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Newsletter

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Automatica
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Engineering Applications of Artificial Intelligence
http://www.elsevier.com/locate/engappai

Journal of Process Control
http://www.elsevier.com/locate/jprocont

Annual Reviews in Control
http://www.elsevier.com/locate/arcontrol

Journal on Mechatronics
http://www.elsevier.com/locate/mechatronics

Confirmation of Affiliate Membership REMINDER

In the last issue of the IFAC Newsletter, Issue 1, February 2011, we invited IFAC Affiliates to renew their Affiliate membership by confirming it via the *Confirmation of Affiliate Membership Form*, which is available on the IFAC website at

http://www.ifac-control.org/forms/affiliateconfirmation

If we do not receive your confirmation, your subscription to the IFAC Newsletter will expire by

July 2011

IFAC Fellows 2010, continued

Tyrone E. Duncan

Tyrone E. Duncan received the BEE degree from Rensselaer Polytechnic Institute in 1963 and the MS and PhD degrees from Stanford University in 1964 and 1967, respectively. He has held regular positions at the University of Michigan (1967-1971), the State University of New York, Stony Brook (1971-1974), and the University of Kansas (1974-present) where he is Professor of Mathematics. He has held visiting positions at the University of California, Berkeley (1969-1970), the University of Bonn, Germany (1978-1979), and Harvard University (1979-1980) and shorter visiting positions at numerous other institutions throughout the world. Dr. Duncan has done research in stochastic analysis, stochastic control and filtering, information theory, stochastic systems and related topics. Dr. Duncan is a member of the editorial boards of Communications on Stochastic Analysis, and Risk and Decision Analysis and was on the editorial board of SIAM Journal on Control and Optimization (1994-2007) as an Associate Editor and a Corresponding Editor. He is a member of AMS, MAA, and SIAM and an IEEE Fellow and IFAC Fellow.

Ruwei Dai

Ruwei Dai, a 1955 graduate of Beijing University, has been engaged in the research of engineering control theory and optimization control theory

since the 1950s. He took the lead in China by proposing, and carrying out, the pattern recognition discipline in the 1970s. In 1981, Dai organically combined statistical pattern recognition and syntax pattern recognition and created a recognition method of semantics and syntax pattern.

Dai also conducted research on the application of an artificial neural network through studying conducted pattern recognition and associated memory and visualized thinking. He provided a unified model integrating pattern description and knowledge expression and further put forward a knowledge system design combining various models, such as physical mark processing, qualitative physics, visualized knowledge and artificial neural network.

Wook Hyun Kwon

Professor Kwon received B.S. and M.S. degrees in electrical engineering from Seoul National University in 1966 and 1972, respectively, and a Ph D. degree from Brown University in 1975. He was a research associate at Brown University (1975-1976), an adjunct assistant professor at the University of Iowa (1976-1977). He has been with Seoul National University (1977-2008), where he is currently a professor emeritus. He was a visiting assistant professor at Stanford University (1981-1982). He has been a chair professor of DGIST (Daegu Gyeongbuk Institute of Science and Technology) since April 2010.

Professor Kwon has published about 150 international journal papers and approximately 260 international conference papers, mostly in the areas of predictive controls, time-delayed system, FIR filtering, and real-time computer applications for automation. He introduced for the first time the comprehensive frameworks and guaranteed stability results on receding horizon controls for linear systems. He also achieved three major contributions for time delay systems; an H-infinity control, a very useful inequality to generate general robust stabilizing controls, and a reduction method for input delay systems. He has published seven journal papers that have received more than 100 SCI citations in the above areas. A paper on the robust stabilizing control with the inequality in 2001 has the highest SCI citation, 605, as of December 31, 2010. He authored a graduate text book „Receding Horizon Control: Model Predictive Control for State Models" which was published by Springer in July 2005.

Professor Kwon has supervised 127 graduate students including 55 Ph.D students. He motivated graduate students to have entrepreneurship so that some of them founded ten start-up companies, whose total sale figures reached one billion US dollars in 2010.

Intelligent Autonomous Vehicles - IAV
IFAC Symposium
Lecce, Italy, September 6 - 8, 2010

The IFAC Intelligent Autonomous Vehicles IAV Symposium is the leading IFAC event that has been related to Intelligent Autonomous Vehicles since 1993. The symposium is held every three years and is organized by the IFAC Technical Committee 7.5 IAV. The seventh edition (2010) was held in Lecce, Italy on September 6, 7 and 8, 2010. Past editions were organized in 1993 (Southampton, UK), 1995 (Espoo, Finland), 1998 (Madrid, Spain), 2001 (Sapporo, Japan), 2004 (Lisbon, Portugal) and 2007 (Toulouse, France).

The 7th IAV Symposium addressed generic methodologies and techniques applicable to intelligent autonomous vehicles including mobile robots on land, at sea, in air or in space, multivehicle systems and networks of autonomous vehicles. Symposium topics included a broad spectrum of issues such as sensing, sensor integration and perception, architectures, planning, mission and motion control, navigation and cooperative navigation techniques, SLAM, teleoperation, human and vehicle interaction and practical applications. Due to its interdisciplinary nature, the Symposium distinguishes itself from other events, which focus on specific kinds of vehicles, hence fostering the cross-fertilization of ideas among different application areas.

Out of 150 submitted manuscripts from 31 countries, 105 papers were accepted and presented during the Symposium. The contributions were selected based on peer review.

The ten most common keywords were:

- Vehicles
- Intelligent Control
- Estimation Algorithms and Theory
- Navigation Systems
- Sensor Fusion and Systems
- Path Planning
- Marine Systems
- Robot Navigation Programming and Vision
- Autonomous Vehicles
- Autonomous Mobile Robots

The Symposium was organized in three parallel sessions. A Plenary Session took place each morning hosting keynote speakers from the areas of land, airspace and marine systems.

Plenary Talks were given by the following persons:

- **Prof. Alberto Broggi**, University of Parma, Italy: ***Steps Towards Full Automation of Road Vehicles***; on September 6th, 2010.

- **Dr. Andrzey Banaszuk**, United Technologies Research Center (UTRC), East Hartford, Connecticut, USA: *Model-Based Design of Robust Autonomous Aerospace Systems;* on September 7th, 2010.

- **Dr. Dana Yoerger**, Woods Hole Oceanographic Institution, Woods Hole, USA: *Exploring the Deep Sea with Robots;* on September 8th, 2010

Two Special (invited) Sessions were also hosted during the Symposium: the first was organized by

M. Caccia of CNR-ISSIA (Genova, Italy) about EC projects on cooperative robotic systems in the marine-maritime field; the second Special Session was organized by **F. Maurelli, A. Pascoal, Y. Petillot, P. Ridao and P. Wilson** about the FREE-subNET research initiative.

The Symposium was organized by the University of Salento (Lecce, Italy), with the support of several Industrial Sponsors, with Avio S.p.A., Torino, Italy the leading one. The event was sponsored by the IFAC Technical Committe 7.5 on Intelligent Autonomous Vehicles and co-sponsored by the IFAC TCs: 1.3 - Discrete Event and Hybrid Systems, 4.1 - Components and Technologies for Control, 4.3 - Robotics, 7.1 - Automotive Control, 7.2 - Marine Systems and 7.3 - Aerospace. The Symposium was technically co-sponsored by IEEE RAS - Robotics and Automation Society.

Thanks to the support of the Town Hall of Lecce, the Symposium took place at the Carlo V Castle, one of the most prestigious historical buildings (built in the sixteenth century) of town and of Southern Italy. Social events included a visit to Otranto, a welcome cocktail, a Social Dinner and a farewell cocktail promoting the meeting and exchange of ideas among the participants.

Further details about the Symposium including the final program (with paper Abstracts) and a picture gallery of the event can be found at the web page http://iav2010.unile.it/.

Giovanni Indiveri and Antonio M. Pascoal
IFAC IAV 2010 IPC co-chairs

Giovanni Indiveri

Antonio Pascoal

Professor Kwon has received various awards such as the National Academy of Sciences Award in 1997, a Fellow of the National Academy of Engineering of Korea (NAEK) in 1995, Fellow of the Korean Academy of Sciences and Technology (KAST) in 1996, Fellow of IEEE in 1999, Fellow of TWAS (The Academy of Sciences for the Developing World) in 2001, the BEAM(Brown University Engineering Alumni Medal) award in 2003, and finally the Korea Highest Scientist Award of the Ministry of Science and Technology in 2007, whose prize money amounted to about 300,000 US dollars.

Professor Kwon has been a leader of various academic organizations such as President of the Institute of Robotics and Systems (ICROS) of Korea, the Korean IFAC NMO, in 1999, President of the Korean Institute of Electrical Engineers (KIEE) in 2001, Vice-President of the National Academy of Engineering of Korea (NAEK) in 2002-2006, President of the International Federation of Automatic Control (IFAC) in 2005-2008 and Vice-President of the Korean Academy of Science and Technology (KAST) in 2007-2010. He was Chair of the Seoul National University Senate in 2005. He has now been Chair of the Member Selection Committee of KcST since March 2010.

Fractional Differentiation and its Applications - FDA 10
IFAC Workshop
Badajoz, Spain, 18 - 20 September, 2010

The 4th IFAC Workshop on Fractional Differentiation and its Applications (FDA'10) was held in Badajoz, Spain, from 18th to 20th October 2010, organized by the University of Extremadura (Spain) and the Technical University of Kosice (Slovak Republik), with the collaboration of the "Comité Español de Automática (CEA)", and supported by a large International Program Committee with more than 60 members from 24 countries.

The Workshop on Fractional Differentiation and its Applications, sponsored by the Technical Committee on Linear Control Systems of IFAC, is held every two years; the preceding ones were held in Bordeaux, France (2004), Porto, Portugal (2006), and Ankara, Turkey (2008). The scope of the workshop is to present the state of the art on fractional systems, both with respect to their theoretical and application aspects. The growing research and development on fractional calculus in the areas of mathematics, physics and engineering, both from university and industry, motivates this international event, and gathers and unifies the whole community. This series of events is fast becoming a leading forum, where the latest developments as well as the future perspectives related to fractional calculus and its applications in science and engineering are presented and discussed.

The present edition of the workshop covered a wide variety of topics, ranging from theoretical results on mathematical foundations to industrial applications. Fruitful results and promising tendencies were presented and discussed by experts from 25 countries coming from Africa, America, Asia and Europe. Around 150 papers were presented during the workshop days; they were distributed in regular sessions, special sessions, and poster sessions, covering the best of the world in fractional calculus research.

The technical program of the workshop also included three plenary lectures given by prominent professors. They were:

Fractional differential equations with applications: from fractional ODEs to fractional PDEs by **Prof. Changpin Li** (Shanghai Univeristy, China);

Fundamentals of event based control by **Prof. Sebastian Dormido** (National University of Distance Education, Spain);

Mars Exploration: The Project MEIGA-MARS-METNET-PRECURSOR by **Prof. Luis Vazquez** (Universidad Complutense de Madrid, Spain).

To conclude, it can be said that the IFAC FDA'10 Workshop had a very high level of attendance, with very active participation in most technical activities and the feedback from attendees' comments has been very positive.

Of course, the success of the event is the result of many people's efforts. On behalf of the IPC, I would like to thank all the authors, IPC members, reviewers, and participants for their contributions, and also the session chairs and co-chairs for conducting the technical sessions and providing valuable feedback on their development. We are also grateful to the National Organizing Committee chaired by Prof. Blas M. Vinagre, and the many volunteers who have contributed to its organization.

Yang Quan Chen
IPC Chair

Intelligent Control Systems
WICS 2010
IFAC Workshop
Sinaia, Romania
29 September - 2 October, 2010

The first edition of the IFAC Workshop on Intelligent Control Systems (WICS 2010) was held in Sinaia, Romania, from 29 September to 2 October, 2010. The Workshop aimed at continuing the tradition of former SICICA Conferences and at providing a forum to review and debate the latest results and perspectives on intelligent control systems, both theoretically as well as practically.

43 papers were submitted to the WICS Workshop. After a thorough process of peer-review, the final selection resulted in 24 oral presentations of authors originating from ten different countries.

The Workshop also featured four plenary sessions on issues of current interest. They were on the following subjects:

Synergy of Switched and Fuzzy Systems as a New Potential for Intelligent Control, by **G. Dimirovski**, MK

Intelligent Decision Support for Industrial Applications, by **F. Filip**, RO

Intelligent Manufacturing, by **I. Dumitrache**, RO

Generalized Barkhausen Conditions - Nonlinear Loops, by **H.N. Teodorescu**, RO

The papers presented had a high relevance for the proposed topics of the Workshop and covered a wide range of subjects, among which were the generic methodologies and architectures for the design of intelligent systems, intelligent and hybrid techniques in process control, software agents and agent systems, decision support, the simulation and control of complex processes. The papers presented were mostly of a practical nature, dedicated to various applications of intelligent control, such as industrial process control, manufacturing, medicine, and environmental issues. A range of emerging new trends were extensively discussed, such as cognitive agents, multiscale modeling, bio-inspired hardware and software, cyber-physical systems.

We would like to thank all the participants as well as all those who contributed towards making this scientific event possible: the IPC members, the reviewers, the NOC and the local organizing team.

Ion Dumitrache
IPC Co-Chair

Title	2011	Place	Further Information
American Control Conference - in co-operation with IFAC -	June 29 – July 01	San Francisco CA, USA	http://a2c2.org/conferences/acc2011/
IFAC WORLD CONGRESS – 18th Milano 2011	August 28 – September 02	Milan Italy	http://www.ifac2011.org/ e-mail: info@ifac2011.org
SAE/IFAC Intl. Symposium Future Active Safety Technology towards zero-traffic-accident - FAST-zero'11	September 05 – 08	Tokyo Japan	http://www.fast-zero11.info/ e-mail: fast-zero11@ics-inc.co.jp

Title	2012	Place	Further Information
IFAC Conference Advances in PID Control	March 28 – 30	Brescia Italy	http://pid12.ing.unibs.it e-mail: pid12@ing.unibs.it
IFAC Symposium Information Control Problems in Manufacturing – INCOM 2012	May 23 – 25	Bucharest Romania	http://incom12.org e-mail: incom12@cimr.pub.ro
IFAC Workshop Automatic Control in Offshore Oil and Gas Production	May 31 – June 1	Trondheim Norway	http://www.ifac-oilfield.no/
IFAC Conference Analysis and Design of Hybrid Systems - ADHS 2012	June 06 – 08	Eindhoven Netherlands	http://adhs12.org/ e-mail: info@adhs12.org
IFAC Workshop Dynamics and Control in Agriculture and Food Processing – DYCAF	June 13 – 16	Plovdiv Bulgaria	http://dycaf-2012.tu-plovdiv.bg e-mail: altaneva@tu-plovdiv.bg
IFAC Symposium Advances in Control Education - ACE 2012	June 19 – 21	Nizhny Novgorod Russia	http://ace2012.ru/ e-mail: ifac.ace2012@gmail.com
IFAC Sympsoium Robust Control Design – ROCOND	June 20 – 22	Aalborg Denmark	http:// not yet available e-mail: not yet available
IFAC Symposium Advanced Control of Chemical Processes - ADCHEM-2012	July 10 – 13	Singapore Singapore	http://www.adchem2012.org/ e-mail: ivan@adchem2012.org
IFAC Symposium System Identification – SYSID 2012	July 11 – 13	Brussels Belgium	http://www.sysid2012.org/ e-mail: secretariat@sysid2012.org
17th Intl. Conference (cosponsored by IFAC) Methods and Models in Automation and Robotics – MMAR 2012	August 27 – 30	Miedzyzdroje Poland	http:// not yet available e-mail: not yet available
IFAC Symposium Power Plants and Power Systems Control	September 02 – 05	Toulouse France	http:// not yet available e-mail: not yet available
IFAC Symposium Robot Control – SYROCO 2012	September 05 – 09	Dubrovnik Croatia	http:// not yet available e-mail: not yet available
IFAC Symposium Control in Transportation Systems - CTS'12	September 12 – 14	Sofia Bulgaria	http://hs27.iccs.bas.bg/

Title	2013	Place	Further Information
IFAC Symposium Advances in Control Education	August 28 – 30	Sheffield UK	http:// not yet available e-mail: not yet available
IFAC Symposium Nonlinear Control Systems - NOLCOS	September 04 – 06	Toulouse France	http:// not yet available e-mail: not yet available