CSS Publications Activities

**Vice-President**

THOMAS PARISINI *Imperial College London and University of Trieste*

http://ieeecss.org/publications

**Journal Editors**

IEEE Transactions on Automatic Control

ALESSANDRO ASTOLFI *Imperial College London and University of Rome “Tor Vergata”*

http://ieeecss.org/publication/transactions-automatic-control

IEEE Transactions on Control Systems Technology

ANDREA SERRANI *Ohio State University*

http://ieeecss.org/publication/transactions-control-systems-technology

IEEE Transactions on Control of Network Systems

IOANNIS PASCHALIDIS *Boston University*

JEFF SHAMMA Deputy Editor-in-Chief *King Abdullah University of Science and Technology*

http://ieeecss.org/publication/transactions-control-network-systems

IEEE Control Systems Letters

MARIA ELENA VALCHER *University of Padua*

http://ieeecss.org/publication/control-systems-letters

IEEE Control Systems Magazine

JONATHAN HOW *Massachusetts Institute of Technology*

http://ieeecss.org/publication/ieee-control-systems-magazine

**Electronics Editor**

E-letter on Systems, Control and Signal Processing

AHMAD TAH A *University of Texas at San Antonio*

http://ieeecss.org/publication/e-letter

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

For subscription to the monthly E-Letter, please send an empty email to eletter-css-join@lists.it.utsa.edu
REGULAR PAPERS

Consistent Variable Selection for a Nonparametric Nonlinear System by Inverse and Contour Regressions .......................... C. Cheng, E.-W. Bai, and Z. Peng 2653
Online Convex Optimization With Time-Varying Constraints and Bandit Feedback ........... X. Cao and K. J. R. Liu 2665
Finite-State Approximations to Discounted and Average Cost Constrained Markov Decision Processes ........ N. Saldi 2681
A New Characteristic of Switching Topology and Synchronization of Linear Multiagent Systems ................................................... X. Wang, J. Zhu, and J.-E. Feng 2697
An Adaptive Partial Sensitivity Updating Scheme for Fast Nonlinear Model Predictive Control ................................................................. Y. Chen, M. Bruschetta, D. Cuccato, and A. Beghi 2712
A Polynomial-Time Algorithm for Solving the Minimal Observability Problem in Conjunctive Boolean Networks ........................................ E. Weiss and M. Margaliot 2727
Fixed-Time $H$∞ Control for Port-Controlled Hamiltonian Systems ......................................................... X. Liu and X. Liao 2753
Persistent Flows in Deterministic Chains ................................................. W. Xia, G. Shi, Z. Meng, M. Cao, and K. H. Johansson 2766
Uniform Asymptotic Stability of Switched Nonlinear Time-Varying Systems and Detectability of Reduced Limiting Control Systems ......................................................... J. L. Mancilla-Aguilarr and R. A. García 2782
Parametric Identification Using Weighted Null-Space Fitting ................................................................. M. Galrinho, C. R. Rojas, and H. Hjalmarsson 2798
Online Maximum-Likelihood Estimation of the Parameters of Partially Observed Diffusion Processes ............................................. S. C. Surace and J.-P. Pfister 2814
Synchronization of Kuramoto Oscillators via Cutset Projections ......................... S. Jafarpour and F. Bullo 2830
Direct Parallel Computations of Second-Order Search Directions for Model Predictive Control ................................................................. I. Nielsen and D. Axehill 2845

(Contents Continued on Back Cover)
TECHNICAL NOTES

Dynamic Multiobjective Control for Continuous-Time Systems Using Reinforcement Learning ................................................. V. G. Lopez and F. L. Lewis 2869
Disturbance-Observer-Based Composite Hierarchical Antidisturbance Control for Singular Markovian Jump Systems . X. Yao, J. H. Park, L. Wu, and L. Guo 2875
Explicit Reference Governor for the Constrained Control of Linear Time-Delay Systems .......................................................... M. M. Nicotra, T. W. Nguyen, E. Garone, and I. V. Kolmanovsky 2883
Optimal Linear Quadratic Regulator of Switched Systems ........................................................................................................... G. Wu, J. Sun, and J. Chen 2898
Dual Sourcing Policy for a Continuous-Review Stochastic Inventory System ................................................................. P. Cao and D. Yao 2921
Observer-Based Stabilization of Systems With Quantized Inputs and Outputs ...... M. Wakaiki, T. Zamma, and K.-Z. Liu 2929
A Regularized and Smoothed Fischer–Burmeister Method for Quadratic Programming With Applications to Model Predictive Control ........................................................................................................... D. Liao-McPherson, M. Huang, and I. Kolmanovsky 2937
Designing Distributed Specified-Time Consensus Protocols for Linear Multiagent Systems Over Directed Graphs .... Y. Zhao, Y. Liu, G. Wen, W. Ren, and G. Chen 2945
Gaussian Process Latent Force Models for Learning and Stochastic Control of Physical Systems ...................................... S. Sürkü, M. A. Álvarez, and N. D. Lawrence 2953
Datation of Faults for Markovian Stochastic DESs ..................................................... R. Ammour, E. Leclercq, E. Sanlaville, and D. Lefebvre 2961
Minimax Robust Quickest Change Detection in Systems and Signals With Unknown Transients ........................................ T. L. Molloy and J. J. Ford 2976
Multiagent Newton–Raphson Optimization Over Lossy Networks ................................................................. N. Bof, R. Carli, G. Notarstefano, L. Schenato, and D. Varagnolo 2983
Sequential Predictors Under Time-Varying Feedback and Measurement Delays and Sampling .................................................. J. Weston and M. Malisoff 2991
Enforcement of Diagnosability in Labeled Petri Nets via Optimal Sensor Selection ............................................... N. Ran, A. Giua, and C. Seatzu 2997
A Novel Reduced-Order Protocol for Consensus Control of Linear Multiagent Systems . X. Li, Y. C. Soh, and L. Xie 3005
Necessary and Sufficient Condition for Controlled Distinguishability of Continuous-Time Bilinear Systems .................. K. M. D. Mochtchn and K. M. Pekpe 3013
Dwell-Time-Based Standard H∞ Control of Switched Systems Without Requiring Internal Stability of Subsystems .... J. Fu, R. Ma, T. Chai, and Z. Hu 3019
State Estimation and Tracking Control for Hybrid Systems by Gluing the Domains .......................................... J. Kim, H. Shim, and J. H. Seo 3026
Levant’s Arbitrary-Order Exact Differentiator: A Lyapunov Approach ..................................................... E. Cruz-Zavala and J. A. Moreno 3034
Strict Lyapunov Functions for Model Reference Adaptive Control: Application to Lagrangian Systems ........................... A. Loría, E. Panteley, and M. Maghenem 3040
Adaptive Fixed-Time Control for MIMO Nonlinear Systems With Asymmetric Output Constraints Using Universal Barrier Functions ..................................................................................... X. Jin 3046
Submodular Optimization for Consensus Networks With Noise-Corrupted Leaders .................................................. E. Mackin and S. Patterson 3054
Balanced Model Reduction for Linear Time-Varying Symmetric Systems ......................................................................... Y. Kawano and J. M. A. Scherpen 3060
Stabilization of One-Dimensional Wave Equation With Nonlinear Boundary Condition Subject to Boundary Control Matched Disturbance .............................................................................. J.-J. Liu and J.-M. Wang 3068
Discontinuous Nash Equilibria in a Two-Stage Linear-Quadratic Dynamic Game With Linear Constraints .............................. R. Singh and A. Wszniewska-Matyszkiel 3074
Iterative Feedback Tuning of the Proportional-Integral-Differential Control of Flow Over a Circular Cylinder ........................................ D. Son and H. Choi ........................................................... 1385
A Scenario-Based Stochastic MPC Approach for Problems With Normal and Rare Operations With an Application to Rivers .................................................................................................................. H. A. Nasir, A. Carè, and E. Weyer ........................................ 1397
Cooperative Periodic Coverage With Collision Avoidance .......................................................................................................................... J. M. Palacios-Gasós, E. Montijano, C. Sagüés, and S. Llorente 1411
Trajectory Tracking and Path Following for Underactuated Marine Vehicles .................................................................................. C. Paliotta, E. Lefeber, K. Y. Pettersen, J. Pinto, M. Costa, and J. Tasso de Figueiredo Borges de Sousa ............ 1423
Explicit Nonlinear Model Predictive Control for Electric Vehicle Traction Control ...................................................................................... D. Tavernini, M. Metzler, P. Gruber, and A. Sorniotti ........... 1438
Cooperative Aerial Payload Transport Guided by an In Situ Human Supervisor ........ H. Rastgoftar and E. M. Atkins .................... 1452
A Self-Organizing Sliding-Mode Controller for Wastewater Treatment Processes ........ H. Han, X. Wu, and J. Qiao ..................... 1480
Human-Guided Multirobot Cooperative Manipulation .................................................................................................................. D. Sieber and S. Hirche .......................................................... 1492
Linear Optimal Noncausal Control of Wave Energy Converters .................................................. S. Zhan and G. Li .......................................................... 1526
Batch Process Modeling and Monitoring With Local Outlier Factor .......... J. Zhu, Y. Wang, D. Zhou, and F. Gao ...................... 1552
Robust Sequential Trajectory Planning Under Disturbances and Adversarial Intruder ...................................................................................... M. Chen, S. Bansal, J. F. Fisac, and C. J. Tomlin .............. 1566
A Robust Consensus Algorithm for Current Sharing and Voltage Regulation in DC Microgrids .......................................................... M. Cucuzzella, S. Trip, C. De Persis, X. Cheng, A. Ferrara, and A. van der Schaft .......... 1583
Input Estimation for Nonminimum-Phase Systems With Application to Acceleration Estimation for a Maneuvering Vehicle .................................................................................................... A. Ansari and D. S. Bernstein .......................................................... 1596
Robust Control Designs of Payload’s Skew Rotation in a Boom Crane System ........ H. D. Tho and K. Terashima ...................... 1608
Analysis and Control of Charge and Temperature Imbalance Within a Lithium-Ion Battery Pack ................................................. D. J. Docimo and H. K. Fathy .......................................................... 1622

(Contents Continued on Back Cover)
BRIEF PAPERS
Regularized Jacobi Iteration for Decentralized Convex Quadratic Optimization With Separable Constraints ........................................... L. Deori, K. Margellos, and M. Prandini 1636
Fractional-Order Control for Robust Position/Yaw Tracking of Quadrotors With Experiments ......................................................... C. Izaguirre-Espinosa, A. J. Muñoz-Vázquez, A. Sanchez-Orta, V. Parra-Vega, and I. Fantoni 1645
Distributed Power Management for Dynamic Economic Dispatch in the Multimicrogrids Environment ...................................................... X. He, J. Yu, T. Huang, and C. Li 1651
Output Feedback Linearization of Turbidostats After Time Scaling ........................................................................................................ H. De Battista, E. Picó-Marco, F. N. Santos-Navarro, and J. Picó 1668
Recursive Kronecker-Based Vector Autoregressive Identification for Large-Scale Adaptive Optics ............................................................ G. Monchen, B. Sinquin, and M. Verhaegen 1677
A Practical Leader–Follower Tracking Control Scheme for Multiple Nonholonomic Mobile Robots in Unknown Obstacle Environments .................................................................................................................. Y. Wang, D. Wang, S. Yang, and M. Shan 1685
An Automatic-Tuning Scheme Based on Fuzzy Logic for Active Power Filter in Wind Farms ............................................................... N. G. M. Thao, K. Uchida, K. Kofuji, T. Jintsugawa, and C. Nakazawa 1694
Scale-Free Vision-Based Aerial Control of a Ground Formation With Hybrid Topology ........................................................................................................ M. Aranda, Y. Mezouar, G. López-Nicolás, and C. Sagüés 1703
Consensus Vibration Control for Large Flexible Structures of Spacecraft With Modified Positive Position Feedback Control ........................................... N. Qi, Q. Yuan, Y. Liu, M. Huo, and S. Cao 1712
A Simple Discrete-Time Tracking Differentiator and Its Application to Speed and Position Detection System for a Maglev Train .................................................................................................................. H. Zhang, Y. Xie, G. Xiao, C. Zhai, and Z. Long 1728
CART3 Field Tests for Wind Turbine Region-2 Operation With Extremum Seeking Controllers ........................................................................... Y. Xiao, Y. Li, and M. A. Rotea 1744
Hierarchical Multiobjective H-Infinity Robust Control Design for Wireless Power Transfer System Using Genetic Algorithm .................................................................................................. M. Yang, Y. Li, H. Du, C. Li, and Z. He 1753
Design of a Piecewise Affine $H_{\infty}$ Controller for MR Semiactive Suspensions With Nonlinear Constraints ............................................................... J. Wu, Z. Liu, and W. Chen 1762
Adaptive Optimal Control of Heterogeneous CACC System With Uncertain Dynamics ................................................................................... Y. Zhu, D. Zhao, and Z. Zhong 1772
Remaining Useful Life Prediction of Lithium-Ion Battery Based on Gauss–Hermite Particle Filter ............................................................................. Y. Ma, Y. Chen, X. Zhou, and H. Chen 1788
An Adaptive Control-Based Approach for 1-Click Gripping of Novel Objects Using a Robotic Manipulator ........................................................................ Z. Ding, N. Paperno, K. Prakash, and A. Behal 1805
Performance-Enhanced Robust Iterative Learning Control With Experimental Application to PMSM Position Tracking ................................................................................................ S. Mandra, K. Galkowski, E. Rogers, A. Rauh, and H. Aschemann 1813
Estimation and Control of Wind Turbine Tower Vibrations Based on Individual Blade-Pitch Strategies ........................................................................ W. H. Lio, B. L. Jones, and J. A. Rossiter 1820
Physical Models and Control of the Train Dynamics in a Metro Line Without Junction ................................................................. N. Farhi 1829

COMMENTS AND CORRECTIONS
Comment on “Fixed-Time Attitude Control for Rigid Spacecraft With Actuator Saturation and Faults” .......................................................... S. M. Esmailzadeh and M. Golestani 1846
PAPERS

A Simultaneous Adaptation Law for a Class of Nonlinearly Parametrized Switched Systems .................................................. S. Roy and S. Baldi ................................................................. 487
Correction to “An Uncertainty-Based Control Lyapunov Approach for Control-Affine Systems Modeled by Gaussian Process” J. Umlauft, L. Pöhler, and S. Hirche ................................................................. 493
Bipartite Consensus in Networked Euler–Lagrange Systems With Uncertain Parameters Under a Cooperation-Competition Network Topology J. Liu, H. Li, and J. Luo ................................................................. 494
Lyapunov Functions for Shuffle Asymptotic Stability of Discrete-Time Switched Systems .................................................. A. Girard and P. Mason ................................................................. 499
Adaptive Consensus of Nonlinearly Parameterized Multi-Agent Systems I. H. Imran, Z. Chen, Y. Yan, and M. Fu ................................................................. 505
Linear-Quadratic Mean-Field-Type Games With Multiple Input Constraints J. Barreiro-Gomez, T. E. Duncan, and H. Tembine ................................................................. 511
Optimal Stochastic Evasive Maneuvers Using the Schrödinger’s Equation F. Farokhi and M. Egerstedt ................................................................. 517
Estimating Private Beliefs of Bayesian Agents Based on Observed Decisions R. Mattila, I. Lourenço, C. R. Rojas, V. Krishnamurthy, and B. Wahlberg ................................................................. 523
On the Inapproximability of the Discrete Witsenhausen Problem A. Olshevsky ................................................................. 529
Balanced Truncation for a Special Class of Bilinear Descriptor Systems I. P. Duff, P. Goyal, and P. Benner ................................................................. 535
A New Bounded Confidence Model Seeking Structural Balance H. D. Aghbolagh, M. Zamani, and Z. Chen ................................................................. 541
Information Bounds for State Estimation in the Presence of an Eavesdropper A. S. Leong, D. E. Quevedo, D. Dolz, and S. Dey ................................................................. 547
Control Technique for Synchronization of Selected Nodes in Directed Networks B. Ursino, L. V. Gambuzza, V. Latora, and M. Frasca ................................................................. 553
Filter-Based Feedback Control for a Class of Markovian Open Quantum Systems Y. Liu, D. Dong, I. R. Petersen, and H. Yonezawa ................................................................. 565
Constrained Control of Linear Systems Subject to Combinations of Intersections and Unions of Concave Constraints M. Hosseinzadeh, A. Cotorruelo, D. Limon, and E. Garone ................................................................. 571
Performance-Oriented Model Learning for Data-Driven MPC Design D. Piga, M. Forgione, S. Formentin, and A. Bemporad ................................................................. 577
H2 Control Under Intermittent Sampling and Small Communication Delays A. Goldenshluger and L. Mirkin ................................................................. 583
Data-Driven Minimum-Energy Controls for Linear Systems G. Baggio, V. Katewa, and F. Pasqualetti ................................................................. 589
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>595</td>
<td>Leader–Follower Bipartite Consensus of Uncertain Linear Multiagent Systems With External Bounded Disturbances Over Signed Directed Graph</td>
<td>S. Bhowmick and S. Panja</td>
</tr>
<tr>
<td>607</td>
<td>Network Feedback Passivation of Passivity-Short Multi-Agent Systems</td>
<td>M. Shaf and D. Zelazo</td>
</tr>
<tr>
<td>613</td>
<td>Efficient Derivative Evaluation for Rigid-Body Dynamics Based on Recursive Algorithms Subject to Kinematic and Loop Constraints</td>
<td>E. Dall’Anese, A. Simonetto, and A. Bernstein</td>
</tr>
<tr>
<td>619</td>
<td>Event-Based State Estimation Under the Presence of Multiplicative Measurement Noise</td>
<td>S. Chialagund, S. Chitranganti, and S. Aberkane</td>
</tr>
<tr>
<td>625</td>
<td>GPU-Based Parameterized NMPC Scheme for Control of Half Car Vehicle With Semi-Active Suspension System</td>
<td>K. M. M. Rathai, O. Sename, and M. Alamir</td>
</tr>
<tr>
<td>631</td>
<td>Local Controllability of a Magnetized Purcell’s Swimmer</td>
<td>C. Moreau</td>
</tr>
<tr>
<td>637</td>
<td>Theory and Design of PID Controller for Nonlinear Uncertain Systems</td>
<td>J. Zhang and L. Guo</td>
</tr>
<tr>
<td>643</td>
<td>Sum-of-Norms Model Predictive Control for Spacecraft Maneuvering</td>
<td>M. Leomanni, G. Bianchini, A. Garulli, A. Giannitrapani, and R. Quarterlo</td>
</tr>
<tr>
<td>649</td>
<td>Event-Triggered Control of Nonlinear Systems With Updating Threshold</td>
<td>D. Theodosis and D. V. Dimarogonas</td>
</tr>
<tr>
<td>655</td>
<td>On Exact Controllability of Infinite-Dimensional Linear Port-Hamiltonian Systems</td>
<td>B. Jacob and J. T. Kaiser</td>
</tr>
<tr>
<td>661</td>
<td>Synchronization in Networks of Identical Nonlinear Systems via Dynamic Dead Zones</td>
<td>G. Casadei, D. Astolfi, A. Alessandri, and L. Zaccarian</td>
</tr>
<tr>
<td>667</td>
<td>Static Output Feedback Stabilization of Discrete-Time Linear Systems With Stochastic Dynamics Determined by an Independent Identically Distributed Process</td>
<td>Y. Hosoe and D. Peaucelle</td>
</tr>
<tr>
<td>673</td>
<td>LQ Non-Gaussian Regulator With Markovian Control</td>
<td>S. Battilotti, F. Cacace, M. d’Angelo, A. Germani, and B. Sinopoli</td>
</tr>
<tr>
<td>679</td>
<td>Distributed Algorithm for Economic Dispatch Problem With Separable Losses</td>
<td>S. Lee and H. Shim</td>
</tr>
<tr>
<td>685</td>
<td>A Separation Principle for Discrete-Time Fractional-Order Dynamical Systems and Its Implications to Closed-Loop Neurotechnology</td>
<td>S. Chatterjee, O. Romero, and S. Pequito</td>
</tr>
<tr>
<td>703</td>
<td>One-Shot Verification of Dissipativity Properties From Input–Output Data</td>
<td>A. Romer, J. Berberich, J. Köhler, and F. Allgower</td>
</tr>
<tr>
<td>709</td>
<td>Guaranteeing Disturbance Rejection and Control Signal Continuity for the Saturated Super-Twisting Algorithm</td>
<td>R. Seeber and M. Horn</td>
</tr>
<tr>
<td>715</td>
<td>Efficient Linear Sensor Fusion Over Multiple Lossy Channels With Local Observability</td>
<td>Y. Wu, Y. Li, and L. Shi</td>
</tr>
<tr>
<td>721</td>
<td>Closed-Form Barrier Functions for Multi-Agent Ellipsoidal Systems With Uncertain Lagrangian Dynamics</td>
<td>C. K. Verginis and D. V. Dimarogonas</td>
</tr>
<tr>
<td>727</td>
<td>Inner Approximations of the Maximal Positively Invariant Set for Polynomial Dynamical Systems</td>
<td>A. Oustry, M. Tacchi, and D. Henrion</td>
</tr>
<tr>
<td>733</td>
<td>A Dynamic Mode Decomposition Approach With Hankel Blocks to Forecast Multi-Channel Temporal Series</td>
<td>E. V. Filho and P. Lopes dos Santos</td>
</tr>
<tr>
<td>745</td>
<td>On Reachability and Null-Controllability of Nonstrict Convex Processes</td>
<td>J. Eising and M. K. Camlibel</td>
</tr>
<tr>
<td>751</td>
<td>Control Barrier Functions for Multi-Agent Systems Under Conflicting Local Signal Temporal Logic Tasks</td>
<td>L. Lindemann and D. V. Dimarogonas</td>
</tr>
<tr>
<td>757</td>
<td>An Observer-Based Output Feedback Controller for the Finite-Time Stabilization of Markov Jump Linear Systems</td>
<td>G. Tartaglione, M. Ariola, and F. Amato</td>
</tr>
<tr>
<td>769</td>
<td>Vector Autoregressive POMDP Model Learning and Planning for Human–Robot Collaboration</td>
<td>W. Zheng and H. Lin</td>
</tr>
</tbody>
</table>
American Control Conference
ACC 2019

July 10-12,
Philadelphia, Pennsylvania, USA

Manuscript Submission:
September 17, 2018 (Passed)

Acceptance/Rejection Notice:
January 31, 2019

Final Manuscript Submission:
March 15, 2019 (Passed)

http://acc2019.a2c2.org/
Conference on
Control Technology and Applications
CCTA 2019

August 19–21, Hong Kong, China

Invited Session Proposals Due:
January 19, 2019 (Passed)

Contributed and Invited Papers’ Submissions Due:
January 19, 2019 (Passed)

Notification of Acceptance/Rejection:
April 19, 2019

Deadline for final submission of all papers:
May 19, 2019 (Passed)

http://ccta2019.ieeecss.org/
Conference on Decision and Control

CDC 2019

December 11–13, Nice, France

Invited Session Proposals Due:
March 7, 2019 (Passed)

Initial Paper Submissions Due:
March 15, 2019 (Passed)

Workshop Proposals Due:
May 2, 2019 (Passed)

Paper and Workshop Decision Notification:
Mid-July, 2019

Accepted Papers Due:
September 10, 2019

http://cdc2019.ieeecss.org/
American Control Conference
ACC 2020

July 1–3, Denver, Colorado, USA

Paper Submission Deadline:
September 23, 2019

Acceptance/Rejection Notice:
January 31, 2020

Final Manuscript Submission:
March 15, 2020

http://acc2020.a2c2.org/