

IEEE TRANSACTIONS ON AUTOMATIC CONTROL

A PUBLICATION OF THE IEEE CONTROL SYSTEMS SOCIETY



OCTOBER 2021

VOLUME 66

NUMBER 10

IETAA9

(ISSN 0018-9286)

REGULAR PAPERS

Convergence Rates of Distributed Gradient Methods Under Random Quantization: A Stochastic Approximation Approach <i>T. T. Doan, S. T. Maguluri, and J. Romberg</i>	4469
Event-Triggered Learning for Linear Quadratic Control <i>H. Schlüter, F. Solowjow, and S. Trimpe</i>	4485
Characterizing PID Controllers for Linear Time-Delay Systems: A Parameter-Space Approach <i>X.-G. Li, S.-I. Niculescu, J.-X. Chen, and T. Chai</i>	4499
Invariance Properties of Controlled Stochastic Nonlinear Systems Under Information Constraints <i>C. Kawan and S. Yüksel</i>	4514
Finite Rate Distributed Weight-Balancing and Average Consensus Over Digraphs <i>C.-S. Lee, N. Michelusi, and G. Scutari</i>	4530
Necessary and Sufficient Conditions for Asymptotic Decoupling of Stable Modes in LTV Systems <i>Z. Hu, Z. Chen, and H.-T. Zhang</i>	4546
Sensor Switching Control Under Attacks Detectable by Finite Sample Dynamic Watermarking Tests <i>P. Hespanhol, M. Porter, R. Vasudevan, and A. Aswani</i>	4560
Zero-Determinant Strategies in Repeated Multiplayer Social Dilemmas With Discounted Payoffs <i>A. Govaert and M. Cao</i>	4575
Persuasion-Based Robust Sensor Design Against Attackers With Unknown Control Objectives <i>M. O. Sayin and T. Başar</i>	4589
Asynchronous Optimization Over Graphs: Linear Convergence Under Error Bound Conditions <i>L. Cannelli, F. Facchinei, G. Scutari, and V. Kungurtsev</i>	4604
Distributed Bandit Online Convex Optimization With Time-Varying Coupled Inequality Constraints <i>X. Yi, X. Li, T. Yang, L. Xie, T. Chai, and K. H. Johansson</i>	4620
Discrete-Time Differential Dynamic Programming on Lie Groups: Derivation, Convergence Analysis, and Numerical Results <i>G. I. Boutselis and E. Theodorou</i>	4636
Differential Temporal Difference Learning <i>A. M. Devraj, I. Kontoyiannis, and S. P. Meyn</i>	4652
Output Feedback Control of Coupled Linear Parabolic ODE–PDE–ODE Systems <i>J. Deutscher and N. Gehring</i>	4668
Decoupling With Stability of Linear Systems by Static-State Feedback <i>V. Kučera</i>	4684
On Zeno Behavior in Event-Triggered Finite-Time Consensus of Multiagent Systems <i>H. Yu and T. Chen</i>	4700
Analysis and Design of Vehicle Platooning Operations on Mixed-Traffic Highways <i>L. Jin, M. Čičić, K. H. Johansson, and S. Amin</i>	4715
Robust Controller Design for Stochastic Nonlinear Systems via Convex Optimization <i>H. Tsukamoto and S.-J. Chung</i>	4731
Robust Filtering for 2-D Discrete-Time Switched Systems <i>W. Ren and J. Xiong</i>	4747

TECHNICAL NOTES

Online Optimization With Predictions and Switching Costs: Fast Algorithms and the Fundamental Limit <i>Y. Li, G. Qu, and N. Li</i>	4761
On Compensating Actuator Delays in Consensus Control Under Undirected Graphs <i>R. Huang and Z. Ding</i>	4769
Structural Robustness to Noise in Consensus Networks: Impact of Degrees and Distances, Fundamental Limits, and Extremal Graphs <i>Y. Yazıcıoğlu, W. Abbas, and M. Shabbir</i>	4777

(Contents Continued on Back Cover)



Convergence and Accuracy Analysis for a Distributed Static State Estimator Based on Gaussian Belief Propagation	<i>D. Marelli, T. Sui, M. Fu, and X. Sun</i>	4785
Existence of Team-Optimal Strategies in Teams With Countable Observation Spaces	<i>A. Gupta</i>	4792
Stabilization of Highly Nonlinear Stochastic Coupled Systems via Periodically Intermittent Control	<i>Y. Liu, J. Liu, and W. Li</i>	4799
Improved Independent and Uniform Multivariable Gain and Phase Margins in \mathcal{H}_∞ /LTR Control	<i>L. H. C. Ferreira and F. H. D. Guaracy</i>	4807
A Bernstein Polynomial Approach to Estimating Reachable Set of Periodic Piecewise Polynomial Systems	<i>X. Xie, C. Fan, K.-W. Kwok, and J. Lam</i>	4812
Induced-Equations-Based Stability Analysis and Stabilization of Markovian Jump Boolean Networks	<i>S. Zhu, J. Lu, Y. Lou, and Y. Liu</i>	4820
Boundary Observer Design for Stochastic Phase Transition Models of Nonequilibrium Traffic Flow	<i>L. Zhang, X. Li, J. Hao, and J. Qiao</i>	4828
On the Structural Target Controllability of Undirected Networks	<i>J. Li, X. Chen, S. Pequito, G. J. Pappas, and V. M. Preciado</i>	4836
A Distributed Indirect Adaptive Approach to Cooperative Tracking in Networks of Uncertain Single-Input Single-Output Systems	<i>S. Baldi, I. A. Azzollini, and P. A. Ioannou</i>	4844
Efficient Robust Parameter Identification in Generalized Kalman Smoothing Models	<i>J. Jonker, P. Zheng, and A. Y. Aravkin</i>	4852
\mathcal{H}_∞ Functional Filtering for Linear Systems With Unknown Inputs	<i>M. Darouach and T. Fernando</i>	4858
Second-Order Online Nonconvex Optimization	<i>A. Lesage-Landry, J. A. Taylor, and I. Shames</i>	4866
Event-Triggered Distributed MPC With Variable Prediction Horizon	<i>A. Ma, K. Liu, Q. Zhang, T. Liu, and Y. Xia</i>	4873
Adaptive Fixed-Lag Smoothing Algorithms Based on the Variational Bayesian Method	<i>H. Xu, K. Duan, H. Yuan, W. Xie, and Y. Wang</i>	4881
Integral Quadratic Constraints for Asynchronous Sample-and-Hold Links	<i>M. Cantoni, C.-Y. Kao, and M. A. Fabbro</i>	4888
Continuous-Time Penalty Methods for Nash Equilibrium Seeking of a Nonsmooth Generalized Noncooperative Game	<i>C. Sun and G. Hu</i>	4895
Denominator Assignment, Invariants, and Canonical Forms Under Dynamic Feedback Compensation in Linear Multivariable Nonsquare Systems	<i>A. Vardulakis, A. Yannakoudakis, C. Wei, and T. Chai</i>	4903
Hybrid Estimation Strategy-Based Anti-disturbance Control for Nonlinear Systems	<i>K. Yong, M. Chen, Y. Shi, and Q. Wu</i>	4910
A Matrosov Theorem for Hybrid Systems With Memory	<i>K.-Z. Liu, X.-F. Wang, A. R. Teel, X.-M. Sun, and J. Liu</i>	4918
Krasovskii and Shifted Passivity-Based Control	<i>Y. Kawano, K. C. Kosaraju, and J. M. A. Scherpen</i>	4926
Bounded Observer-Based Consensus Algorithm for Robust Finite-Time Tracking Control of Multiple Nonholonomic Chained-Form Systems	<i>N. Sarrafan and J. Zarei</i>	4933
Optimal Transport Between Gaussian Stationary Processes	<i>M. Zorzi</i>	4939
Leader-Follower Flocking for Discrete-Time Cucker-Smale Models With Lossy Links and General Weight Functions	<i>J. Shao, W. X. Zheng, L. Shi, and Y. Cheng</i>	4945
Convergence of a Distributed Least Squares	<i>S. Xie, Y. Zhang, and L. Guo</i>	4952
A Hybrid Control Approach to H_∞ Problem of Nonlinear Descriptor Systems With Actuator Saturation	<i>X. Lu and H. Li</i>	4960
Distributed Observers for LTI Systems With Finite Convergence Time: A Parameter-Estimation-Based Approach	<i>R. Ortega, E. Nuño, and A. Bobtsov</i>	4967
On Necessary and Sufficient Conditions for Exponential Consensus in Dynamic Networks via Uniform Complete Observability Theory	<i>Q. Ma, J. Qin, X. Yu, and L. Wang</i>	4975
State Estimation of Kermack-McKendrick PDE Model With Latent Period and Observation Delay	<i>H. Sano and M. Wakaiki</i>	4982
Synthesis of Supervisors Robust Against Sensor Deception Attacks	<i>R. Meira-Góes, S. Lafortune, and H. Marchand</i>	4990
On the Observability and Observer Design on the Special Orthogonal Group Based on Partial Inertial Sensing	<i>G. Pittiglio, S. Calò, and P. Valdastri</i>	4998
Discrete Bilinear Biquadratic Regulator	<i>I. Halperin, G. Agranovich, and B. Lew</i>	5006
Intermittent Feedback Control With Maximum Average Off-Time	<i>V. Sawant, D. Chakraborty, and D. Pal</i>	5013
A Reputation Mechanism for Dynamical Interactions in Multiagent Systems Under Quality of Service Requirements	<i>F. Tedesco, G. Franzè, and A. Casavola</i>	5021
Learning in Restless Multiarmed Bandits via Adaptive Arm Sequencing Rules	<i>T. Gafni and K. Cohen</i>	5029
Local Decomposition of Kalman Filters and its Application for Secure State Estimation	<i>X. Liu, Y. Mo, and E. Garone</i>	5037
Comment on “LaSalle-Type Theorem and Its Applications to Infinite Horizon Optimal Control of Discrete-Time Nonlinear Stochastic Systems”	<i>T. Zhang and F. Deng</i>	5045
