Subspace-Based Nonlinear Identification of Systems with Measured-Input Nonlinearities, pp. 4788-4793
Palanthandalam-Madapusi, Harish — Univ. of Michigan, Ann Arbor
Hoagg, Jesse B. — Univ. of Michigan
Bernstein, Dennis S. — Univ. of Michigan

FrM08 Gardner B

Time-Delay Systems II (Regular Session)

Chair: Tadmor, Gilead — Northeastern Univ.
Co-Chair: Niculescu, Silviu-Iulian — Univ. de Tech. de Compiegne

13:30-13:50
H-Infinity Control with Preview and Delay, pp. 4794-4799
Kuroiwa, Yohei — Royal Inst. of Tech.
Kimura, Hidenori — Univ. of Tokyo

13:50-14:10
Stability Analysis and H-Inf Synthesis for Linear Systems with Time-Varying Delays, pp. 4800-4805
Xue, Anke — Hangzhou Inst. of Electronics Engineering
Cao, Yong-Yan — Univ. of Virginia
Pi, Daoying — Zhejiang Univ.

14:10-14:30
Design of Observers for Descriptor Systems with Delayed State and Unknown Inputs, pp. 4806-4810
Koenig, D. — Lab. d'Automatique de Grenoble
Marx, Benoit — Lab. d'Automatique de Grenoble

14:30-14:50
Optimal Guaranteed Cost Control of Singular Systems with Delayed State and Parameter Uncertainties, pp. 4811-4816
Yu, Li — Zhejiang Univ. of Tech.
Xu, JianMing — Zhejiang Univ. ofTech.
Han, Qing-Long — Central Queesland Univ.

14:50-15:10
Stabilization of Input Delayed Systems Via Memoryless State Feedback, pp. 4817-4818
Kanno, Shin — Kyocera Corp.
Chen, Gan — Nanzan Univ.

15:10-15:30
Using Anti-Windup Loops for Enlarging the Stability Region of Time-Delay Systems Subject to Input Saturation, pp. 4819-4824
Gomes Da Silva Jr., Joao Manoel — Univ. Federal do Rio Grande do Sul (UFRGS)
Tarbouriech, Sophie — LAAS-CNRS
Garcia, Germain — LAAS-CNRS

FrM09	Clarendon
Command Shaping for Flexible Systems (Regular Session)	
Chair: Agrawal, Sunil K.	Univ. of Delaware
Co-Chair: Devasia, Santosh	Univ. of Washington

13:30-13:50
Jerk Limited Input Shapers, pp. 4825-4830
Singh, Tarunraj — State Univ. of New York at Buffalo

13:50-14:10
Minimum-Time/Energy Output-Transitions in Linear Systems (I), pp. 4831-4836
Iamratanakul, Dhanakorn — Univ. of Washington
Devasia, Santosh — Univ. of Washington

14:10-14:30
Wave-Echo Position Control of Flexible Systems: Towards an Explanation and Theory, pp. 4837-4842
O'Connor, William — Univ. Coll. Dublin

14:30-14:50
Jerk Derivative Feedforward Control for Motion Systems (I), pp. 4843-4848
Boerlage, Matthijs — Eindhoven Univ. of Tech.
Tousain, Rob L. — Delft Univ. of Tech.
Steinbuch, Maarten — Eindhoven Univ. of Tech.

14:50-15:10
Time-Optimal Motion Control of Piezoelectric Actuator: STM Application (I), pp. 4849-4854
Xu, Yongkai — Purdue Univ.
Meckl, Peter H. — Purdue Univ.

15:10-15:30
Closed Form Minimax Time-Delay Filters for Underdamped Systems, pp. 4855-4860
Singh, Tarunraj — State Univ. of New York at Buffalo
Muenchhof, Marco — Univ. of Tech. at Darmstadt

FrM10 Berkeley

Process Control and Identification (Regular Session)

Chair: Simani, Silvio — Univ. of Ferrara
Co-Chair: Braatz, Richard D. — Univ. of Illinois at Urbana-Champaign

13:30-13:50

Online Optimization of a Batch Reaction Recipe - Development and Experimental Demonstration, pp. 4861-4866

Alam, Samir — none
Rhinehart, R. Russell — Oklahoma State Univ.
High, Karen — Oklahoma State Univ.
Gemperline, Paul — East Carolina Univ.

13:50-14:10

A Novel Control Scheme for Typical Unstable Processes with Time Delay, pp. 4867-4872

liu, tao — Shanghai Jiaotong Univ.
He, Xing — Shanghai Jiao Tong Univ.
Gu, Danying — Shanghai Jiaotong Univ.

14:10-14:30

On the Wafer/pad Friction of Linear Chemical-Mechanical Planarization (CMP): Modeling, Analysis and Experiments, pp. 4873-4878

Yi, Jingang — Lam Res. Corp.

14:30-14:50

A Bmi-Based Design for Robust Pid Controllers with Two-Degrees-Of-Freedom Structure, pp. 4879-4884

Aoyama, Jun — Graduate School of Engineering
Konishi, Katsumi — The Univ. of Tokyo
Yamamoto, Toru — Hiroshima Univ.
Hinamoto, Takao — Hiroshima Univ.

14:50-15:10

Identification of a Chemical Process for Fault Detection Application, pp. 4885-4890

Simani, Silvio — Univ. of Ferrara (ITALY)

15:10-15:30

Multi-Objective Input Signal Design for Plant Friendly Identification of Process Systems, pp. 4891-4896

Narasimhan, Sridharakumar — Clarkson Univ.
Rengaswamy, Raghunathan — clarkson Univ.

FrM11 Fairfax A

Networked Control Systems (Regular Session)

Chair: Freudenberg, James S. — Univ. of Michigan
Co-Chair: Daoutidis, Prodromos — Univ. of Minnesota

13:30-13:50
Inherent Issues in Networked Control Systems: A Survey, pp. 4897-4902
Hokayem, Peter F. — Univ. of Illinois at Urbana-Champaign
Abdallah, Chaouki T. — Univ. of New Mexico

13:50-14:10
Feedback Stabilization Over Signal-To-Noise Ratio Constrained Channels, pp. 4903-4908
Braslavsky, Julio H. — Univ. of Newcastle
Middleton, Rick — Univ. of Newcastle
Freudenberg, James S. — Univ. of Michigan

14:10-14:30
Inverted Pendulum Stabilization through the Ethernet Network, Performance Analysis, pp. 4909-4914
Natale, Oreste Riccardo — Univ. degli Studi del Sannio in Benevento
Sename, Olivier — INPG
Canudas de Wit, Carlos — ENSIEG-INPG

14:30-14:50
Stability of Quantized Control Systems under Dynamic Bit Assignment, pp. 4915-4920
Ling, Qiang — Univ. of Notre Dame
Lemmon, Michael — Univ. of Notre Dame

14:50-15:10
A Study on Decentralized Receding Horizon Control for Decoupled Systems, pp. 4921-4926
Keviczky, Tamas — Univ. of Minnesota
Borrelli, Francesco — Univ. of Minnesota
Balas, Gary J. — Univ. of Minnesota

FrM12 Fairfax B

Cooperative Control (Regular Session)

Chair: Jadbabaie, Ali — California Inst. of Tech.
Co-Chair: Darbha, Swaroop — Texas A & M Univ.

13:30-13:50
On the Synthesis of Control Laws for a Network of Autonomous Agents, pp. 4927-4932
Gupta, Vijay — California Inst. of Tech.
Hassibi, Babak — Stanford Univ.
Murray, Richard M. — California Inst. of Tech.

13:50-14:10
Convex Synthesis of Controllers for Consensus, pp. 4933-4938
Ayres De Castro, Gustavo — Univ. of California at Los Angeles
Paganini, Fernando — Univ. of California at Los Angeles

14:10-14:30
Consensus of Information under Dynamically Changing Interaction Topologies, pp. 4939-4944
Ren, Wei — Brigham Young Univ.
Beard, Randal W. — Brigham Young Univ.

14:30-14:50
Information Structures to Secure Control of Globally Rigid Formations, pp. 4945-4950
Eren, Tolga — Columbia Univ.
Whiteley, Walter — York Univ.
Morse, A. Stephen — Yale Univ.
Anderson, Brian D.O. — Australian National Univ. and National ICT Australia
Belhumeur, Peter N. — Columbia Univ.

14:50-15:10
Information Structures to Control Formation Splitting and Merging, pp. 4951-4956
Eren, Tolga — Columbia Univ.
Anderson, Brian D.O. — Australian National Univ. and National ICT Australia
Morse, A. Stephen — Yale Univ.
Whiteley, Walter — York Univ.
Belhumeur, Peter N. — Columbia Univ.

15:10-15:30
On the Structural Complexity of Multi-Agent Robot Formations, pp. 4957-4962
Muhammad, Abubakr — Georgia Inst. of Tech.
Egerstedt, Magnus — Georgia Inst. of Tech.

FrM13 Beacon Comp D

Nonlinear Time-Delay Systems (Regular Session)

Chair: Olgac, Nejat — Univ. of Connecticut
Co-Chair: Wang, Long — Peking Univ.

13:30-13:50

Delay-Dependent Robust Output Feedback Stabilization of Uncertain State-Delayed Systems with Saturating Actuators, pp. 4963-4965

Haurani, Ammar — Mcgill Univ.
Michalska, Hannah H. — McGill Univ.
Boulet, Benoit — Mcgill Univ.

13:50-14:10

Control of Integrating Dead Time Processes with Long Time Delay, pp. 4966-4971

Mohamed, Hossam A. Abdel Fattah — Cairo Univ.
Gesraha, Ahmed — Faculty of Engineering, Cairo Univ.
Hanafy, Adel Abdel Raouf — Faculty of Engineering, Cairo Univ.

14:10-14:30

A New Stability Analysis of Time Delay Control for Input/Output Linearizable Plants, pp. 4972-4979

Jung, Je Hyung — Korea Advanced Inst. of Science and Tech. (KAIST)
Chang, Pyung Hun — Korea Adv. Inst. of Sci. & Tech.
Kwon, Oh Seok — LG Production engineering Res. Center

14:30-14:50

Analysis of Persistent Bounded Disturbance Rejection for Lurie Systems of the Neutral Type, pp. 4980-4985

Yu, Mei — Peking Univ.
Hao, Fei — Peking Univ.
Wang, Long — Peking Univ.

14:50-15:10

Robust Stabilization for Singular Systems with Time-Delays and Saturating Controls, pp. 4986-4991

Zhou, Wu-Neng — Zhejiang Univ.
Lu, Ren-Quan — Zhejiang Univ.
Su, Hong-Ye — Zhejiang Univ.
Chu, Jian — Zhejiang Univ.

15:10-15:30

Guaranteed Cost Control for Uncertain Nonlinear Time-Delay Systems, pp. 4992-4997

Jin, feihu — Harbin Inst. of Tech.
Hong, bingrong — Harbin Inst. of Tech.
Gao, Huijun — Harbin Inst. of Tech.

FrM14 Beacon Comp E

Geometric and Computational Methods in Control (Regular Session)

Chair: Chen, YangQuan — Utah State Univ.
Co-Chair: Fujioka, Hisaya — Kyoto Univ.

13:30-13:50
Exponential Representations of Two-Input Nonlinear Discrete-Time Dynamics, pp. 4998-5003
Monaco, Salvatore — Univ. of Rome, Italie
Normand-Cyrot, Marie-Dorothée — CNRS-Supélec, France
Califano, Claudia — Univ. of Rome, Italie

13:50-14:10
A Higher Order Stokes-Dirac Structure for Distributed-Parameter Port-Hamiltonian Systems, pp. 5004-5009
Nishida, Gou — Tokyo Inst. of Tech.
Yamakita, Masaki — Tokyo Inst. of Tech.

14:10-14:30
Simulation Studies on the Boundary Stabilization and Disturbance Rejection for Fractional Diffusion-Wave Equation, pp. 5010-5015
Liang, Jinsong — Utah State Univ.
Chen, YangQuan — Utah State Univ.
Fullmer, R. Rees — Utah State Univ.

14:30-14:50
Implementing Systems with Two Point Boundary Conditions for a CACSD Package of Sampled-Data Systems, pp. 5016-5021
Fujioka, Hisaya — Kyoto Univ.

14:50-15:10
A Multi-Time Scales Model and Control for Hybrid Stochastic Production Systems with Quadratic Cost, pp. 5022-5027
SONG, Chunyue — Zhejiang Univ.
SUN, Jianping — Zhengzhou Inst. of Tech.
LI, Ping — Zhejiang Univ.

15:10-15:30
Disturbance Rejection of Switched Systems, pp. 5028-5033
Xie, Dongmei — Peking Univ.
Wang, Long — Peking Univ.

FrM15 Beacon Comp F

Fault Detection and Accomodation II (Regular Session)

Chair: Shafai, Bahram — Northeastern Univ.
Co-Chair: Chowdhury, Fahmida N. — Univ. of Louisiana at Lafayette

13:30-13:50
Energetic Approach to Parametric Fault Detection and Isolation, pp. 5034-5039
Fantuzzi, Cesare — Univ. of Modena and Reggio Emilia
Secchi, Cristian — Univ. of Modena and Reggio Emilia

13:50-14:10
Robust Multiple-Fault Detection and Isolation: A Gradient Flow Approach, pp. 5040-5045
Casavola, Alessandro — Univ. degli Studi della Calabria
Famularo, Domenico — ICAR-Consiglio Nazionale Delle Ricerche
Franze, Giuseppe — Univ. degli Studi della Calabria

14:10-14:30
A Controller Performance Monitor, pp. 5046-5051
Owusu, Samuel Odei — Oklahoma State Univ.
Rhinehart, R. Russell — Oklahoma State Univ.

14:30-14:50
Fault Diagnosis in a Class of Nonlinear Systems Using Identification and GLR Testing, pp. 5052-5057
Cao, Jin — Geroge Mason Univ.
Gertler, Janos J. — George Mason Univ.

14:50-15:10
A New Technique for Fast Detection of Progressive Faults, pp. 5058-5063
Chowdhury, Fahmida N. — Univ. of Louisiana at Lafayette
Jiang, Bin — Univ. of Louisiana at lafayette (ULL)

15:10-15:30
Design of Robust Fault Detection and Isolation Observers for Singular Time Delay Systems, pp. 5064-5065
Zhu, Shuqian — Shandong Univ.
Cheng, Zhaolin — Shandong Univ.

FrM16 Beacon Comp A

Fluid Power Control (Regular Session)

Chair: Barth, Eric J. — Vanderbilt Univ.
Co-Chair: Sepehri, Nariman — Uinv. of Manitoba

13:30-13:50
*Nonlinear Modeling and Control of an Electrohydraulic System**
Kojic, Aleksandar — Robert Bosch Res. and Tech. Center
Hathout, Jean-Pierre — Robert Bosch Corp.
Ahmed, Jasim — Senior Systems Engineer

13:50-14:10
Adaptive Output Force Tracking Control of Hydraulic Cylinders, pp. 5066-5071
Zhu, Wen-Hong — Canadian Space Agency
Dupuis, Erick — Canadian Space Agency
Piedboeuf, Jean-Claude — Canadian Space Agency

14:10-14:30
Torque Control of Electrorheological Fluidic Actuators, pp. 5072-5077
Vitrani, Marie-Aude — Univ. Paris VI
Nikitczuk, Jason — Northeastern Univ.
Morel, Guillaume — Univ. Paris VI
Mavroidis, Constantinos — Northeastern Univ.

14:30-14:50
Design and Experimental Evaluation of a Nonlinear Position Controller for a Pneumatic Actuator with Friction, pp. 5078-5083
Karpenko, Mark — Univ. of Manitoba
Sepehri, Nariman — Uinv. of Manitoba

14:50-15:10
QFT Design of a PI Controller with Dynamic Pressure Feedback for Positioning a Pneumatic Actuator, pp. 5084-5089
Karpenko, Mark — Univ. of Manitoba
Sepehri, Nariman — Uinv. of Manitoba

15:10-15:30
Robust Second Order Sliding Mode Controller for Electropneumatic Actuator, pp. 5090-5095
Laghrouche, Salah — Ec. Centrale de Nantes / CNRS
Smaoui, Mohamed — L'Inst. National des Sciences Appliquées de Lyon
Brun, Xavier — Insa De Lyon
Plestan, Franck — Ec. Centrale De Nantes - Cnrs

FrM17 Beacon Comp G

Discrete Event Systems (Regular Session)

Chair: Kumar, Ratnesh — Iowa State Univ.
Co-Chair: Iordache, Marian — Univ. of Notre Dame

13:30-13:50
Automatic Synthesis of Multiple Place Resource Models with Petri Nets, pp. 5096-5101
Ferrarini, Luca — Pol. di Milano
Piroddi, Luigi — Pol. di Milano

13:50-14:10
Event Diagnosis of Discrete-Event Systems with Uniformly and Nonuniformly Bounded Diagnosis Delays, pp. 5102-5107
Yoo, Tae-sic — Argonne National Lab.
Garcia, Humberto E. — Argonne National Lab.

14:10-14:30
A Discrete Event Systems Approach to Network Fault Management Detection and Diagnosis of Faults, pp. 5108-5113
Bhattacharyya, Siddhartha — Univ. of kentucky
Huang, Zhongdong — Univ. of Kentucky
Chandra, Vigyan (Vigs) — Eastern Kentucky Univ.
Kumar, Ratnesh — Iowa State Univ.

14:30-14:50
Diagnosis of Discrete Event Systems in Rules-Based Model Using First-Order Linear Temporal Logic, pp. 5114-5119
Huang, Zhongdong — Univ. of Kentucky
Bhattacharyya, Siddhartha — Univ. of Kentucky
Chandra, Vigyan (Vigs) — Eastern Kentucky Univ.
Jiang, Shengbing — General Motors Corp.
Kumar, Ratnesh — Iowa State Univ.

14:50-15:10
A Complex Measure of Non-Regular Languages for Discrete-Event Control, pp. 5120-5125
Chattopadhyay, Ishanu — Pennsylvania State Univ.
Ray, Asok — Pennsylvania State Univ.
Wang, Xi — Pennsylvania State Univ.

15:10-15:30
Robot Behavioral Selection Using a Discrete-Event Language Measure, pp. 5126-5131
Wang, Xi — Penn State Univ.
Fu, Jinbo — The Pennsylvania State Univ.
Lee, Peter — Penn State
Ray, Asok — Pennsylvania State Univ.

FrM18 Beacon Comp B

Iterative Learning Control (Regular Session)

Chair: Chiu, George T.-C. — Purdue Univ.
Co-Chair: Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign

13:30-13:50
A Class of Non-Contractive, Trial-Dependent Update Rules for Iterative Learning Control, pp. 5132-5137
Verwoerd, Mark — Univ. of Twente
Meinsma, Gjerrit — Univ. of Twente
Vries, T.j.a De — Univ. of Twente

13:50-14:10
Multi-Channel Design for Iterative Learning Control, pp. 5138-5143
Ye, Yongqiang — Nanyang Tech. Univ.
Wang, Danwei — Nanyang Tech. Univ.

14:10-14:30
Control of a Microscale Deposition Robot Using a New Adaptive Time-Frequency Filtered Iterative Learning Control, pp. 5144-5149
Bristow, Douglas A. — Univ. of Illinois at Urbana-Champaign
Alleyne, Andrew G. — Univ. of Illinois at Urbana-Champaign
Zheng, Danian — GE Global Res. Center

14:30-14:50
Reducing Residual Vibrations through Iterative Learning Control, with Application to a Wafer Stage. (I), pp. 5150-5155
van Oosten, Casper — Delft Univ. of Tech.
Bosgra, Okko H. — Delft Univ. of Tech.
Dijkstra, Branko — Mapper Lithography Delft

14:50-15:10
On the Parameterization of All Admissable Pairs in a Class of CCF-ILC Iterations, pp. 5156-5157
Verwoerd, Mark — Univ. of Twente
Meinsma, Gjerrit — Univ. of Twente
Vries, T.j.a De — Univ. of Twente

15:10-15:30
Experimental Study of a High Performance Motion Control System, pp. 5158-5163
Wen, John T. — Rensselaer Pol. Inst.
Potsaid, Benjamin — Rensselaer Pol. Inst.

FrM19 Beacon Comp H

Switched Systems III (Regular Session)

Chair: Campbell, Mark E. — Cornell Univ.
Co-Chair: Rodrigues, Luis — Concordia Univ.

13:30-13:50
Piecewise-Affine State Feedback Using Convex Optimization, pp. 5164-5169
Rodrigues, Luis — Concordia Univ.
Boyd, Stephen P — Stanford Univ.

13:50-14:10
Control of Piece-Wise Linear Systems with Piece-Wise Linear Controls, pp. 5170-5175
Medanic, Juraj V. — Univ. of Illinois at Urbana-Champaign
Pokorny, Joseph Wenceslaus III — Graduate Student

14:10-14:30
An L_2-Gain Analysis of Piecewise Affine Systems by Piecewise Quadratic Storage Functions, pp. 5176-5181
Morinaga, Eiji — Osaka Univ.
Hirata, Kenji — Osaka Univ.

14:30-14:50
Canonical Forms of Switched Linear Control Systems, pp. 5182-5187
Sun, Zhendong — National Univ. of Ireland, Maynooth

14:50-15:10
Bounded Model Switching in Uncertain Hybrid Systems, pp. 5188-5194
Otanez, Paul — Cornell Univ.
Campbell, Mark E. — Cornell Univ.

15:10-15:30
The Maximal Robust Controlled Invariant Set of Uncertain Switched Systems, pp. 5195-5196
Shang, Ying — Univ. of Notre Dame

FrP01 Commonwealth

Operational Amplifier Compensation (Tutorial Session)

Chair: Lundberg, Kent — MIT
Co-Chair: D'Aquino, Stefano — Analog Devices, Inc.
Organizer: Lundberg, Kent — MIT

16:00-17:00
Internal and External Op-Amp Compensation: A Control-Centric Tutorial (I), pp. 5197-5211
Lundberg, Kent — MIT

17:00-17:15
*A Rail-To-Rail, Input-Output Operational Amplifier (I)**
D'Aquino, Stefano — Analog Devices, Inc.

17:15-17:30
*Compensating a Three-Stage Op Amp with Class AB Output (I)**
Lokere, Kristiaan — Linear Tech. Corp.

17:30-17:45
*Compensation of a Source Follower LDO (I)**
Barrett, Jr., Raymond L. — Maxim Integrated Products

17:45-18:00
*A Feedback Approach to Nested Miller Compensation (I)**
Denison, Tim — Analog Devices Inc.
Lundberg, Kent — MIT

FrP02 Independence Ballroom East

Robust Control Applications (Regular Session)

Chair: Hsieh, Chien-Shu — Ta Hwa Inst. of Tech.
Co-Chair: Beck, Carolyn L. — Univ. of Illinois at Urbana-Champaign

16:00-16:20
Variable Structure Robust Fin Control for Ship Roll Stabilization with Actuator System, pp. 5212-5217
Yang, Yansheng — Professor
Jiang, Bo — Professor

16:20-16:40
Robust H_2 Control for Two-Degree of Freedom Control Systems, pp. 5218-5219
Kunimatsu, Sadaaki — Osaka Univ.
Fujii, Takao — Osaka Univ.

16:40-17:00
A Feasible Two-Stage LQ Reliable Control Via Partial Actuator Failures Estimation, pp. 5220-5225
Hsieh, Chien-Shu — Ta Hwa Inst. of Tech.

17:00-17:20
Gradient-Like Behavior Analysis and Synthesis of Uncertain Pendulum-Like Systems, pp. 5226-5231
Yang, Ying — Peking Univ.
Huang, Lin — Peking Univ.

17:20-17:40
Robust Vibration Suppression Control Profile Generation Based on Time-Frequency Uncertainty, pp. 5232-5237
ZHOU, LI — Oklahoma State Univ.
Misawa, Eduardo — Oklahoma State Univ.

17:40-18:00
Modelling and Distributed Control of Mobile Offshore Bases, pp. 5238-5243
Sharma, Puneet — Univ. of Illinois at Urbana-Champaign
Beck, Carolyn L. — Univ. of Illinois at Urbana-Champaign

FrP03 Hampton A

Control of Robotic Manipulators (Regular Session)

Chair: Book, Wayne J. — Georgia Inst. of Tech.
Co-Chair: Hogan, Neville — Massachusetts Inst. of Tech.

16:00-16:20
On Position Tracking in Bilateral Teleoperation, pp. 5244-5249
Chopra, Nikhil — Univ. of Illinois at Urbana-Champaign
Spong, Mark W. — Univ. of Illinois at Urbana-Champaign
Ortega, Romeo — LSS-SUPELEC
Barabanov, N.E. — St. Petersburg Elect. Eng. Univ.

16:20-16:40
Robust Observer Backstepping Neural Network Control of Flexible-Joint Manipulator, pp. 5250-5255
Chatlatanagulchai, Withit — Purdue Univ.
Nho, Hyuk — Purdue Univ.
Meckl, Peter H. — Purdue Univ.

16:40-17:00
Adaptive Control of a Flexible-Link Mechanism Using an Energy-Based Approach, pp. 5256-5261
Trevisani, Alberto — Univ. di Padova
Valcher, Maria Elena — Univ. Di Padova

17:00-17:20
Stability and Robustness of a Class of Nonlinear Controllers for Robot Manipulators, pp. 5262-5267
Ravichandran, Thambirajah — Univ. of Waterloo
Wang, David — Univ. of Waterloo
Heppler, Glenn R. — Univ. of Waterloo

17:20-17:40
Task-Space Adaptive Setpoint Control for Robots with Uncertain Kinematics and Actuator Model, pp. 5268-5273
Liu, Chao — Nanyang Tech. Univ.
Cheah, C.C. — Nanyang Tech. Univ.

17:40-18:00
Adaptive Fuzzy Sliding Control for a Three-Link Passive Robotic Manipulator, pp. 5274-5279
Elangovan, Subashini — Northern Illinois Univ.
Woo, Peng-Yung — Northern Illinois Univ.

FrP04 Hampton A

Anti-Wind up (Regular Session)

Chair: Zaccarian, Luca — Univ. di Roma, Tor Vergata
Co-Chair: Krstic, Miroslav — Univ. of California at San Diego

16:00-16:20
L_2 Anti-Windup for Linear Dead-Time Systems, pp. 5280-5285
Nesic, Dragan — Univ. of Melbourne
Teel, Andrew R. — Univ. of California at Santa Barbara
Zaccarian, Luca — Univ. di Roma, Tor Vergata

16:20-16:40
Toward the Implementation of an Anti-Windup Scheme for Vertical and Shape Control in the DIII-D Tokamak, pp. 5286-5291
Schuster, Eugenio — Univ. of California San Diego (UCSD)
Walker, Michael — General Atomics
Krstic, Miroslav — Univ. of California San Diego (UCSD)
Humphreys, David — General Atomics

16:40-17:00
Accounting for Uncertainty in Anti-Windup Synthesis, pp. 5292-5297
Turner, Matthew C. — Univ. of Leicester
Herrmann, Guido — Univ. of Leicester
Postlethwaite, Ian — Univ. of Leicester

17:00-17:20
Anti-Windup Design with Guaranteed Regions of Stability for Discrete-Time Linear Systems, pp. 5298-5303
Gomes Da Silva Jr., Joao Manoel — Univ. Federal do Rio Grande do Sul (UFRGS)
Tarbouriech, Sophie — LAAS-CNRS

17:20-17:40
Systematic Configuration Procedure of LMI-Based Linear Anti-Windup Synthesis, pp. 5304-5308
Dai, Dan — Shanghai Jiao Tong Univ.
Wang, Jingcheng — Shanghai JiaoTong Univ.

17:40-18:00
Design of Anti-Windup-Extensions for Digital Control Loops, pp. 5309-5314
Lambeck, Steven — Tech. Univ. Ilmenau
Sawodny, Oliver — Tech. Univ. Ilmenau

FrP05 Exeter

Multi-Vehicle Control and Experiments (Invited Session)

Chair: How, Jonathan P. — Massachusetts Inst. of Tech.
Co-Chair: Banda, Siva S. — Air Force Res. Lab.
Organizer: How, Jonathan P. — Massachusetts Inst. of Tech.
Organizer: Banda, Siva S. — Air Force Res. Lab.

16:00-16:20
Coordination and Control Experiments on a Multi-Vehicle Testbed (I), pp. 5315-5320
King, Ellis — Massachusetts Inst. of Tech.
Kuwata, Yoshi — Massachusetts Inst. of Tech.
Alighanbari, Mehdi — Massachusetts Inst. of Tech.
Bertuccelli, Luca — Massachusetts Inst. of Tech.
How, Jonathan P. — Massachusetts Inst. of Tech.

16:20-16:40
MVWT-II: The Second Generation Caltech Multi-Vehicle Wireless Testbed (I), pp. 5321-5326
Jin, Zhipu — California Inst. of Tech.
Waydo, Stephen — California Inst. of Tech.
Wildanger, Elisabeth — Calfornia Inst. of Tech.
Lammers, Michael — Calfornia Inst. of Tech.
Scholze, Hans — California Inst. of Tech.
Foley, Peter — California Inst. of Tech.
Held, David — MIT
Murray, Richard M. — California Inst. of Tech.

16:40-17:00
Unmanned Air Vehicle Testbed for Cooperative Control Experiments (I), pp. 5327-5331
McLain, Timothy W. — Brigham Young Univ.
Beard, Randal W. — Brigham Young Univ.

17:00-17:20
A Hovercraft Testbed for Decentralized and Cooperative Control (I), pp. 5332-5337
Vladimerou, Vladimeros — Univ. of Illinois at Urbana-champaign
Stubbs, Andrew — Univ. of Illinois at Urbana-champaign
Rubel, Joel — Univ. of Illinois at Urbana-champaign
Fulford, Adam — Univ. of Illinois at Urbana-champaign
Dullerud, Geir E. — Univ. of Illinois at Urbana-champaign

17:20-17:40
Experimental Demonstrations of Semi-Autonomous Control (I), pp. 5338-5343
Campbell, Mark E. — Cornell Univ.
D'Andrea, Raffaello — Cornell Univ.
Lee, Jin-woo — Cornell Univ.
Scholte, Eelco — Cornell Univ.

17:40-18:00
Unicycles in Cyclic Pursuit, pp. 5344-5349
Marshall, Joshua A. — Univ. of Toronto
Broucke, Mireille E. — Univ. of Toronto
Francis, Bruce A. — Univ. of Toronto

FrP06 Dalton

Sensor Fusion (Regular Session)

Chair: Nicholson, David — BAE Systems
Co-Chair: Trailovic, Lidija — Univ. of Colorado at Boulder

16:00-16:20
Multisensor Tracking of a Maneuvering Target in Clutter with Asynchronous Measurements Using IMMPDA Filtering and Parallel Detection Fusion, pp. 5350-5355
Jeong, Soonho — Auburn Univ.
Tugnait, Jitendra K. — Auburn Univ.

16:20-16:40
Distributed Multi-Sensor Multi-Target Tracking with Feedback, pp. 5356-5362
Khawsuk, Weerawat — Chulachomkloa Royal Military Acad. Thailand
Pao, Lucy Y. — Univ. of Colorado

16:40-17:00
Bearings-Only Measurements for INS Aiding: The Three-Dimensional Case, pp. 5363-5368
Pachter, Meir — AFIT/ENG
Porter, Alec — US Air Force

17:00-17:20
Distributed Bayesian Hypothesis Testing in Sensor Networks, pp. 5369-5374
Alanyali, Murat — Boston Univ.
Venkatesh, S.R. — Boston Univ.
Savas, onur — Boston Univ.
Aeron, Shuchin — Boston Univ.

17:20-17:40
Intelligent Multi-Sensor Fusion Techniques in Flexible Manufacturing Workcells, pp. 5375-5380
Kumar, Manish — Duke Univ.
Garg, Devendra P. — Duke Univ.

17:40-18:00
Sensor Management Based on Cross-Entropy in Interacting Multiple Model Kalman Filter, pp. 5381-5386
lu, di — Electrical and Electronic Engineering
Yao, Yu — Harbin Inst. of Tech.
He, Fenghua — Harbin Inst. of Tech.

FrP07 Gardner A

Filtering (Regular Session)

Chair: Gorinevsky, Dimitry — Honeywell Inc.
Co-Chair: Pasik-Duncan, Bozenna — Univ. of Kansas

16:00-16:20
Change Detection in Partially Observed Nonlinear Dynamic Systems with Unknown Change Parameters, pp. 5387-5393
Vaswani, Namrata — Ec. Dept & CFAR, Univ. of Maryland, Coll. Park

16:20-16:40
Monotonic Regression Filters for Trending Deterioration Faults, pp. 5394-5399
Gorinevsky, Dimitry — Honeywell Inc.

16:40-17:00
A Dead-Zone Based Filter for Systems with Unknown Parameters, pp. 5400-5405
Cao, Chengyu — M.I.T
Annaswamy, Anuradha — Massachusetts Inst. of Tech.

17:00-17:20
Robust L1 Filtering with Pole Constraint in a Disk Via Parameter-Dependent Lyapunov Functions, pp. 5406-5407
Li, Yanhui — Electrical and Information Engineering Coll. Daqing Petroleum In
Wang, Changhong — Dept. of Control Science and Engineering, Harbin Inst. of T
Gao, Huijun — Dept. of Control Science and Engineering, Harbin Inst. of T

17:20-17:40
A Simulation Based Algorithm for Optimal Quantization in Non-Linear/Non-Gaussian State-Space Models, pp. 5408-5413
Tadic, Vladislav — Univ. of Sheffield
Doucet, Arnaud — Univ. of Cambridge

17:40-18:00
Energy-To-Peak Filtering for Markov Jump Systems, pp. 5414-5415
Liu, Fei — Southern Yangtze Univ.

FrP08 Gardner B

Time-Delay Systems III (Regular Session)

Chair: Chen, Gan — Nanzan Univ.
Co-Chair: Olgac, Nejat — Univ. of Connecticut

16:00-16:20
Robust Output Feedback Stabilization for Uncertain Singular Time Delay Systems, pp. 5416-5421
Zhu, Shuqian — Shandong Univ.
Cheng, Zhaolin — Shandong Univ.
Feng, Jun'e — Shandong Univ.

16:20-16:40
A Novel Stability Study on Multiple Time Delayed Systems (MTDS) Using the Root Clustering Paradigm, pp. 5422-5427
Sipahi, Rifat — Univ. of Connecticut
Olgac, Nejat — Univ. of Connecticut

16:40-17:00
Robust Stability Limit of Time-Delay Systems, pp. 5428-5432
Banyasz, Csilla — Hungarian Acad. of Sciences
Keviczky, Laszlo — Hungarian Acad. of Sciences

17:00-17:20
A New Robust Delay-Dependent Stability Criterion for a Class of Uncertain Systems with Delay, pp. 5433-5437
Hao, Fei — Peking Univ.
Wang, Long — Peking Univ.
Chu, Tianguang — Peking Univ.

17:20-17:40
A Delay-Dependent Stability Criterion of Neutral Systems and Its Application to a Partial Element Equivalent Circuit Model, pp. 5438-5442
Yue, Dong — Nanjing Normal Univ.
Han, Qing-Long — Central Queensland Univ.

17:40-18:00
Feedback Time Delay As a Stabilizing Tool in Trajectory Tracking, Analysis and Experiments, pp. 5443-5448
Olgac, Nejat — Univ. of Connecticut
Sipahi, Rifat — Univ. of Connecticut
Ergenc, Ali F. — Univ. of Connecticut

FrP09 Clarendon

Control of Flexible Structures (Regular Session)

Chair: Singhose, William E. — Georgia Inst. of Tech.
Co-Chair: Seto, Kazuto — Nihon Univ.

16:00-16:20
Flatness-Based Control of a Flexible Beam in a Gravitational Field, pp. 5449-5454
Lynch, A.F. — Univ. of Alberta
Wang, D. — Univ. of Alberta

16:20-16:40
Coupled Vibrations of a Varying Length Flexible Cable Transporter System with Arbitrary Axial Velocity, pp. 5455-5460
Zhang, Yuhong — Graduate Student
Agrawal, Sunil K. — Univ. of Delaware

16:40-17:00
Semi-Active Vibration Control Using Piezoelectric-Based Switched Stiffness, pp. 5461-5466
Ramaratnam, Arun — Clemson Univ.
Jalili, Nader — Clemson Univ.
Dawson, Darren M. — Clemson Univ.

17:00-17:20
Civil Structures Semi-Active Control with Limited Measurements, pp. 5467-5471
Jimenez, Rene — Univ. Nacional Autonoma De Mexico
Alvarez-Icaza, Luis — Univ. Nacional Autonoma De Mexico

17:20-17:40
Motion and Multimode Vibration Control of a Flexible Transport System, pp. 5472-5477
Seto, Kazuto — Nihon Univ.
Takemoto, Keisuke — Nihon Univ.

17:40-18:00
Studies on Structural Vibration Control with MR Dampers Using Uga, pp. 5478-5482
Li, Hong-Nan — Dalian Univ. of Tech.
Chang, Zhi-Guo — Tongji Univ.
Song, Gangbing — Univ. of Houston
Li, Dongsheng — Dalian Univ. of Tech.

FrP10 Berkeley

Process Modeling and Control (Regular Session)

Chair: Jörgl, H. Peter — Vienna Univ. of Tech.
Co-Chair: Ito, Hiroshi — Kyushu Inst. of Tech.

16:00-16:20
Modeling and Identification of Ph Processes, pp. 5483-5488
Rodriguez, Jose Luis — Univ. Nacional Experimental Del Tachira
Loparo, Kenneth — Case Western Res. Univ.

16:20-16:40
A Dissipative Approach to Control of Biological Wastewater Treatment Plants Based on Entire Nonlinear Process Models, pp. 5489-5495
Ito, Hiroshi — Kyushu Inst. of Tech.

16:40-17:00
Sensors and Actuators for Combustion Control, pp. 5496-5501
Wachsman, Adam — Massachusetts Inst. of Tech.
Park, Sungbae — Massachusetts Inst. of Tech.
Annaswamy, Anuradha — Massachusetts Inst. of Tech.
Ghoniem, Ahmed F. — Massachusetts Inst. of Tech.

17:00-17:20
Approximations of the NARMA Model of Non-Affine Plants, pp. 5502-5507
Adetona, Olawale — Tennessee State Univ.
Sathananthan, Sivapragasam — Tennessee State Univ.
Keel, Lee H. — Tennessee State Univ.

17:20-17:40
On Structural Properties of Helbing's Gas-Kinetic Traffic Flow Model, pp. 5508-5513
Necoara, Ion — Delft Univ. of Tech.
De Schutter, Bart — Delft Univ. of Tech.
Hellendoorn, Hans — Delft Univ. of Tech.

17:40-18:00
A Genetic Algorithm Approach for Model Reference Adaptive Control of Ionic Polymer Metal Composites, pp. 5514-5519
Lavu, Brijesh Chowdary — Idaho State Univ.
Schoen, Marco — Idaho State Univ.
Mahajan, Ajay — Southern Illinois Univ. at Carbondale

FrP11 Fairfax A

Modeling and Control of Interconnected Systems (Regular Session)

Chair: Giarre, Laura — Univ. Di Palermo
Co-Chair: Lu, Xiao-yun — Univ. of California Berkeley

16:00-16:20
Eulerian Network Model of Air Traffic Flow in Congested Areas, pp. 5520-5526
Bayen, Alexandre M. — DGA, France
Raffard, Robin L. — Stanford Univ.
Tomlin, Claire J. — Stanford Univ.

16:20-16:40
Neuro-Dynamic Programming for Cooperative Inventory Control, pp. 5527-5532
Bauso, Dario — Univ. di Palermo
Giarre, Laura — Univ. di Palermo
Pesenti, Raffaele — Univ. di Palermo

16:40-17:00
Integration of Dynamic Route Guidance and Freeway Ramp Metering Using Model Predictive Control, pp. 5533-5538
Karimi, Abdes — Delft Univ. of Tech.
Hegyi, Andreas — Delft Univ. of Tech.
De Schutter, Bart — Delft Univ. of Tech.
Hellendoorn, Hans — Delft Univ. of Tech.
Middelham, Frans — Ministry of Transport, Public Works and Water Management

17:00-17:20
Adjoint-Based Constrained Control of Eulerian Transportation Networks: Application to Air Traffic Control, pp. 5539-5545
Bayen, Alexandre M. — DGA, France
Raffard, Robin L. — Stanford Univ.
Tomlin, Claire J. — Stanford Univ.

17:20-17:40
Object Modelling of Interconnected Systems in a Behavioral Framework, pp. 5546-5551
Bastogne, Thierry — CRAN CNRS UMR 7039

17:40-18:00
A New Hybrid Optimization Algorithm for the Job-Shop Scheduling Problem, pp. 5552-5557
Xia, Weijun — Shanghai Jiaotong Univ.
Wu, Zhiming — Shanghai Jiaotong Univ.

FrP12 Fairfax B

Cooperative Control of UAVs (Regular Session)

Chair: Eren, Tolga — Columbia Univ.
Co-Chair: Woolsey, Craig — Virginia Tech.

16:00-16:20
Decentralized Cooperative Search by Networked UAVs in an Uncertain Environment, pp. 5558-5563
Yang, Yanli — Univ. of Cincinnati
Minai, Ali — Univ. of Cincinnati
Polycarpou, Marios M. — Univ. of Cincinnati

16:20-16:40
Multiple Agent Search of an Unknown Environment Using Game Theoretical Models, pp. 5564-5569
Baliyarasimhuni, Sujit Pedda — Indian Inst. of Science
Ghose, Debasish — Indian Inst. of Science

16:40-17:00
Mobile Target Tracking by Networked Uninhabited Autonomous Vehicles Via Hospitability Maps, pp. 5570-5575
Kanchanavally, Shreecharan — Univ. of Dayton
Ordonez, Raul — Univ. of Dayton
Layne, Jeffery — Wright Patterson Airforce Base

17:00-17:20
Receding Horizon Path Planning with Implicit Safety Guarantees, pp. 5576-5581
Schouwenaars, Tom — Massachusetts Inst. of Tech.
How, Jonathan P. — Massachusetts Inst. of Tech.
Feron, Eric — Massachusetts Inst. of Tech.

17:20-17:40
A Framework for Lyapunov Certificates for Multi-Vehicle Rendezvous Problems, pp. 5582-5587
Tiwari, Abhishek — California Inst. of Tech.
Fung, Jimmy — California Inst. of Tech.
Carson, John M. III — California Inst. of Tech.
Bhattacharya, Raktim — California Inst. of Tech.
Murray, Richard M. — California Inst. of Tech.

17:40-18:00
Target Tracking Using Artificial Potentials and Sliding Mode Control, pp. 5588-5593
Gazi, Veysel — Atilim Univ.
Ordonez, Raul — Univ. of Dayton

FrP13 Beacon Comp D

Advances in Software Tools for Control System Design (Invited Session)

Chair: Gahinet, Pascal M. — The MathWorks, Inc.
Co-Chair: El-Farra, Nael H. — Univ. of California Los Angeles
Organizer: Gahinet, Pascal M. — The MathWorks, Inc.

16:00-16:20
Integrated Frequency-Time Domain Tools for System Identification (I), pp. 5594-5599
Ljung, Lennart — Linkoping Univ.

16:20-16:40
Software for Modeling and Analysis of Linear Systems with Delays (I), pp. 5600-5605
Gahinet, Pascal M. — The MathWorks, Inc.
Shampine, Lawrence F. — Southern Methodist Univ.

16:40-17:00
New Developments in Sum of Squares Optimization and SOSTOOLS (I), pp. 5606-5611
Prajna, Stephen — California Inst. of Tech.
Papachristodoulou, Antonis — California Inst. of Tech.
Seiler, Peter — Univ. of Illinois at Urbana-Champaign
Parrilo, Pablo A. — Swiss Federal Inst. of Tech.

17:00-17:20
Next Generation of Tools for Robust Control (I), pp. 5612-5615
Balas, Gary J. — Univ. of Minnesota
Packard, Andrew K. — Univ. of California at Berkeley
Safonov, Michael G. — Univ. of Southern California
Chiang, Richard Y. — Boeing Satellite Systems

17:20-17:40
Mu-Tools for the Clearance of Flight Control Laws (I), pp. 5616-5621
Bates, Declan G. — Univ. of Leicester
Mannchen, Thomas — Univ. of Stuttgart
Kureemun, Ridwan — Univ. of Leicester
Postlethwaite, Ian — Univ. of Leicester

17:40-18:00
Model Predictive Control -- New Tools for Design and Evaluation (I), pp. 5622-5627
Bemporad, Alberto — Univ. of Siena
Ricker, N. Lawrence — Univ. of Washington
Owen, James Gareth — MathWorks Inc.

FrP14 Beacon Comp E

Computational Methods (Regular Session)

Chair: Mukaidani, Hiroaki — Hiroshima Univ.
Co-Chair: Chen, YangQuan — Utah State Univ.

16:00-16:20
Topological Search in Automated Mechatronic System Synthesis Using Bond Graphs and Genetic Programming, pp. 5628-5634
Hu, Jianjun — Michigan State Univ.
Goodman, Erik — Michigan State Univ.
Rosenberg, Ronald — Michigan State Univ.

16:20-16:40
On Iterative Solutions of a Class of Matrix Equations in Systems and Control, pp. 5635-5640
Ding, Feng — Univ. of Alberta
Chen, Tongwen — Univ. of Alberta

16:40-17:00
Numerical Computation of Nash Strategy for Large-Scale Systems, pp. 5641-5646
Mukaidani, Hiroaki — Hiroshima Univ.

17:00-17:20
A Numerical Integrator for Simulation of Unstructured Implicit Models, pp. 5647-5652
Campbell, Stephen L — North Carolina State Univ.
Selva Soto, Monica — Humboldt Univ. of Berlin
Arevalo, Carmen — Lund Inst. of Tech.

17:20-17:40
A Hybrid Symbolic-Numerical Simulation Method for Some Typical Boundary Control Problems, pp. 5653-5658
Liang, Jinsong — Utah State Univ.
Chen, YangQuan — Utah State Univ.
Guo, Bao-Zhu — Acad. of Mathematics and System Sciences,

17:40-18:00
On Computation of Optimal Controllers Subject to Quadratically Invariant Sparsity Constraints, pp. 5659-5664
Rotkowitz, Michael — Stanford Univ.
Lall, Sanjay — Stanford Univ.

FrP15 Beacon Comp F

Fault Detection/Accomodation III (Regular Session)

Chair: Demetriou, Michael A. Worcester Pol. Inst.
Co-Chair: Judd, Robert P. Ohio Univ.

16:00-16:20
A Methodology for Detecting Routing Events in Discrete Flow Networks, pp. 5665-5670
Garcia, Humberto E. Argonne National Lab.
Yoo, Tae-sic Argonne National Lab.

16:20-16:40
Observer-Based Fault Diagnosis for a Class of Nonlinear Systems, pp. 5671-5675
Jiang, Bin Univ. of Louisiana at lafayette
Chowdhury, Fahmida N. Univ. of Louisiana at Lafayette

16:40-17:00
On the Well Posedness of Singularly Perturbed Fault Detection Filters, pp. 5676-5677
Oloomi, Hossein M. Purdue Univ. at Fort Wayne
Saif, Mehrdad Simon Fraser Univ.
Shafai, Bahram Northeastern Univ.

17:00-17:20
Data Reconciliation : A Robust Approach Using Contaminated Distribution, pp. 5678-5679
Ragot, Jose CRAN-INPL-CNRS, UMR 7039
Chadli, Mohammed CRAN-INPL-CNRS, UMR 7039
Maquin, Didier CRAN-INPL-CNRS, UMR 7039

17:20-17:40
Fault Diagnosis in Industrial Processes Using Principal Component Analysis and Hidden Markov Model, pp. 5680-5685
Zhou, Shaoyuan zhejiang Univ.
Zhang, Jianming Zhejiang Univ.
Wang, Shu Qing Zhejiang Univ.

17:40-18:00
The Fault Detection Problem in Nonlinear Systems, pp. 5686-5691
Martinez-Guerra, Rafael CINVESTAV-IPN
Garrido, Rubén Cinvestav-IPN
Osorio-Miron, Anselmo Cinvestav-IPN

FrP16 Beacon Comp A

Control of Fluid and Acoustic Systems (Regular Session)

Chair: Tadmor, Gilead — Northeastern Univ.
Co-Chair: Mehta, Prashant G. — United Tech. Res. Center

16:00-16:20
Distributed Control-Oriented Modeling of Thermoacoustic Dynamics in a Duct, pp. 5692-5697
Mehta, Prashant G. — United Tech. Res. Center
Soteriou, Marios — United Tech. Res. Center
Banaszuk, Andrzej — United Tech. Res. Center

16:20-16:40
Active Vibration Suppression in a Suspended Fabry-Perot Cavity, pp. 5698-5703
Canuto, Enrico S. — Pol. di Torino
Rolino, Andrea — Pol. di Torino

16:40-17:00
Approximate Model Predictive Control for Gas Turbine Engines, pp. 5704-5709
Rees, David — Univ. of Glamorgan
Mu, Junxia — Univ. of Glamorgan

17:00-17:20
Optimal Discrete Event Supervisory Control of Aircraft Gas Turbine Engines, pp. 5710-5715
Fu, Jinbo — The Pennsylvania State Univ.
Yasar, Murat — Penn State
Ray, Asok — Pennsylvania State Univ.

17:20-17:40
A Master-Slave Approach to Aircraft Engine Bleed Flow Sharing Control, pp. 5716-5721
Liu, Guangjun — Ryerson Univ.
Bao, Guozhong — Ryerson Univ.
Lam, Chun Ho — ES&S,Honeywell
Jiang, Jin — Univ. of Western Ontario

17:40-18:00
Actuation Models and Dissipative Control in Empirical Galerkin Models of Fluid Flows, pp. 5722-5727
Noack, Bernd R — Tech. Univ. Berlin
Tadmor, Gilead — Northeastern Univ.
Morzynski, Marek — Poznan Univ. of Tech.

FrP17 Beacon Comp G

Scheduling and Discrete Event Systems (Regular Session)

Chair: Chen, Chun-Hung — George Mason Univ.
Co-Chair: Braatz, Richard D. — Univ. of Illinois at Urbana-Champaign

16:00-16:20
Modelling and Control of Railway Networks, pp. 5728-5733
van den Boom, Ton J. J. — Delft Univ. of Tech.
De Schutter, Bart — Delft Univ. of Tech.

16:20-16:40
Perturbation Analysis of Stochastic Flow Systems with Multiplicative Feedback, pp. 5734-5739
Yu, Haining — Boston Univ.
Cassandras, Christos G. — Boston Univ.

16:40-17:00
Systemic Solutions to Deadlock in FMS, pp. 5740-5745
Gang, Xu — Automation department

17:00-17:20
Deadlock-Free Scheduling Method Using Genetic Algorithm and Timed S3PR Nets, pp. 5746-5751
Huang, Zhonghua — Shanghai Jiaotong Univ.
Wu, Zhiming — Shanghai Jiaotong Univ.

17:20-17:40
Minimizing Weighted Earliness and Tardiness Penalties about a Common Due Date on Single Machine with Exponential Processing Times, pp. 5752-5753
Jia, Chunfu — Nankai Univ.

17:40-18:00
A Case Study for Optimal Dynamic Simulation Allocation in Ordinal Optimization, pp. 5754-5759
Chen, Chun-Hung — George Mason Univ.
He, Donghai — George Mason Univ.
Fu, Michael C. — Univ. of Maryland

FrP18 Beacon Comp B

Learning Control Applications (Regular Session)

Chair: Rosenstein, Michael — Univ. of Massachusetts
Co-Chair: Balas, Mark — Univ. of Colorado

16:00-16:20
Actuator Hysteresis Identification and Compensation Using an Adaptive Search Space Based Genetic Algorithm, pp. 5760-5765
Chan, Che-Hang — Ryerson Univ.
Liu, Guangjun — Ryerson Univ.

16:20-16:40
Real-Time Vibration Control of an Industrial Manipulator Mounted on a Compliant Base, pp. 5766-5771
Bassan, Harmanpreet — PhD Student
Talebi, H.A. — Amirkabir Univ. of Tech.
Patel, Rajni — Univ. of Western Ontario
Moallem, Mehrdad — Univ. of Western Ontario

16:40-17:00
Intelligent Stabilization Control to an Arbitrary Equilibrium Point of Double Pendulum, pp. 5772-5777
Takahashi, Masaki — Univ. of Keio
Narukawa, Terumasa — Univ. of Keio
Yoshida, Kazuo — Keio Univ.

17:00-17:20
AGV Steering Controller Using NN Identifier and Cell Mediated Immune Algorithm, pp. 5778-5783
Lee, Young Jin — Korea Aviation Pol. Coll.
Suh, Jin Ho — Dong-A Univ.
Lee, Jin-Woo — Dong-A Univ.
Lee, Kwon Soon — Dong-A Univ.

17:20-17:40
Automatic Core Design Using Reinforcement Learning, pp. 5784-5789
Kobayashi, Yoko — Tepco Systems Corp.
Aiyoshi, Eitaro — Keio Univ.

17:40-18:00
Intelligent Automatic Landing System Using Fuzzy Neural Networks and Genetic Algorithm, pp. 5790-5795
Juang, Jih-Gau — National Taiwan Ocean Univ.
Chin, Kuo-Chih — National Taiwan Ocean Univ.
Chio, Jern-Zuin — National Taiwan Ocean Univ.

FrP19 Beacon Comp H

Switched Systems IV (Regular Session)

Chair: Iannelli, Luigi — Univ. of Napoli Federico II
Co-Chair: Saif, Mehrdad — Simon Fraser Univ.

16:00-16:20
Observer Design for Linear Switched Control Systems, pp. 5796-5801
Chen, Wei-tian — Simon Fraser Univ.
Saif, Mehrdad — Simon Fraser Univ.

16:20-16:40
Unknown Input Observers for Switched Linear Discrete Time Systems, pp. 5802-5805
Millerioux, Gilles — CRAN CNRS UMR 7039
Daafouz, Jamal — CRAN CNRS UMR 7039

16:40-17:00
Asymptotic Feedback Controllability of Switched Control Systems to the Origin, pp. 5806-5811
Dayawansa, Wijesuriya P. — Texas Tech. Univ.
Perera, Pantaleon — Univ. of Texas, Pan American

17:00-17:20
Dither Shape in the Averaging of Switched Systems, pp. 5812-5817
Iannelli, Luigi — Univ. of Napoli Federico II
Johansson, Karl Henrik — Royal Inst. of Tech.
Jonsson, Ulf T. — Royal Inst. of Tech.
Vasca, Francesco — Univ. of Sannio

17:20-17:40
Stability and Control Design of Switched Systems Subject to Actuation Saturation, pp. 5818-5823
Benzaouia, Abdellah — Faculty of Science Semlalia, Univ. Cadi Ayyad
saydy, lahcen — Ec. Pol. of Montreal
akhrif, Ouassima — École de Tech. Supérieure (Univ. of Quebec)

17:40-18:00
Pathwise Observability through Arithmetic Progressions and Non-Pathological Sampling, pp. 5824-5828
Babaali, Mohamed — Georgia Inst. of Tech.
Egerstedt, Magnus — Georgia Inst. of Tech.