



2012
No. 5
October

Newsletter

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Control Engineering Textbook
Prize (page 5)**

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Call for Nominations - The Harold
Chestnut Control Engineering Textbook
Prize

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Call for IFAC Fellow Nominations
2014

Analysis and Design of Hybrid Systems (ADHS 12) 4th IFAC Conference

Eindhoven, The Netherlands, 6 – 8 June 2012



The 4th triennial IFAC Conference on Analysis and Design of Hybrid Systems (ADHS 12) took place in Eindhoven, the Netherlands at the campus of Eindhoven University of Technology from June 6 to 8, 2012. The conference was co-organized by Eindhoven University of Technology and Delft University of Technology. This ADHS conference was sponsored by the IFAC Technical Committee on Discrete Event and Hybrid Systems, by NWO (the Netherlands Organization for Scientific Research), and by the companies ASML and DEMCON.

The ADHS series already has a long and rich history. In fact, ADHS 12 was the fourth conference in this series after ADHS03 in Saint Malo (France), ADHS06 in Alghero (Italy), and ADHS09 in Zaragoza (Spain). In addition, the ADHS series was preceded by the successful conference series on Automation of Mixed Processes: ADPM92 in Paris (France), ADPM94 in Brussels (Belgium), ADPM98 in Reims (France) and ADPM2000 in Dortmund (Germany). The ADHS conferences have always focused on the broad area of hybrid dynamical systems in all its aspects. A special focus in ADHS 12 was placed on networked control systems, as they provide a further stimulus to the ADHS research area and as hybrid modeling and analysis methods are relevant to many problems in networked control.

The ADHS 12 conference featured three plenary lectures of world-class experts on hybrid systems that shared their views on the lively and challenging research area of hybrid systems. On the first day of the conference, Andrew Teel (University of California, Santa Barbara) gave the lecture „Stochastic Hybrid Inclusions: The Interplay Between Worst-Case and Random Effects.“

On the second day, George Pappas (University of Pennsylvania, Philadelphia, USA) gave a presentation on „Compositional Control Over Time-Triggered Wireless Networks.“ Finally, Alberto Bemporad (IMT Institute for Advanced Studies, Lucca, Italy) assessed the progress and lessons learned in the field in the last fifteen years in his lecture „Hybrid Modeling, Analysis, and Optimization-Based Control.“ In addition to the three plenary lectures, there were two parallel tracks of presentations, which were selected from over 100 submitted papers based on an extensive review process. More specifically, 72 papers were presented in 18 sessions (of which 6 were invited sessions) covering topics ranging from formal methods, stochastic hybrid systems, stability of hybrid systems, event-triggered control, networked control systems, variable structure methods, to applications including traffic control and robotic and vehicular networks.

The conference had 106 registered participants. In total, 21 different countries were represented, with the largest delegations being from France, the Netherlands, Germany, Italy, and the USA.

In conclusion, it is safe to say that the conference workshop was a great success, with good international attendance, lively interaction and discussions between the participants, and very positive feedback from the attendees. We would like to thank all the participants, and in particular the plenary speakers, authors, IPC members, and reviewers for their contributions to a very interesting program, and making the event a success.

Maurice Heemels and Bart De Schutter
General Chairs ADHS 12

This Newsletter may be reproduced in whole or in part. We encourage reprinting in national and local automatic control periodicals.

Acknowledgement to IFAC would be appreciated.

WHO IS WHO IN IFAC

Henk Nijmeijer
Council member 2011 - 2014



Henk Nijmeijer (born in 1955) obtained his MSc degree and PhD-degree in mathematics from the University of Groningen, Groningen, the Netherlands, in 1979 and 1983, respectively. From 1983-2000 he was affiliated with the Department of Applied Mathematics at the University of Twente, Enschede, the Netherlands. Since 1997 he was also affiliated on a part-time basis with the Department of Mechanical Engineering of the Eindhoven University of Technology, Eindhoven, the Netherlands. Since 2000, he is a full professor at Eindhoven, and chairs the Dynamics and Control group.

Nijmeijer has published a large number of journal and conference papers, and several books, including the classic *Nonlinear Dynamical Control Systems* (Springer, 1990, co-author A.J. van der Schaft), with A. Rodriguez, *Synchronization of Mechanical Systems* (World Scientific, 2003) with R.I. Leine, *Dynamics and Bifurcations of Non-Smooth Mechanical Systems* (Springer-Verlag, 2004), and with A. Pavlov and N. van de Wouw, *Uniform Output Regulation of Nonlinear Systems* (Birkhauser 2005). He was editor-in-chief of the *Hindawi Journal of Applied Mathematics* until 2009, as well as corresponding editor

of the *SIAM Journal on Control and Optimization*, and board member of many publications, including *International Journal of Control, Automatica, Journal of Dynamical Control Systems, International Journal of Bifurcation and Chaos, International Journal of Robust and Nonlinear Control, Journal of Nonlinear Dynamics and the Journal of Applied Mathematics and Computer Science, and Hybrid Systems*.

Nijmeijer is a fellow of the IEEE since 2000 and was awarded the IEEE Heaviside premium in 1990. He is an honorary knight of the 'Golden Feedback Loop' (NTNU) since 2011. In the 2008 research evaluation of the Dutch mechanical engineering departments the Dynamics and Control group was evaluated as excellent in regards to all aspects (quality, productivity, relevance and viability). His research interests are in the broad scope of dynamics and control and their applications.

Programmable Devices and Embedded Systems

PDES 2012

11th IFAC/IEEE International Conference

Brno, Czech Republic, 23 – 25 May 2012

The 11th IFAC/IEEE International Conference on Programmable Devices and Embedded Systems was held from 23 to 25 May in Brno, Czech Republic. The conference was sponsored by IFAC Technical Committee 4.1 and co-sponsored by Czechoslovakian section of IEEE. It was organized jointly by Brno University of Technology (Czech Republic), Technical University of Ostrava (Czech Republic) and Silesian Technical University in Gliwice (Poland). The aim of the conference was to review the state of the art in the field of programmable devices, control systems, tools techniques and methods.

After the opening ceremony the conference started by a plenary session. The plenary speech was presented by Mr. Christian Diedrich (Otto-von-Guericke Universität, Magdeburg, Germany) on „Isochronous Communication and Device Certification in Automation.“

The topics of the conference were:

- Industrial Programmable Controllers, Industrial PC's and PLC's
- Field Programmable Logic and High End Design Means
- Embedded Systems, Microprocessors and Microcontrollers
- Signal Processing
- Reliability and Safety of Elements, Circuits and Systems
- Communication for Control Systems

- Industrial Applications
- Biomedical Systems
- Control Theory

The International Program Committee has received 143 authors' registrations and there have been 113 papers submitted for the review process. For the conference there have been 78 accepted papers including presentations of outcomes of several projects funded by the ARTEMIS Joint Undertaking. After the careful analysis and review process 55 papers have been selected for presentation in regular sessions and in one poster session. At the conference there were participants from 13 countries.

The presentations were divided into 13 technical sessions of which 2 sessions were devoted to industry related topics.

On May 23rd a round table discussion was held in the evening. The discussion was led by Prof. Frantisek Zezulka (IPC chair), the discussion was aimed to application of advanced theories and novel solutions in industrial environment.

The organizers would like use this opportunity to express their thanks to all contributors and sponsors, thanks to their contribution the conference was not only a technical conference but also a fruitful and successful social event.

Frantisek Zezulka, IPC chair

Mathematical Modelling 7th MATHMOD

Vienna, Austria, 14 – 17 February 2012

MATHMOD 2012, which was held in Vienna, Austria at Vienna Technical University from 14-17 February 2012 and attended by nearly 375 scientists and engineers, gathered scientists and engineers using or developing models or interested in the development or application of various modelling tools and offered them the opportunity to present ideas, methods and results and to discuss their experiences or problems with experts of various areas of specialisation. Some 270 lectures and some 70 poster presentations offered an opportunity to present ideas, methods and results and discuss experiences or problems with experts of various areas of specialisation.

Comparison of modelling approaches, model simplification, modelling uncertainties, and port-based modelling are discussed. Besides applications of modelling in traditional areas such as engineering and natural sciences also new ones are of growing importance.

The topics to be discussed during the conference reflected also the fact that mathematical modelling is now used by more and more in industries. Numerical aspects are now often already part of the modelling process and, automation of modelling and the use of IT are of growing importance. All these facts can be recognized on the one hand in the many MATHMOD mini-symposia, which were organized by experts in various specific areas. The many sessions where submitted contributions were presented and discussed show the

broad variety of the MATHMOD conference.

Moreover, it is to be observed that traditional classifications such as theory, applications, numerics, computer science, simulation etc. are becoming more and more obsolete. Scientific work often presents new results in several areas. A look at the 24 MATHMOD-mini-symposia illustrates this quite well and underlines the fact that working teams are now often already international.

Also the 12 invited lectures reflect to some extent this wide spectrum of important topics of current interest ranging from applications e.g. in engineering and biology to methodological and theoretic aspects of various types, as well as the fact that scientific work now usually belongs to more than one area of classification.

Four contribution types have been provided. The classical contribution types, either submitted or part of a mini-symposium were accepted by general peer review based on an extended review abstracts or by review of the mini-symposium organisers, respectively. MATHMOD 2012 also continued with Work-in-Progress Contribution, allowing for presentation of recent developments and work in progress in all areas of modelling and simulation. And last but not least, Student Contributions which gave e.g. Ph.D students a chance to present their own work.

Preprints were available at the beginning of the

conference which contained all contributions. Further, proceedings based on review of the full preprint contributions are to be published on IFAC-PapersOnLine.net, the web publication server of IFAC which is open access in nature. Moreover, these contributions will be indexed in SCOPUS, etc.

As organizers and editors we wish to express our sincere thanks to all who have assisted us by making the idea of this symposium known within the scientific community. We want to especially thank TU Vienna and its Institute for Analysis und Scientific Computing, who acted as sponsor and IFAC as main co-sponsor and publisher of web proceedings and all other scientific societies who acted as co-sponsors. We want to thank especially the members of the International Program Committee who assisted us in the two reviewing processes – first for the conference and after it for publication on IFAC PapersOnLine. Further, we want to thank all colleagues who have done an excellent job by putting together MATHMOD mini-symposia devoted to one main topic. Last but not least we would like to thank IFAC for cooperation with a special publication arrangement, and the local ARGESIM team for their support in preparation of the Preprints.

Inge Troch and Felix Breitenacker
IPC chair and NOC chair



FORTHCOMING EVENTS

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Title	2012	Place	Further Information
IFAC Workshop Multi Vehicle Systems – MVS	October 03 – 05	Espoo Finland	http://mvs2012.aalto.fi/ e-mail: mvs2012@aalto.fi
IFAC Workshop Engine and Powertrain	October 23 – 25	Paris France	http://www.ecosm12.org
Control Simulation and Modelling Latin American Control Conference – LACC- - in cooperation with IFAC	October 23-26	Lima Peru	http://congreso.pucp.edu.pe/clca-2012/
IFAC Workshop Maintenance for Dependability, Asset Management and PHM - A-MEST	November 22 – 23	Seville Spain	http://www.amest2012.com/ e-mail: adolfo@us.es
IEEE Int. Conf. (cosponsored by IFAC) Connected Vehicles and Expo (ICCVE)	December 05 – 09	Beijing China	http://www.iccve.org e-mail: not yet available
Title	2013	Place	Further Information
IFAC Symposium System Structure and Control	February 04 – 06	Grenoble France	http://www.gipsa-lab.grenoble-inp.fr/colloque/sssc2013/ e-mail: sssc2013@gipsa-lab.grenoble-inp.fr
IFAC Conference Biorobotics	March 27 – 29	Sakai Japan	http://ifac2013.shita.jp/index.html e-mail: not yet available
IFAC Symposium Mechatronic Systems	April 10 – 12	Hangzhou China	http://sklofp.zju.edu.cn/ifac2013/ e-mail: not yet available
IFAC Workshop Covergence of Information Technologies and Control Methods with Power Systems	May 22 – 24	Cluj-Napoca Romania	http:// not yet available e-mail: not yet available
IFAC Workshop Workshop on Intelligent Manufacturing Systems (IMS 2013)	May 22 – 24	São Paulo Brazil	http:// not yet available e-mail: not yet available
IFAC Workshop International Stability, Technology and Culture (SWIIS 2013)	June 06 – 08	Prishtina Kosovo	http://www.ubt-uni.net/swiis2013 e-mail: not yet available
American Control Conference - in cooperation with IFAC	June 17 – 19	Washington, D.C. USA	http://a2c2.org/conferences/acc2013/
IFAC Conference Manufacturing Modelling, Management, And Control (MIM 2013)	June 19 – 21	St. Petersburg Russian Fed.	http://mim2013.org/ e-mail: noc@mim2013.org
IFAC Symposium Intelligent Autonomous Vehicles - IFAC-IAV 2013	June 26 – 28	Gold Coast City Australia	http://www.iav2013.org/ e-mail: l.vlacic@griffith.edu.au
IFAC Workshop Periodic Control Systems- (PSYCO'2013)	July 03– 05	Caen France	http://psyco-2013.sciencesconf.org/ e-mail: psyco-2013@sciencesconf.org
IFAC Workshop Adaptation and Learning in Control and Signal Processing (ALCOSP 2013)	July 06 – 08	Caen France	http://www.ubt-uni.net/swiis2013 e-mail: alcosp-2013@sciencesconf.org
IFAC IFORS, IMACS, IFIP Symposium Large Scale Complex Systems: Theory and Applications - 13th	July 07 – 10	Shanghai China	http://lss2013.sjtu.edu.cn e-mail: lss2013@sjtu.edu.cn
European Control Conference (ECC 13) - in cooperation with IFAC	July 17 – 19	Zürich Swiss	http://www.ecc13.ch/ e-mail: secretariat@ecc13.ch

FORTHCOMING EVENTS (ctd.)*

IFAC Conference Modelling and Control in Agriculture - Horticulture and Post Harvest Industry (AGRICONTROL 2013)	August 06 – 08	Espoo Finland	http://agricontrol2013.automaatioseura.com/ e-mail: not yet available
IFAC/(IFIP/IFROS/IEA) Symposium Analysis, Design, and Evaluation of Human-Machine Systems – HMS 2013	August 11 – 15	Las Vegas USA	http://www.cs.wright.edu/ifac/ e-mail: not yet available
IFAC Symposium Mining, Mineral and Metal Processing - MMM 2013	August 25 – 27	San Diego, California USA	http://not yet available e-mail: not yet available
IFAC Symposium Advances in Control Education - ACE 2013	August 28 – 30	Sheffield UK	http://ace2013.group.shef.ac.uk/ e-mail: not yet available
IFAC Symposium Automatic Control in Aerospace - ACA 2013	September 02 – 06	Wuerzburg Germany	http://www7.informatik.uni-wuerzburg.de/aca2013 e-mail: aca2013@informatik.uni-wuerzburg.de
IFAC Conference Intelligent Control and Automation Science ICONS 2013	September 02 – 04	Chengdu China	http:// not yet available e-mail: not yet available
IFAC Symposium Nonlinear Control Systems - NOLCOS	September 04 – 06	Toulouse France	http://www.laas.fr/NOLCOS2013 e-mail: nolcos2013@laas.fr
IFAC Symposium Advances in Automotive Control AAC 2013	September 04 – 07	Tokyo Japan	http://www.sice.or.jp/IFAC-AAC2013 e-mail: ifac-aac2013@c-linkage.co.jp
IFAC Conference Management and Control of Production and Logistics – MCPL 2013	September 12 – 14	Fortaleza Brazil	http:// not yet available e-mail: not yet available
IFAC Conference Programmable Devices and Embedded Systems PDeS 2013	September 25 – 27	Velké Karlovice Czech Republic	http:// not yet available e-mail: not yet available
IFAC Symposium Computer Applications in Biotechnology (CAB 2013)	December 16 – 18	Mumbai India	http:// not yet available e-mail: not yet available
IFAC Symposium Dynamics and Control of Process Systems (DYCOPS 2013)	December 18 – 20	Mumbai India	http:// not yet available e-mail: not yet available
Title	2014	Place	Further Information
19th IFAC World Congress	August 25-29	Cape Town South Africa	http://www.ifac2014.org/ email: not yet available
Title	2015	Place	Further Information
IFAC Symposium System Identification – SYSID 2015	October 19 – 21	Beijing China	http://not yet available e-mail: not yet available

*as this issue of the Newsletter is being prepared very early, due to the date of the Council- and Related Meetings in Gifu, in September 2012, there will be some events which have meanwhile been approved but could not be included here. This will be done in the December issue of the NL. Meanwhile, you can find a complete list of approved IFAC events on the IFAC website at:

<http://www.ifac-control.org/events/forthcoming>

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Call for Nominations for The Harold Chestnut Control Engineering Textbook Prize

The Harold Chestnut Control Engineering Textbook Prize Selection Committee of the International Federation of Automatic Control (IFAC) calls for nominations for the Triennial Harold Chestnut Prize.

The Prize is awarded to the author(s) of a control engineering textbook that has most contributed to the education of control engineers. The Prize, consisting of a monetary award and a certificate, will be presented at the Closing Ceremony of the 19th IFAC World Congress that will be held in Cape Town, South Africa in 2014.

To be considered, nominations must relate to books that are:

1. written in one of the official IFAC languages, preferably in English; and
2. published between September 1, 2005 and July 31, 2011.

Nominations should include:

- a) A nomination letter that states the full title, name(s) and address of the author(s), name of the textbook, date of publication, and name and address of the publisher;
- b) Evidence of the contribution/s of the textbook to the education of control engineers; and
- c) Any additional information that may support the Judging Process, as per the selection criteria listed below. It is important to note that only those book reviews in IFAC journals (Automatica, Control Engineering Practice, Engineering Applications of Artificial Intelligence, Journal of Process Control, Mechatronics), IFAC affiliated journals, journals of IFAC NMOs, and other reputable academic journals (e.g. IEEE transactions) will be considered.

All nominations will be evaluated using the selection criteria:

- Originality and innovation
- General content in terms of the topics covered
- Clear applications to real problems
- Style:
 - presentation, readability and clarity in relation to the content
- Meeting educational objectives:
 - Clear statement of what students should be able to do
 - Worked examples and exercises
 - Software support
 - Multi-disciplinary examples (cross-boundary applications of control)
 - Use by practicing engineers

To be considered, nominations must be received by close of business on September 30, 2013. Only submissions on a CD (containing word, pdf, html, excel, power point and/or image files) will be accepted. Please note that all the supporting evidence should also be presented in electronic format and stored on the submitted CD.

If the Prize-winning textbook is written by more than one author, the monetary component of the Prize will be equally split among the authors with each author receiving a certificate. The winner(s) will be notified well in advance, to allow them to plan their attendance at the Award Ceremony to be held during the 19th IFAC World Congress, Cape Town, South Africa in 2014.

Please submit nominations to:

Bozenna Pasik-Duncan, Professor
Chair, IFAC Harold Chestnut Control Engineering Textbook Prize Selection Committee
Department of Mathematics
University of Kansas
1460 Jayhawk Boulevard
Lawrence, KS 66045-7594, USA
Phone: +1/785-864-5162 Fax: +1/785-864-5255
bozenna@math.ku.edu
<http://www.ifac-control.org/awards/harold-chestnut-control-engineering-textbook-prize>

Call for 2014 IFAC Fellow Nominations

IFAC is seeking nominations for 2014 IFAC Fellows. The IFAC Fellow award provides a distinction of excellence in the Federation and is conferred to on a small number of outstanding scientists or engineers by the IFAC Council, based on the proposal of the Fellow Selection Committee (FSC). With the appointment as an IFAC Fellow, IFAC honors outstanding contributions with a high impact in the fields of interest of IFAC in the role as a Scientist, Engineer, Technical Leader or Educator. These contributions may be technical publications, patents, control solutions, products, software, and leadership in research, development and education.

Any control scientist or engineer (with the exceptions listed below) can be a candidate for the title of an IFAC Fellow. Past involvement in IFAC activities, publications and events is desirable and an asset but not absolutely mandatory. For a list of IFAC Fellows elected so far, please go to the IFAC website at: <http://www.ifac-control.org/awards/ifac-fellows>.

Current members of the Fellow Selection Committee (FSC) are not eligible to be considered as Fellow Candidates; in addition, current IFAC Council members are not eligible to be nominated for selection as Fellows. IFAC Fellow candidates must be proposed by nominators.

Nominators

Any person is eligible to serve as a nominator with the exception of members of the Fellows Selection Committee (FSC), and IFAC Council Members. The nominator is responsible for the information provided on the candidate. The nominator is asked to read the Nominator Information, to complete the Nomination Form according to the requirements given below, and to alert the persons indicated as references that they have been named referees.

If you plan to submit an IFAC Fellow Nomination Form, please find instructions below to assist you in this nomination process. Strict adherence to this procedure is essential; otherwise, a candidate may be placed at a serious disadvantage and possibly even excluded from consideration.

Fellow Nomination Forms must reach the IFAC Secretariat (by e-mail: secretariat@ifac-control.org) by

January 8, 2013

References

Each nomination must be supported by at least three, but no more than five references from internationally reputed experts in the field who are aware of the Candidate's contributions. These referees need not be Fellows themselves. It is to be noted that the choice of references is important for the success of the candidate's nomination. Members of the IFAC Council and the Fellow Selection Committee are not eligible to serve as referees. If you have been asked to act as a reference, please read the Reference Information and complete the Reference Form.

Fellow Reference Forms must reach the IFAC Secretariat (by e-mail: secretariat@ifac-control.org) by

February 1, 2013

The Call for Nominations, the Nominator Information and Nomination Form and the Reference Information and Reference Form are available for download at the IFAC website at

<http://www.ifac-control.org/awards/fellow-nominations-2014>

The completed forms must be submitted directly to the IFAC Secretariat. A nomination or reference is valid only if confirmed by the IFAC Secretariat.

New Fellows Announcement

The election of newly elected Fellows will be announced shortly after the completion of the vote taken by the IFAC Council in July 2013. IFAC will inform all successful candidates and their nominators of the election results by e-mail and first class mail. Nominators of unsuccessful candidates will be notified by e-mail. The new elected IFAC Fellows will be honored in a ceremony at the 2014 IFAC World Congress.