

MODELING, IDENTIFICATION AND CONTROL

A Nordic Open Access Research Journal

ISSN 0332-7353 (Printed version) ISSN 1890-1328 (Electronic version)

Editor

Geir Hovland, Department of Engineering, Mechatronics Group, University of Agder,
Serviceboks 509, N-4898 Grimstad.

Associate Editors

Morten Breivik, Kongsberg Maritime: Marine Control Systems, Ship Control.
Morten Hovd, Norwegian University of Science and Technology: Model Predictive Control, Robust Control.
Bernt Lie, Telemark University College: Process Modeling and Control, MPC, State and Parameter Estimation.
Per Johan Nicklasson, Narvik University College: Aerospace and Satellite Modeling and Control.
Pål Johan From, Norwegian University of Life Sciences: Robotics, Path Planning, Singularities.

Sponsoring Organizations

Norwegian Society of Automatic Control (NFA), Kristiansand - Lars A. Ekorner. (If your organization is interested in sponsoring MIC, please contact the editorial team.)

Publisher

Norwegian Society of Automatic Control, Kristiansand, Norway.

Correspondence

All correspondence to: MIC, NFA - Kjøita 42, N-4630 Kristiansand, Norway.
Website: <http://www.mic-journal.no>, e-mail: editor@mic-journal.no

Publication Schedule and Subscription Information

Published quarterly.

MIC STATISTICS JULY 2011

OVERALL STATISTICS SINCE 1980 INCLUDING THE CURRENT ISSUE

Total Number of Articles	472
Number of Unique Authors	508
Number of Unique Research Institutions	125
Number of Authors with More than 1 Article	130
Number of Authors with More than 2 Articles	70

TOP AUTHORS

Author	Contributions
1. Jens G. Balchen 1980-2003	50
2. Olav Egeland 1984-2007	31
3. Thor Inge Fossen 1988-2010	30
4. Bjarne A. Foss 1983-2007	27
5. David Di Ruscio 1989-2009	17
6. Sigurd Skogestad 1991-2009	15
7. Rolf Henriksen 1980-2000	14
7. Bernt Lie 1987-2010	14
9. Tor A. Johansen 1992-2009	11
10. Morten Hovd 1991-2010	10

TOP INSTITUTIONS

Author	Contributions
NTNU, ITK	195
SINTEF	59
NTNU, Other Dep.	37
Telemark (HiT)	37
IFE	23
NTNU, Chem. Eng.	18
ABB	15
Norsk Hydro	14
FFI	13
CeSOS	13

TOP DOWNLOADS 03.07.2011

Author	DOI
1. F. Haugen	mic.2010.3.1
2. S. Skogestad	mic.1997.3.1
2. T.Perez and T.I. Fossen	mic.2008.3.2
4. T.Perez and T.I. Fossen	mic.2008.1.1
4. S.Sørensen, et al.	mic.2011.1.1
6. M.Breivik and G.Sand	mic.2009.3.2
6. S.Skogestad	mic.2004.2.2
6. J.G.Balchen, et al.	mic.1980.3.1
9. D.Di Ruscio	mic.2010.4.3
10. T.I. Fossen and Ø.N.Smogeli	mic.2004.4.1
10. T.Brogårdh	mic.2009.3.7

TOP CITED ARTICLES

ISI citations: Author	DOI
52: T.Larsson and S.Skogestad	mic.2000.4.2
46: J.G.Balchen, et al.	mic.1980.3.1
33: T.A.Johansen and B.A.Foss	mic.1992.1.3
26: D.Kugiumtzis et al.	mic.1994.3.9
25: S.Skogestad	mic.1997.3.1
24: H.Berntsen et al.	mic.1981.4.1
22: B.Lillekjendlie	mic.1994.4.2
21: S.Grimsen	mic.1987.1.8
20: Z.Kowalik	mic.1981.4.2
19: D.Slagstad	mic.1990.4.1
19: W.Ebenhh	mic.1980.2.2
19: L.A. Zadeh	mic.1994.3.9
17: T.Ozanian	mic.1995.2.1
17: D.Slagstad	mic.1981.3.1

WEBSITE STATISTICS

Month	PL	UV	FV	RV	DOI 1	DOI 2	ISI 1	ISI 2	PL	Page Loads
July 2011	1814	973	795	178	399	0.85	1009	2.16	UV	Unique Visitors
June 2011	2058	1039	873	166	369	0.79	998	2.14	FV	First Visitors
May 2011	2090	1149	959	190	369	0.79	991	2.12	RV	Returning Visitors
Apr 2011	2434	1209	1034	175	355	0.76	982	2.10	DOI 1	Number of DOI forward links
Mar 2011	2616	1301	1096	205	338	0.73	972	2.08	DOI 2	DOI forward links per article
Feb 2011	2357	1124	935	189	324	0.70	955	2.04	ISI 1	Number of ISI citations
Jan 2011	2218	1132	944	188	287	0.62	951	2.04	ISI 2	ISI citations per article
Dec 2010	2025	1031	875	156	286	0.61	944	2.03		
Nov 2010	3573	1500	1224	276	285	0.61	944	2.03		
Oct 2010	2713	1435	1157	278	279	0.60	937	2.02		
Sep 2010	2414	862	655	207	277	0.60	930	2.01		
Aug 2010	1753	807	586	221	273	0.59	925	2.01		

GUEST EDITORIAL

I am honored to chair the academic session of the fourth Engineering Conference Southern Norway 2011. I express my sincere gratitude to all participants and to the organizing committee of the conference for their contributions. The conference gathered individual speakers who are also the world's most respected authorities on Systems, Modelling, Control and Robotics. This special issue comprising of three papers is focused on the various aspects and fundamental concepts of control systems and its applications. The purpose of the issue is to communicate and present some of the latest research carried out in this area while reviewing other important recent developments in the field. The papers are organized as follows.

The first paper in this special issue is Mean-Square Filtering for Polynomial System States Confused with Poisson Noises over Polynomial Observations, by Michael Basin, Juan J. Maldonado and Hamid Reza Karimi. This work addresses the general case of nonlinear polynomial states and observations with white Poisson noises. It derives the Ito differentials for the mean-square estimate and error variance corresponding to the stated filtering problem. The procedure for obtaining an approximate closed-form finite-dimensional system of the filtering equations for any polynomial state over observations with any polynomial drift is then established.

The second paper in this special issue is Semi-decentralized Strategies in Structural Vibration Control, by Francisco Palacios-Quinonero, Josep Maria Rossell and Hamid Reza Karimi. This work describes the main ideas involved in the design of overlapping and multi-overlapping controllers via the Inclusion Principle in the context of the Structural Vibration Control of tall buildings under seismic excitation. A detailed theoretical background on the Inclusion Principle and the design of overlapping controllers is provided. Overlapping and multi-overlapping LQR controllers are designed for a simplified five-story building model.

The third paper in this special issue is Abstraction of Dynamical Systems by Timed Automata, by Rafael Wisniewski and Christoffer Sloth. This work shows a method for abstracting dynamical systems, where level sets of Lyapunov functions are used to generate the partitioning of the state space. The authors propose to partition the state space using an entire family of functions. The properties of these functions ensure that the discrete model captures the behaviors of a dynamical system by generating appropriate equivalence classes of the states. These equivalence classes make up the partition of the state space. This method allows for application of methods for model checking. Consequently, it opens the possibility of carrying out the verification of reachability and timing requirements, which by classical control methods is impossible.

The guest editor would like to thank all the authors of this special issue for contributing the high quality papers and we hope the reader will share our joy and find this special issue very useful. Finally, a special thanks is extended to the Editor-in-Chief, Prof. Geir Hovland, for giving us this great opportunity of organizing this special issue.

*Professor Hamid Reza Karimi
August 1, 2011*

This issue is the result of the Engineering Conference Southern Norway, which was organised at Campus Grimstad on May 12, 2011. On the following two pages the program for the conference and some pictures taken during the presentations are presented. Most of the presentation slides for the conference are also available at www.mic-journal.no/ECSN2011. A special issue based on a conference like ECSN2011 is an interesting format for MIC. It makes it possible to combine contributions from academics (who often need a publication to justify the travel costs) with contributions from industry. By including only a few selected papers for publication in MIC, it is not a strict requirement to write a paper to present at the conference, and the conference organisers are relieved of the burden of producing peer-reviewed conference proceedings for the entire conference. The MIC journal aims to continue using this format in the future, and suggestions for special issues based on conferences can be sent to the members of the editorial board.

*Editor Geir Hovland
August 1, 2011*

The Engineering Conference Southern Norway 2011:

Academic Session:

1. Prof. Hamid Reza Karimi, University of Agder, Opening speech



2. Prof. Michael Basin, Autonomous University of Nuevo Leon, Mexico: Mean-Square Filtering for Polynomial States with Poisson Noises



3. Dr. Thomas Jagalski, University of Bremen, Germany: Autonomous Control of a Shop Floor Based on the Nest Construction Behavior of Wasps



4. Prof. Rafael Wisniewski, Aalborg University, Denmark: Verification of Control Systems by Timed Automata



5. Prof. Michael Basin, Autonomous University of Nuevo Leon, Mexico: Applying Sliding Mode Technique to Optimal Filter and Controller Design

6. Prof. Josep M. Rossell, Universitat Politcnica de Catalunya, Spain: Semi-decentralized Strategies in Structural Vibration Control



7. Prof. Mogens Blanke, Technical University of Denmark, Copenhagen: Fault-tolerant Systems concepts and design methods



Industry Session:

1. Trygve Hanssen, Elkem: Information Technology and Melting Furnaces

2. Ole Klingsheim, ConocoPhillips: Integrated Operations

3. Tore Berg, National Oilwell Varco: NOV Drilling Simulator



5. Kyle Brennan, Agder Energy: Fjeldskår Open Wind Park, Making production and wind measurement data available for research



4. Jan-Egil Wagnild, Marine Cybernetics: 3rd Party Testing of Drilling Control Systems



6. Brit Sterud, GE Healthcare Lindesnes Fabrikker: Change of Information Requirements by Centralisation of Operations in Pharmaceutical Industry



