

4th IFAC Workshop on Distributed Estimation and Control in Networked Systems 2013

**Koblenz, Germany
25-26 September 2013**

Editor:

Daniel Vey

**ISBN: 978-1-62993-235-4
ISSN: 1474-6670**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2013) by Elsevier Limited
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the publisher, Elsevier Limited
at the address below.

Elsevier Limited
The Boulevard, Langford Lane
Kidlington OX5 1GB, United Kingdom

Phone: +44 (0)1865 844640
Fax: +44 (0)1865 843912

Email: eurobkinfo@elsevier.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Content List of 4th IFAC Workshop on Distributed Estimation and Control in Networked Systems

Technical Program for Wednesday September 25, 2013

WeP-11		Poster Room
Control under Communication Constraints I (Poster Session)		
10:45-12:00		WeP-I1.1
<i>Coarsest Quantization for Networked Control of Uncertain Systems</i> , pp. 1-6.		
Kang, Xile		Tokyo Inst. of Tech.
Ishii, Hideaki		Tokyo Inst. of Tech.
10:45-12:00		WeP-I1.2
<i>Robust Event-Based Control and Scheduling of Networked Embedded Control Systems</i> , pp. 7-14.		
Al-Areqi, Sanad		Univ. of Kaiserslautern
Görges, Daniel		Univ. of Kaiserslautern
Liu, Steven		Univ. of Kaiserslautern
10:45-12:00		WeP-I1.3
<i>Multi-Sensor Scheduling for State Estimation with Event-Based, Stochastic Triggers</i> , pp. 15-22.		
Weerakkody, Sean		Carnegie Mellon Univ.
Mo, Yilin		Carnegie Mellon Univ.
Sinopoli, Bruno		Carnegie Mellon Univ.
Han, Duo		Hong Kong Univ. of Science and Tech.
Shi, Ling		Hong Kong Univ. of Science and Tech.
10:45-12:00		WeP-I1.4
<i>Event-Based LQG Control Over Networks with Random Transmission Delays and Packet Losses</i> , pp. 23-30.		
Dolgov, Maxim		Karlsruhe Inst. of Tech. (KIT)
Fischer, Joerg		Karlsruhe Inst. of Tech. (KIT)
Hanebeck, Uwe		Karlsruhe Inst. of Tech. (KIT)
WeP-12		Poster Room
Distributed Control and Estimation I (Poster Session)		
10:45-12:00		WeP-I2.1
<i>Critical Points of Potential Functions for Circular Formation Control</i> , pp. 31-37.		
Lageman, Christian		Department of Mathematics, Univ. of Wuerzburg
Helmke, Uwe R.		Univ. of Wuerzburg
10:45-12:00		WeP-I2.2
<i>On Optimal Coverage with Unreliable Sensors</i> , pp. 38-42.		
Frasca, Paolo		Pol. di Torino
Garin, Federica		INRIA
10:45-12:00		WeP-I2.3
<i>Structured Computation of Constrained Quadratic Optimal Controls for Heterogeneous Networks</i> , pp. 43-48.		
Shames, Iman		Univ. of Melbourne
Cantoni, Michael		Univ. of Melbourne
10:45-12:00		WeP-I2.4
<i>Region of Attraction of Power Systems</i> , pp. 49-54.		
Muenz, Ulrich		Siemens
Romeres, Diego		Univ. of Padova
10:45-12:00		WeP-I2.5
<i>Tube-Based Distributed Adaptive Control of Interconnected Linear Systems</i> , pp. 55-60.		
Mirkin, Boris		Tech. -- Israel Inst. of Tech.
Gutman, Per-Olof		Tech. - Israel Inst. of Tech.
Shtessel, Yuri B.		Univ. of Alabama at Huntsville
WeP-13		Poster Room
Distributed Optimization and MPC I (Poster Session)		
10:45-12:00		WeP-I3.1
<i>Distributed Actuator Reconfiguration in Networked Control Systems</i> , pp. 61-68.		

Teixeira, André	KTH - Royal Inst. of Tech.
Araújo, José	Royal Inst. of Tech.
Sandberg, Henrik	KTH Royal Inst. of Tech.
Johansson, Karl H.	Royal Inst. of Tech.
10:45-12:00	WeP-I3.2
<i>On Informational Nudging and Control of Payoff-Based Learning</i> , pp. 69-74.	
Guers, Robin	Univ. of Illinois Urbana Champaign
Langbort, Cedric	Univ. of Illinois at Urbana Champaign
Work, Dan	Univ. of Illinois at Urbana-Champaign
10:45-12:00	WeP-I3.3
<i>A Distributed Solution to the Adjustable Robust Economic Dispatch Problem</i> , pp. 75-80.	
Lorenzen, Matthias	Univ. of Stuttgart
Bürger, Mathias	Univ. of Stuttgart
Notarstefano, Giuseppe	Univ. del Salento (Univ. of Lecce)
Allgower, Frank	Univ. of Stuttgart
WeP-I4	Poster Room
Multi-Agent Systems and Consensus I (Poster Session)	
10:45-12:00	WeP-I4.1
<i>Designing Decentralized Control Systems without Structural Fixed Modes: A Multilayer Approach</i> , pp. 81-88.	
Pequito, Sérgio	Inst. Superior Técnico - Carnegie Mellon Univ.
Agbi, Clarence	Carnegie Mellon Univ.
Popli, Nipun	Carnegie Mellon Univ.
Kar, Soumya	Carnegie Mellon Univ.
Aguiar, A. Pedro	Faculty of Engineering, Univ. of Porto (FEUP)
Ilic, Marija	Carnegie Mellon Univ.
10:45-12:00	WeP-I4.2
<i>Pair-Wise Agreement Using Set-Valued Sensors</i> , pp. 89-94.	
Ramachandran, Thiagarajan	Georgia Inst. of Tech.
Egerstedt, Magnus	Georgia Inst. of Tech.
10:45-12:00	WeP-I4.3
<i>The Forest Consensus Theorem and Asymptotic Properties of Coordination Protocols</i> , pp. 95-101.	
Chebotarev, Pavel	Inst. of Control Sciences of the Russian Acad. of Sciences
Agavev, Rafiq	Inst. of Control Sciences of the Russian Acad. of Sciences
10:45-12:00	WeP-I4.4
<i>Synchronization of Multi-Agent Systems with Similar Dynamics</i> , pp. 102-109.	
Mosebich, Andrej	Ruhr-Univ. Bochum
Lunze, Jan	Ruhr-Univ. Bochum
10:45-12:00	WeP-I4.5
<i>Fixed-Time Consensus Algorithm for Multi-Agent Systems with Integrator Dynamics</i> , pp. 110-115.	
Parsegov, Sergey	Inst. for Control Science, RAS
Polyakov, Dr. Andrey	INRIA Lille Nord-Europe
Shcherbakov, P.S.	Moscow Inst. of Control Sciences
WeP-II1	Poster Room
Control under Communication Constraints II (Poster Session)	
15:30-16:45	WeP-II1.1
<i>Distributed Event-Triggered Control for Synchronization of Dynamical Networks with Estimators</i> , pp. 116-121.	
Liu, Tao	Univ. of Groningen
Cao, Ming	Univ. of Groningen
De Persis, Claudio	Univ. of Groningen
Hendrickx, Julien M.	Univ. Catholique de Louvain
15:30-16:45	WeP-II1.2
<i>Control of Ensembles of Single-Input Continuous-Time Linear Systems</i> , pp. 122-129.	
Schoenlein, Michael	Univ. of Wuerzburg
Helmke, Uwe R.	Univ. of Wuerzburg

15:30-16:45	WeP-II1.3
<i>Stabilization under Signal-To-Noise Ratio Constraints on Feedback Links with Bounded Noise</i> , pp. 130-137.	
Shingin, Hidenori	Yamaguchi Univ.
Ohta, Yoshito	Kyoto Univ.
WeP-II2	Poster Room
Distributed Control and Estimation II (Poster Session)	
15:30-16:45	WeP-II2.1
<i>On the Steady-State Inverse-Optimality of Passivity-Based Cooperative Control</i> , pp. 138-143.	
Bürger, Mathias	Univ. of Stuttgart
Zelazo, Daniel	Tech. - Israel Inst. of Tech.
Allgower, Frank	Univ. of Stuttgart
15:30-16:45	WeP-II2.2
<i>PDdE-Based Analysis of Vehicular Platoons with Spatio-Temporal Decoupling</i> , pp. 144-151.	
Herman, Ivo	Czech Tech. Univ. in Prague
Martinec, Dan	Czech Tech. Univ. in Prague
Hurak, Zdenek	Czech Tech. Univ. in Prague
Sebek, Michael	Czech Tech. Univ. in Prague
15:30-16:45	WeP-II2.3
<i>Non-Conservative and Tractable Stability Tests for General Linear Interconnected Systems with an Application to Power Systems</i> , pp. 152-159.	
Bobiti, Ruxandra Valentina	Eindhoven Univ. of Tech.
Gielen, Rob H.	Eindhoven Univ. of Tech.
Lazar, Mircea	Eindhoven Univ. of Tech.
15:30-16:45	WeP-II2.4
<i>Secure Detection Using Binary Sensors</i> , pp. 160-167.	
Chabukwar, Rohan	Carnegie Mellon Univ.
Mo, Yilin	Carnegie Mellon Univ.
Sinopoli, Bruno	Carnegie Mellon Univ.
15:30-16:45	WeP-II2.5
<i>A Switching Control Strategy for Disturbed Networked Systems with Similar Dynamics</i> , pp. 168-173.	
Schuh, René	Ruhr-Univ. Bochum
Lunze, Jan	Ruhr-Univ. Bochum
15:30-16:45	WeP-II2.6
<i>Networked Estimation Using Sparsifying Basis Prediction</i> , pp. 174-181.	
Farokhi, Farhad	KTH, Royal Inst. of Tech.
Shirazinia, Amirpasha	KTH Royal Inst. of Tech.
Johansson, Karl H.	Royal Inst. of Tech.
WeP-II3	Poster Room
Distributed Optimization and MPC II (Poster Session)	
15:30-16:45	WeP-II3.1
<i>Energy Management in Smart Grids with Electric Vehicles Based on Pricing</i> , pp. 182-189.	
Görges, Daniel	Univ. of Kaiserslautern
Liu, Steven	Univ. of Kaiserslautern
15:30-16:45	WeP-II3.2
<i>Distributed Controller Design for a Class of Sparse Singular Systems with Privacy Constraints</i> , pp. 190-197.	
Deroo, Frederik	Tech. Univ. Muenchen
Ulbrich, Michael	Tech. Univ. Muenchen
Hirche, Sandra	Tech. Univ. Muenchen
Anderson, Brian D.O.	Australian National Univ.
15:30-16:45	WeP-II3.3
<i>Rotary-Wing UAVs Trajectory Planning by Distributed Linear MPC with Reconfigurable Communication Network Topologies</i> , pp. 198-205.	
Grancharova, Alexandra	Bulgarian Acad. of Sciences
Grøtli, Esten Ingar	Norwegian Univ. of Science and Tech.
Johansen, Tor Arne	Norwegian Univ. of Science and Tech.

WeP-II4	Poster Room
Multi-Agent Systems and Consensus II (Poster Session)	
15:30-16:45	WeP-II4.1
<i>Double Integrator Consensus Systems with Application to Power Systems</i> , pp. 206-211.	
Goldin, Darina	Tech. Univ. Berlin
15:30-16:45	WeP-II4.2
<i>Gossips and Prejudices: Ergodic Randomized Dynamics in Social Networks</i> , pp. 212-219.	
Frasca, Paolo	Pol. di Torino
Ravazzi, Chiara	Pol. di Torino
Tempo, Roberto	CNR-IEIIT, Pol. di Torino
Ishii, Hideaki	Tokyo Inst. of Tech.
15:30-16:45	WeP-II4.3
<i>Controlled Coverage Using Time-Varying Density Functions</i> , pp. 220-226.	
Lee, Sung G.	Georgia Inst. of Tech.
Egerstedt, Magnus	Georgia Inst. of Tech.
15:30-16:45	WeP-II4.4
<i>Distributed Design of Finite-Time Average Consensus Protocols</i> , pp. 227-233.	
Tran, Thi-Minh Dung	Gipsa-Lab. Joseph Fourier/CNRS
Kibangou, Alain	GIPSA-Lab. Univ. Joseph Fourier, CNRS
15:30-16:45	WeP-II4.5
<i>Adaptive Consensus-Based Algorithms for Fast Estimation from Relative Measurements</i> , pp. 234-239.	
Carron, Andrea	Univ. of Padova
Todescato, Marco	Univ. of Padova
Carli, Ruggero	Univ. of Padova
Schenato, Luca	Univ. of Padova

Technical Program for Thursday September 26, 2013

ThP-III1		Poster Room
Control under Communication Constraints III (Poster Session)		
10:45-12:00		ThP-III1.1
<i>On the Joint Design of the Controller, Its Placement, and the Routing for Networked Control Systems</i> , pp. 240-246.		
Blind, Rainer		Univ. of Stuttgart
Allgower, Frank		Univ. of Stuttgart
10:45-12:00		ThP-III1.2
<i>On Self-Triggered Synchronization of Linear Systems</i> , pp. 247-252.		
De Persis, Claudio		Univ. of Groningen
10:45-12:00		ThP-III1.3
<i>Probabilistic Management of Slope Disaster Detection Systems for Reduced Energy Consumption and Its Convergence Property</i> , pp. 253-260.		
Hirata, Kenji		Nagaoka Univ. of Tech.
Koizumi, Keigo		Osaka Univ.
Hespanha, Joao		Univ. of California, Santa Barbara
10:45-12:00		ThP-III1.4
<i>Optimal Energy Allocation for Kalman Filtering Over Packet Dropping Links with Energy Harvesting Constraints</i> , pp. 261-268.		
Nourian, Mojtaba		The Univ. of Melbourne
Leong, Alex		Univ. of Melbourne
Dey, Subhrakanti		Univ. of Melbourne
10:45-12:00		ThP-III1.5
<i>Event-Triggered Control under Poisson Events: The Role of Sporadicity</i> , pp. 269-276.		
Antunes, Duarte		Eindhoven Univ. of Tech.
ThP-III2		Poster Room
Distributed Control and Estimation III (Poster Session)		
10:45-12:00		ThP-III2.1
<i>Scalable Stabilization of Large Scale Discrete-Time Linear Systems Via the 1-Norm</i> , pp. 277-284.		
Athanasopoulos, Nikolaos		Eindhoven Univ. of Tech.
Lazar, Mircea		Eindhoven Univ. of Tech.
10:45-12:00		ThP-III2.2
<i>Decentralized Symbolic Control of Interconnected Systems with Application to Vehicle Platooning</i> , pp. 285-292.		
Borri, Alessandro		Istituto di Analisi dei Sistemi ed Informatica "A. Ruberti" (IAS)
Dimarogonas, Dimos V.		Royal Inst. of Tech.
Johansson, Karl H.		Royal Inst. of Tech.
Di Benedetto, M. Domenica		Univ. of L'Aquila
Pola, Giordano		Univ. of L'Aquila
10:45-12:00		ThP-III2.3
<i>Effect of Large Disturbances on the Local Behavior of Nonlinear Physically Interconnected Systems</i> , pp. 293-300.		
Mangesius, Herbert		TU Muenchen
Hirche, Sandra		Tech. Univ. Muenchen
10:45-12:00		ThP-III2.4
<i>Q-Parametrization and an SDP for H-Infinity Optimal Decentralized Control</i> , pp. 301-308.		
Alavian, Alborz		Univ. of Maryland, Coll. Park
Rotkowitz, Michael		The Univ. of Maryland
ThP-III4		Poster Room
Multi-Agent Systems and Consensus III (Poster Session)		
10:45-12:00		ThP-III4.1
<i>A Game Theoretic Approach to Distributed Coverage of Graphs by Heterogeneous Mobile Agents</i> , pp. 309-315.		
Yazicioglu, Ahmet Yasin		Georgia Inst. of Tech.
Egerstedt, Magnus		Georgia Inst. of Tech.
Shamma, Jeff S.		Georgia Inst. of Tech.
10:45-12:00		ThP-III4.2

Finite-Time Synchronisation of Completely Coupled Agents, pp. 316-321.

Lunze, Jan Ruhr-Univ. Bochum

10:45-12:00 ThP-III4.3

On the Spread of Innovation in Social Networks, pp. 322-327.

Rosa, Daniele Univ. of Cagliari, Italy

Giua, Alessandro Univ. of Cagliari, Italy / Aix-Marseille Univ. France

10:45-12:00 ThP-III4.4

DisCoverage: From Coverage to Distributed Multi-Robot Exploration, pp. 328-335.

Haumann, Dominik Tech. Univ. Darmstadt

Willert, Volker TU Darmstadt, Inst. of Automatic Control

Listmann, Kim Daniel Tech. Univ. Darmstadt

10:45-12:00 ThP-III4.5

Extensions of Invariance Principle with Applications in Multi-Agent Systems, pp. 336-341.

Zhang, Bin Beihang Univ.

Jia, Yingmin Beihang Univ.

10:45-12:00 ThP-III4.6

Consensus on the Average in Arbitrary Directed Network Topologies with Time-Delays, pp. 342-347.

Zareh, Mehran Univ. of Cagliari

Seatzu, Carla Univ. of Cagliari

Franceschelli, Mauro Univ. of Cagliari

ThP-IV1 Poster Room

Control under Communication Constraints IV (Poster Session)

14:30-15:45 ThP-IV1.1

Distributed Control of Interconnected Systems with Event-Based Information Requests, pp. 348-355.

Stoecker, Christian Ruhr-Univ. Bochum

Lunze, Jan Ruhr-Univ. Bochum

14:30-15:45 ThP-IV1.2

On the Stability of Prioritized Error-Based Scheduling for Resource-Constrained Networked Control Systems, pp. 356-362.

Mamduhi, Mohammadhossein Tech. Univ. of Munich (TUM)

Molin, Adam Tech. Univ. München

Hirche, Sandra Tech. Univ. Muenchen

14:30-15:45 ThP-IV1.3

Distributed Control of Interconnected Systems with Lossy Communication Networks, pp. 363-368.

Koegel, Markus J. Otto-von-Guericke-Univ. Magdeburg

Findeisen, Rolf Otto-von-Guericke-Univ. Magdeburg

14:30-15:45 ThP-IV1.4

Dissipativity-Based Teleoperation with Time-Varying Communication Delays, pp. 369-376.

Varnell, Jesse Paul Georgia Inst. of Tech.

Zhang, Fumin Georgia Inst. of Tech.

ThP-IV3 Poster Room

Distributed Optimization and MPC IV (Poster Session)

14:30-15:45 ThP-IV3.1

A Distributed Receding Horizon Control Scheme for Leader-Follower Architectures: A Set-Theoretic Approach, pp. 377-382.

Franze, Giuseppe Univ. della Calabria

Tedesco, Francesco Univ. degli Studi della Calabria

14:30-15:45 ThP-IV3.2

Distributed Predictive Control for a Class of Hybrid Systems with Event-Based Communication, pp. 383-388.

Gross, Dominic Univ. of Kassel

Stursberg, Olaf Univ. of Kassel

14:30-15:45 ThP-IV3.3

Decomposition of Data Rate Allocation for Stabilization Over Networks, pp. 389-396.

Gan, Tingyue Univ. of Maryland at Coll. Park

Rotkowitz, Michael The Univ. of Maryland

ThP-IV4		Poster Room
Multi-Agent Systems and Consensus IV (Poster Session)		
14:30-15:45		ThP-IV4.1
<i>Synchronization of Heterogeneous Leader-Follower Multi-Agent System with External Disturbances</i> , pp. 397-403.		
Liu, Yang		Beihang Univ. Beijing, P.R.China
Lunze, Jan		Ruhr-Univ. Bochum
14:30-15:45		ThP-IV4.2
<i>Complete Heterogeneous Self-Reconfiguration: Deadlock Avoidance Using Hole-Free Assemblies</i> , pp. 404-410.		
Pickem, Daniel		Georgia Inst. of Tech.
Egerstedt, Magnus		Georgia Inst. of Tech.
Shamma, Jeff S.		Georgia Inst. of Tech.
14:30-15:45		ThP-IV4.3
<i>Controlling Formation of Autonomous Agents with Distance Disagreements</i> , pp. 411-416.		
Garcia de Marina, Hector		Univ. of Groningen
Cao, Ming		Univ. of Groningen
Jayawardhana, Bayu		Univ. of Groningen
14:30-15:45		ThP-IV4.4
<i>Minimum Robust Sensor Placement for Large Scale Linear Time-Invariant Systems: A Structured Systems Approach</i> , pp. 417-424.		
Liu, Xiaofei		Carnegie Mellon Univ.
Pequito, Sérgio		Inst. Superior Técnico - Carnegie Mellon Univ.
Kar, Soumya		Carnegie Mellon Univ.
Mo, Yilin		Carnegie Mellon Univ.
Sinopoli, Bruno		Carnegie Mellon Univ.
Aguiar, A. Pedro		Faculty of Engineering, Univ. of Porto (FEUP)
14:30-15:45		ThP-IV4.5
<i>Consensus Control for Multi-Agent Systems with a Faulty Node</i> , pp. 425-432.		
Terelius, Håkan		Royal Inst. of Tech.
Shi, Guodong		Royal Inst. of Tech.
Johansson, Karl H.		Royal Inst. of Tech.
14:30-15:45		ThP-IV4.6
<i>Optimal Multiple Controlling Nodes Problem for Multi-Agent Systems Via Alt-PageRank</i> , pp. 433-438.		
Tsumura, Koji		Univ. of Tokyo
Yamamoto, Hiroki		The Univ. of Tokyo