

CONTROL SYSTEMS SOCIETY

SEPTEMBER
2014



Publications Content Digest

TABLE OF CONTENTS

Publications Activities

Vice-President

FRANCESCO BULLO University of California, Santa Barbara

<http://www.ieeecss.org/publications/css-publications>

Journal Editors

IEEE Transactions on Automatic Control

PANOS J. ANTSAKLIS University of Notre Dame

<http://www.ieeecss.org/publications/tac>

IEEE Transactions on Control Systems Technology

THOMAS PARISINI Imperial College, UK

<http://www.ieeecss.org/publications/tcst>

IEEE Transactions on Control of Network Systems

IOANNIS PASchalidis Boston University

<http://www.ieeecss.org/publications/transactions-control-network-systems>

MAGNUS EGERSTEDT Deputy Editor-in-Chief

IEEE Control Systems Magazine

RICHARD D. BRAATZ Massachusetts Institute of Technology

JONATHAN HOW Deputy Editor-in-Chief

<http://www.ieeecss.org/publications/csm>

Electronics Editor

E-letter on Systems, Control and Signal Processing

MARIA PRANDINI Politecnico di Milano, Italy

<http://www.ieeecss.org/publications/e-letter/e-letter>

*Submission and editorial instructions can be found on each publication's homepage

For subscription to the monthly E-Letter, please visit:

<http://www.ieeecss.org/newsletter/subscriptions>

IEEE TRANSACTIONS ON AUTOMATIC CONTROL

A PUBLICATION OF THE IEEE CONTROL SYSTEMS SOCIETY



SEPTEMBER 2014

VOLUME 59

NUMBER 9

IETAA9

(ISSN 0018-9286)

Table of Contents

Full Text: [PDF](#) [139 KB]

[IEEE Transactions on Automatic Control](#)

[Publication Information](#)

Full Text: [PDF](#) [135 KB]

[Scanning the Issue](#)

Full Text: [PDF](#) [113 KB]

Papers

[Optimal Controller Synthesis for Decentralized Systems Over Graphs via Spectral Factorization](#)

J. Swigart and S. Lall

[Abstract](#) | Full Text: [PDF](#) [358 KB]

[Stabilizing a SISO LTI Plant With Gain and Delay Margins as Large as Desired](#)

D. L. Gaudette and D. E. Miller

[Abstract](#) | Full Text: [PDF](#) [887 KB]

[Control of Linear Switched Systems With Receding Horizon Modal Information](#)

R. Essick, J.-W. Lee, and G. E. Dullerud

[Abstract](#) | Full Text: [PDF](#) [625 KB]

[Extremum Problems With Total Variation Distance and Their Applications](#)

C. D. Charalambous, I. Tzortzis, S. Loyka, and T. Charalambous

[Abstract](#) | Full Text: [PDF](#) [1162 KB]

[Stabilization of Linear Systems Over Gaussian Networks](#)

A. A. Zaidi, T. J. Oechtering, S. Yuksel, and M. Skoglund

[Abstract](#) | Full Text: [PDF](#) [733 KB]

[Prediction-Based Stabilization of Linear Systems Subject to Input-Dependent Input Delay of Integral-Type](#)

D. Bresch-Pietri, J. Chauvin, and N. Petit
[Abstract](#) | Full Text: [PDF](#) [966 KB]

[Submodular Utility Maximization for Deadline Constrained Data Collection in Sensor Networks](#)

Z. Zheng and N. B. Shroff

[Abstract](#) | Full Text: [PDF](#) [585 KB]

[Structures and Transformations for Model Reduction of Linear Quantum Stochastic Systems](#)

H. I. Nurdin

[Abstract](#) | Full Text: [PDF](#) [546 KB]

[A Converse Lyapunov Theorem and Robustness for Asymptotic Stability in Probability](#)

A. R. Teel, J. P. Hespanha, and A. Subbaraman

[Abstract](#) | Full Text: [PDF](#) [434 KB]

[Network Risk Limiting Dispatch: Optimal Control and Price of Uncertainty](#)

B. Zhang, R. Rajagopal, and D. Tse

[Abstract](#) | Full Text: [PDF](#) [1030 KB]

Technical Notes and Correspondence

Design of Optimal Sparse Interconnection Graphs for Synchronization of Oscillator Networks

M. Fardad, F. Lin, and M. R. Jovanović

[Abstract](#) | Full Text: [PDF](#) [1101 KB]

Multi-Agent Consensus With Relative-State-Dependent Measurement Noises

T. Li, F. Wu, and J.-F. Zhang

[Abstract](#) | Full Text: [PDF](#) [171 KB]

Multirate Observers for Nonlinear Sampled-Data Systems Using Input-to-State Stability and Discrete-Time Approximation

H. Beikzadeh and H. J. Marquez

[Abstract](#) | Full Text: [PDF](#) [267 KB]

The Forest Consensus Theorem

P. Chebotarev and R. Agaev

[Abstract](#) | Full Text: [PDF](#) [249 KB]

Bounded Hybrid Connectivity Control of Networked Multiagent Systems

G. De La Torre, T. Yucelen, and E. Johnson

[Abstract](#) | Full Text: [PDF](#) [215 KB]

Minimized Tracking Error Randomness Control for Nonlinear Multivariate and Non-Gaussian Systems Using the Generalized Density Evolution Equation

M. Ren, J. Zhang, and H. Wang

[Abstract](#) | Full Text: [PDF](#) [448 KB]

Controllability of Discrete Time Bilinear Systems in Finite and Infinite Dimensional Spaces

D. Alami Louati and M. Ouzahra

[Abstract](#) | Full Text: [PDF](#) [166 KB]

Forward and Converse Lyapunov Theorems for Discrete Dynamical Systems

R. Jafari, A. Kable, and M. Hagan

[Abstract](#) | Full Text: [PDF](#) [235 KB]

The Observer Error Linearization Problem via Dynamic Compensation

C. Califano and C. H. Moog

[Abstract](#) | Full Text: [PDF](#) [193 KB]

On the Linear Separability of the Safe and Unsafe State Subsets of Single-Unit Resource Allocation System

S. Reveliotis

[Abstract](#) | Full Text: [PDF](#) [120 KB]

Optimal Stabilization Problem With Minimax Cost in a Critical Case

V. Grushkovskaya and A. Zuyev

[Abstract](#) | Full Text: [PDF](#) [156 KB]

Combining iISS and ISS With Respect to Small Inputs: The Strong iISS Property

A. Chaillet, D. Angeli, and H. Ito

[Abstract](#) | Full Text: [PDF](#) [224 KB]

Dynamical Behaviors of an Euler Discretized Sliding Mode Control Systems

S. Qu, X. Xia, and J. Zhang

[Abstract](#) | Full Text: [PDF](#) [449 KB]

Stabilizability Across a Gaussian Product

Channel: Necessary and Sufficient Conditions

U. Kumar, J. Liu, V. Gupta, and J. N. Laneman

[Abstract](#) | Full Text: [PDF](#) [233 KB]

Necessary and Sufficient Conditions for Pareto Optimality in Infinite Horizon Cooperative Differential Games

P. V. Reddy and J. C. Engwerda

[Abstract](#) | Full Text: [PDF](#) [175 KB]

Infinite-Horizon Continuous-Time NMPC via Time Transformation

L. Wurth and W. Marquardt

[Abstract](#) | Full Text: [PDF](#) [364 KB]

LMMSE Filtering in Feedback Systems With White Random Modes: Application to Tracking in Clutter

D. Sigalov, T. Michaeli, and Y. Oshman

[Abstract](#) | Full Text: [PDF](#) [222 KB]

Controlled Invariants and Trajectory Planning for Underactuated Mechanical Systems

A. S. Shiriaev, L. B. Freidovich, and M. W. Spong

[Abstract](#) | Full Text: [PDF](#) [343 KB]

Zero Forcing Sets and Controllability of Dynamical Systems Defined on Graphs

N. Monshizadeh, S. Zhang, and M. K. Camlibel

[Abstract](#) | Full Text: [PDF](#) [246 KB]

Formal Synthesis of Control Policies for Continuous Time Markov Processes From Time-Bounded Temporal Logic Specifications

A. Medina Ayala, S. B. Andersson, and C. Belta

[Abstract](#) | Full Text: [PDF](#) [270 KB]

Risk-Constrained Markov Decision Processes

V. Borkar and R. Jain

[Abstract](#) | Full Text: [PDF](#) [138 KB]

A Class of Position Controllers for Underactuated VTOL Vehicles

A. Roza and M. Maggiore

[Abstract](#) | Full Text: [PDF](#) [340 KB]

Optimal Robust Linear Quadratic Regulator for Systems Subject to Uncertainties

M. H. Terra, J. P. Cerri, and J. Y. Ishihara

[Abstract](#) | Full Text: [PDF](#) [663 KB]

Relationship Between Nash Equilibrium Strategies and H₂/H-infinity Control of Stochastic Markov Jump Systems With Multiplicative Noise

L. Sheng, W. Zhang, and M. Gao

[Abstract](#) | Full Text: [PDF](#) [240 KB]

Leader-Following Connectivity Preservation Rendezvous of Multiple Double Integrator Systems Based on Position Measurement Only

Y. Dong and J. Huang

[Abstract](#) | Full Text: [PDF](#) [382 KB]

Stabilization of Singular Markovian Jump Systems With Generally Uncertain Transition Rates

Y. Kao, J. Xie, C. Wang, and H. R. Karimi

[Abstract](#) | Full Text: [PDF](#) [325 KB]

Open Access

Full Text: [PDF](#) [1155 KB]

IEEE Xplore Digital Library

Full Text: [PDF](#) [1371 KB]

IEEE Control Systems Society Information

Full Text: [PDF](#) [164 KB]

IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY

A PUBLICATION OF THE IEEE CONTROL SYSTEMS SOCIETY



SEPTEMBER 2014

VOLUME 212

NUMBER 5

IETTE2

(ISSN 1063-6536)

Table of Contents

Full Text: [PDF](#) [131 KB]

IEEE Transactions on Control Systems Technology Publication Information

Full Text: [PDF](#) [138 KB]

Papers

Camera Network Coordination for Intruder Detection

F. Pasqualetti, F. Zanella, J. R. Peters, M. Spindler,
R. Carli, and F. Bullo

[Abstract](#) | Full Text: [PDF](#) [3379 KB]

Power Optimization and Control in Wind Energy Conversion Systems Using Extremum Seeking

A. Ghaffari, M. Krstić, and S. Seshagiri

[Abstract](#) | Full Text: [PDF](#) [2144 KB]

Identification of Linear Models for the Dynamics of a Hovering Quadrotor

M. Bergamasco and M. Lovera

[Abstract](#) | Full Text: [PDF](#) [4220 KB]

LPV Control With Decoupling Performance of 4WS Vehicles Under Velocity-Varying Motion

M. Li, Y. Jia, and J. Du

[Abstract](#) | Full Text: [PDF](#) [2376 KB]

Backstepping Control of the Toroidal Plasma

Current Profile in the DIII-D Tokamak

M. D. Boyer, J. Barton, E. Schuster, M. L.
Walker, T. C. Luce, J. R. Ferron, B. G. Penafior,
R. D. Johnson, and D. A. Humphreys

[Abstract](#) | Full Text: [PDF](#) [3745 KB]

Robust Weighted Gain-Scheduling H_∞ Vehicle Lateral Motion Control With Considerations of Steering System Backlash-Type Hysteresis

X. Huang, H. Zhang, G. Zhang, and J. Wang

[Abstract](#) | Full Text: [PDF](#) [2784 KB]

Nonlinear Adaptive Model Predictive Controller for a Flexible Manipulator: An Experimental Study

S. K. Pradhan and B. Subudhi

[Abstract](#) | Full Text: [PDF](#) [2620 KB]

Sliding Mode Control With Mixed Current and Delayed States for Offshore Steel Jacket Platforms

B-L. Zhang, Q-L. Han, X-M. Zhang, and X. Yu

[Abstract](#) | Full Text: [PDF](#) [2983 KB]

A Comparison of the Embedding Method With Multiparametric Programming, Mixed-Integer Programming, Gradient-Descent, and Hybrid Minimum Principle-Based Methods

R. T. Meyer, M. Žefran, and R. A. DeCarlo

[Abstract](#) | Full Text: [PDF](#) [2062 KB]

Optimal Measurement Allocation Algorithms for Parametric Model Identification of Power Systems

A. Chakrabortty and C. F. Martin

[Abstract](#) | Full Text: [PDF](#) [1948 KB]

A Model Predictive Control Approach to Microgrid Operation Optimization

A. Parisio, E. Rikos, and L. Glielmo

[Abstract](#) | Full Text: [PDF](#) [1990 KB]

High-Order Sliding Mode Block Control of Single-Phase Induction Motor

G. Rubio-Astorga, J. D. Sánchez-Torres, J. Cañedo, and A. G. Loukianov

[Abstract](#) | Full Text: [PDF](#) [1260 KB]

Brief Papers

A Gain-Scheduled LPV Control for Oxygen Stoichiometry Regulation in PEM Fuel Cell Systems

F. D. Bianchi, C. Kunusch, C. Ocampo-Martinez, and R. S. Sánchez-Peña

[Abstract](#) | Full Text: [PDF](#) [1163 KB]

Nonlinear Dynamic Model-Based State Estimators for Underwater Navigation of Remotely Operated Vehicles

J. C. Kinsey, Q. Yang, and J. C. Howland

[Abstract](#) | Full Text: [PDF](#) [3766 KB]

Lyapunov-Based Control of the Sway Dynamics for Elevator Ropes

M. Benosman

[Abstract](#) | Full Text: [PDF](#) [1723 KB]

Capturability Analysis of a 3-D Retro-PN Guidance Law for Higher Speed

Nonmaneuvering Targets

S. Ghosh, D. Ghose, and S. Raha

[Abstract](#) | Full Text: [PDF](#) [975 KB]

Multiobjective Optimization of an Observer-Based Controller: Theory and Experiments on an Underwater Grinding Robot

P. Hamelin, P. Bigras, J. Beaudry, P-L. Richard, and M. Blain

[Abstract](#) | Full Text: [PDF](#) [956 KB]

An Observer-Based Mode Switching Control Scheme for Improved Position Regulation in Servomotors

G. Cheng and J-G. Hu

[Abstract](#) | Full Text: [PDF](#) [1337 KB]

Active Diagnosability of Discrete Event Systems and Its Application to Battery Fault Diagnosis

Z. Chen, F. Lin, C. Wang, L. Y. Wang, and M. Xu

[Abstract](#) | Full Text: [PDF](#) [681 KB]

Resonant Controller Design for a Piezoelectric Tube Scanner: A Mixed Negative-Imaginary and Small-Gain Approach

S. K. Das, H. R. Pota, and I. R. Petersen

[Abstract](#) | Full Text: [PDF](#) [1290 KB]

Distributed Energy Consumption Control via Real-Time Pricing Feedback in Smart Grid

K. Ma, G. Hu, and C. J. Spanos

[Abstract](#) | Full Text: [PDF](#) [860 KB]

Mode-Independent H₂-Control of a DC Motor Modeled as a Markov Jump Linear System

R. C. L. F. Oliveira, A. N. Vargas, J. B. R. do Val, and P. L. D. Peres

[Abstract](#) | Full Text: [PDF](#) [492 KB]

Neural-Adaptive Control of Waste-to-Energy Steam Generators

S. M. Takaghaj, C. J. B. Macnab, D. Westwick, and I. Boiko

[Abstract](#) | Full Text: [PDF](#) [1143 KB]

3-D Path-Following Control for a Model-Scaled Autonomous Helicopter

B. Zhu and W. Huo

[Abstract](#) | Full Text: [PDF](#) [666 KB]

Comparison Between the CLOE Method and the DIDIM Method for Robots Identification

A. Janot, M. Gautier, A. Jubien, and P. O. Vandajan

[Abstract](#) | Full Text: [PDF](#) [1210 KB]

Optimal Control of a Network of Power Microgrids Using the Pontryagin's Minimum Principle

H. Dagdougui, A. Ouammi, and R. Sacile

[Abstract](#) | Full Text: [PDF](#) [908 KB]

Frequency Domain Performance Analysis of Lur'e Systems

A. Pogromsky and R. van den Berg

[Abstract](#) | Full Text: [PDF](#) [626 KB]

Optimal Design of a Colloidal Self-Assembly Process

Y. Xue, D. J. Beltran-Villegas, X. Tang, M. A. Bevan, and M. A. Grover

[Abstract](#) | Full Text: [PDF](#) [653 KB]

Sliding Mode Control-Based Autopilots for Leaderless Consensus of Unmanned Aerial Vehicles

S. Rao and D. Ghose

[Abstract](#) | Full Text: [PDF](#) [525 KB]

Brief Papers, cont.

Adaptive Force/Motion Control System Based on Recurrent Fuzzy Wavelet CMAC Neural Networks for Condenser Cleaning Crawler-Type Mobile Manipulator Robot

T. Mai and Y. Wang

[Abstract](#) | Full Text: [PDF](#) [1988 KB]

Practical Wind-Disturbance Rejection for Large Deep Space Observatory Antenna

D. Qiu, M. Sun, Z. Wang, Y. Wang, and Z. Chen

[Abstract](#) | Full Text: [PDF](#) [1082 KB]

Offtake Feedforward Compensation for Irrigation Channels With Distributed Control

Y. Li

[Abstract](#) | Full Text: [PDF](#) [1416 KB]

Tracking Control for Differential-Drive Mobile Robots With Diamond-Shaped Input Constraints

X. Chen, Y. Jia, and F. Matsuno

[Abstract](#) | Full Text: [PDF](#) [530 KB]

Torque Setpoint Tracking for Parallel Hybrid Electric Vehicles Using Dynamic Input Allocation

S. Cordiner, S. Galeani, F. Mecocci, V. Mulone, Zaccarian

[Abstract](#) | Full Text: [PDF](#) [1197 KB]

A Stabilizing Model Predictive Controller for Voltage Regulation of a DC/DC Boost Converter

S-K. Kim, C. R. Park, J-S. Kim, and Y. I. Lee

[Abstract](#) | Full Text: [PDF](#) [1495 KB]

Design of a Proportional Integral Control Using Operator Theory for Infinite Dimensional Hyperbolic Systems

V. D. S. Martins, Y. Wu, and M. Rodrigues

[Abstract](#) | Full Text: [PDF](#) [1308 KB]

Gain Scheduled Control of Linear Systems Subject to Actuator Saturation With Application to Spacecraft Rendezvous

B. Zhou, Q. Wang, Z. Lin, and G-R. Duan

[Abstract](#) | Full Text: [PDF](#) [731 KB]

Model-Free Predictive H_∞ Control for Grid-Connected Solar Power Generation Systems

J. Chen, F. Yang, and Q-L. Han

[Abstract](#) | Full Text: [PDF](#) [1751 KB]

A DVS-MHE Approach to Vehicle Side-Slip Angle Estimation

M. Canale, L. Fagiano, and C. Novara

[Abstract](#) | Full Text: [PDF](#) [369 KB]

On the Control of the Permanent Magnet Synchronous Motor: An Active Disturbance Rejection Control Approach

H. Sira-Ramírez, J. Linares-Flores, C. García-Rodríguez, and

M. A. Contreras-Ordaz

[Abstract](#) | Full Text: [PDF](#) [1553 KB]

Optical Parametric Oscillator Longitudinal Modes Suppression Based on Smith Predictor Control Scheme

A. Salehiomran, R. Modirnia, B. Boulet, and M. Rochette

[Abstract](#) | Full Text: [PDF](#) [2767 KB]

IEEE Transaction on Control Systems Technology Information for Authors

Full Text: [PDF](#) [143 KB]

Upcoming IEEE Conferences



IMPORTANT DATES

Workshop and Invited Session Proposals Due:

March 24, 2014 [CLOSED]

Technical Papers Due:

April 1, 2014 [CLOSED]

Notification of Acceptance:

July 1, 2014

Preliminary Program Ready:

July 15, 2014

Final Manuscripts Due/Early Registration Ends:

September 1, 2014 [CLOSED]

Conference Program Ready:

September 15, 2014

HOPE TO SEE YOU THERE!

2014 MULTI- CONFERENCE ON SYSTEMS AND CONTROL

OCTOBER 8-10, 2014

NICE/ANTIBES, FRANCE



MSC 2014 will be a three-day event, preceded by a full day of Tutorials and Workshops. The conference proceedings will be included in **IEEE Xplore** and indexed by **INSPEC** and **Ei-Compendex**.

WWW.MSC2014.ORG



53rd IEEE Conference on Decision and Control

December 15-17, 2014

Los Angeles, California, USA

CDC 2014 IMPORTANT DATES

March 10, 2014: Invited Session Proposals Due [CLOSED]

March 20, 2014: Initial Paper Submissions Due [CLOSED]

May 1, 2014: Workshop Proposals Due [CLOSED]

Mid-July 2014: Paper and Workshop Decision Notification

August 1, 2014: Registration Opens

September 20, 2014: Accepted Papers Due

The 53rd IEEE Conference on Decision and Control will be held Monday through Wednesday, December 15-17, 2014 at the [J.W. Marriott Hotel](#), Los Angeles, CA, USA. The conference will be preceded by technical workshops on Sunday, December 14, 2014.

The CDC is recognized as the premier scientific and engineering conference dedicated to the advancement of the theory and practice of systems and control. The CDC annually brings together an international community of researchers and practitioners in the field of automatic control to discuss new research results, perspectives on future developments, and innovative applications relevant to decision making, automatic control, and related areas.



ACC 2015

Important Dates

Papers Due:

September 26, 2014

Workshop Proposals Due:

October 17, 2014

Acceptance/Rejection Notice:

By January 31, 2015

Final Manuscript Submission:

March 15, 2015

2015 AMERICAN CONTROL CONFERENCE

JULY 1-3, 2015

CHICAGO, ILLINOIS, USA

Will be held Wednesday through Friday, July 1–3 in downtown Chicago, Illinois. The conference venue is the **Hilton Palmer House**, located in the heart of The Loop, just minutes away from Millennium Park, Grant Park, the Willis Tower, and Chicago's downtown theater district. Chicago is also home to museums and galleries of every variety along with world-class dining, shopping, and entertainment along the sparkling shores of Lake Michigan.

2015 IEEE Multi-Conference

On Systems and Control



September 21-23, 2015
Sydney, Australia

MSC 2015 Important Dates

March 24, 2015: Submission of workshop proposals and invited sessions

April 1, 2015: Technical paper submission

July 1, 2015: Notification of acceptance

July 15, 2015: Preliminary program ready

August 15, 2015: Final paper due and early registration ends

September 1, 2015: Conference program ready

The 2015 IEEE Multi-Conference on Systems and Control (MSC) will be held Monday through Wednesday, September 21 - 23, at the Novotel Manly Pacific Hotel, Manly Beach, Sydney. Manly is one of Sydney's iconic beaches and the Novotel is directly on the beach overlooking the Pacific Ocean. Manly features numerous cosmopolitan cafes and quality accommodation. Also, Manly is a short ferry ride across Sydney Harbour to Circular Quay in downtown Sydney. The city of Sydney has a wide-ranging cultural life, a dynamic food scene, iconic beaches and a vibrant cityscape of outstanding contemporary and colonial architecture.