42nd IEEE CONFERENCE ON DECISION AND CONTROL
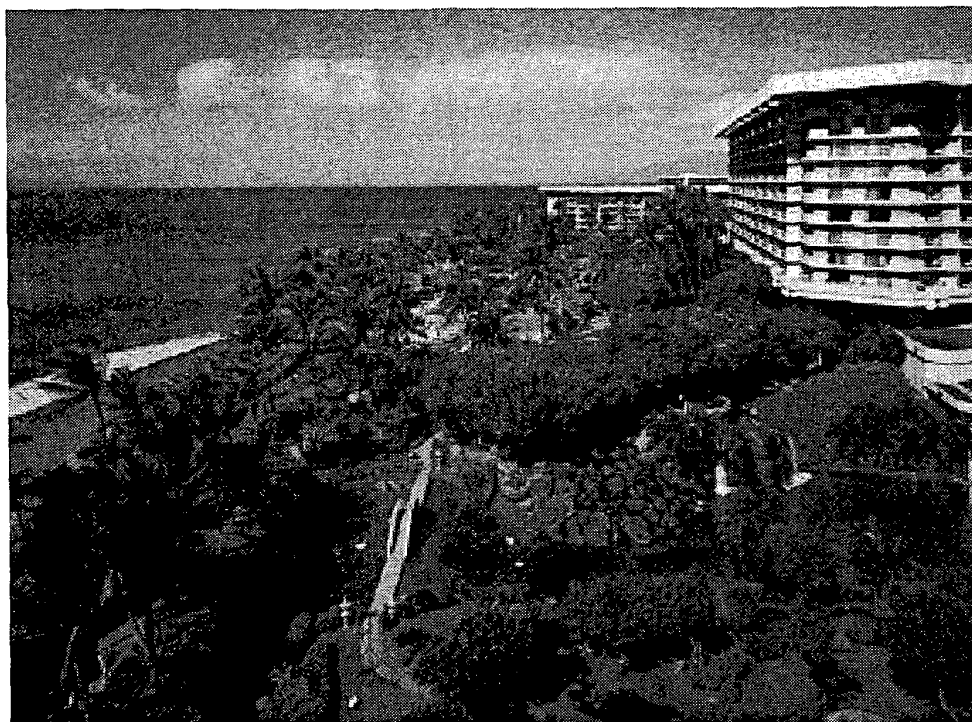
PROCEEDINGS

IEEE

December 9–12, 2003

The Hyatt Regency Resort & Spa
Maui, Hawaii, USA

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I. INVITATION

Aloha! and welcome to your 42nd IEEE Conference on Decision and Control being held at the Hyatt Regency Maui, Hawaii during December 9-12, 2003. It took us 13 years to come back to Hawaii, for a repeat performance of the widely successful 1990 CDC conference in Waikiki beach, Oahu. Our magnificent venue is situated on a beautiful, wide stretch of Kaanapali Beach beside the jewel-like Pacific. Four miles south is the quaint historical whaling port of Lahaina, and few miles beyond is Haleakala Mountain and volcano. Maui offers the adventurous opportunities to bike, hike, snorkel, and scuba dive, and to those who enjoy fine dining, an endless array of restaurants catering to your every taste.

The "Hawaii factor" has contributed to a record submission and acceptance of papers. Our program contains 1115 papers in all, for a 61% acceptance rate. We plan on 14 parallel sessions, and for the first time, one poster/interactive session. Also notable is the sponsorship by industry. Our major industry sponsors are Honeywell, Xerox, National Instruments, and The MathWorks. Each of these will have a special evening sponsor's session.

CDC 03 has a rich plenary structure. The Bode Lecture will be delivered by Lennart Ljung of Linköping University. The Plenary Speakers are Katsuhisa Furuta, past president of Japan's SICE, Vladimir Kucera, President of IFAC, and Tamer Basar, past president of IEEE Control Systems Society. Also attending will be Ioan Landau, Founder and First President of the European Union Control Association. Janusz Bryzek will give a keynote talk about Control Issues for MEMS. Kishan Baheti and Murti Salapaka have organized a special track on Nanotechnology. There are three Plenary Panels: International Funding Thrusts and Mechanisms, History of Controls, and CSS Presidents Panels.

Five workshops spanning the spectrum of current research interest areas in our field have been proposed. Whale season starts in early December, so you may see the humpback whales out of

Lahaina, or even from our conference venue. Finally, opening and closing receptions on the beachside with music and cultural dancers are calculated to round out the experience to a full one both in technical and social terms.

It will be wonderful to see all of you in Maui. We trust that you will take time from attending the technical sessions to stroll down the beach and to capture some of the Hawaii magic. And when you have the time, please let someone on the organizing committee know your feelings about this CDC. It will help improve your future CDCs.

Aloha and Mahalo,

> *Frank L. Lewis*, The University of Texas at Arlington, General Chair, CDC 2003 Maui

> *Chaouki Abdallah*, The University of New Mexico, Program Chair, CDC 2003 Maui

II. CONFERENCE HIGHLIGHTS

Technical Program Overview

Fort the first time, the CDC technical program was handled using Paperplaza, a web-based system developed by Professor Huibert Kwakernaak, and managed by Professors Thomas Parisini, Douglas Lawrence and Pradeep Misra. Despite the novelty and technical glitches, Paperplaza helped in handling the largest amount of submissions ever (1850 papers) and successfully managed the reviews and program statistics.

This year's technical program introduces the Poster/Interactive (P/I) format to the CDC. The P/I papers have received the same review as those submitted under the usual oral format. Glancing through the sessions titles, it is obvious that our field continues to evolve with new topics (hybrid, time-delay, communications, autonomous systems, quantum control, biomedical, MEMS) rising in popularity, while "old favorites" such as nonlinear systems, and robust control remain strong.

In addition to the 14 parallel oral sessions, and to the 1 Poster/Interactive session, the program contains the following:

Plenary Sessions

Tuesday morning at 8:00am Professor Vladimir Kucera of Czech Technical University in Prague will present a lecture entitled "Feedback Control: the Origins, the Milestones, and the Trends."

Wednesday morning at 8:00am Professor Katsuhisa Furuta of Tokyo Denki University will present a lecture entitled "Control of Pendulum: - From Super Mechano-System to Human Adaptive Mechatronics."

Thursday morning at 8:00am Professor Tamer Basar of The University of Illinois will present a lecture entitled "Entanglement of Communication and Control."

Bode Lecture

Friday morning at 11:00am Professor Lennart Ljung of Linköping University will deliver the Bode lecture, titled "Challenges of Nonlinear Identification."

Keynote Talks

Wednesday afternoon at 2:20pm Dr. Kishan Baheti of the U.S. National Science Foundation will present a lecture entitled "Nanoscale Science and Engineering at NSF."

Wednesday evening at 7:00pm Dr. Janusz Bryzek will present a lecture entitled "Control Issues for MEMS."

Plenary Panels

Tuesday at noon Dr. Paul Werbos of the U.S. National Science Foundation will chair a panel on "International Funding Thrusts and Mechanisms."

Wednesday at noon Dr. Danny Abramovitch of Agilent Labs will chair a panel on "History of Controls."

Thursday at noon Dr. Mike Masten of Texas Instruments will chair the CSS Presidents Panel.

Industry Sponsor Evening Sessions

Our Major Industry Sponsor Sessions are as follows:

Tuesday evening at 7:00pm

Honeywell Industry Session	http://www.honeywell.com
National Instruments Industry Session	http://www.ni.com

Wednesday evening at 7:00pm

Xerox Industry Session	http://www.xerox.com
The MathWorks Industry Session	http://www.mathworks.com

The First NSF Workshop for Women in Control - Dedicated to Cheryl Schrader, CSS President

Wednesday 9:30am-1:30pm Professor Bozenna Pasik-Duncan of the University of Kansas will lead a workshop entitled "After Graduation: Women in Control Taking a Leadership Role." Dr. Vasundara V. Varadan, Division Director—Electrical & Communications Systems from the U.S. National Science Foundation will be a keynote speaker. Leadership activities will include panels, lectures, informal discussions and case studies. Panel and discussions will address issues concerning involvement in professional societies, being a departmental or college administrator, a research leader, a community leader, an effective mentor, and challenges in balancing a career and family. The workshop is open to all participants of the 2003 CDC.

The NSF Workshop for High School Teachers and Students for Maui District, which includes the islands of Maui, Lanai, and Molokai.

Tuesday 8:30am- 4:00pm Professor Bozenna Pasik-Duncan of the University of Kansas will lead a workshop for high school teachers and students, entitled "Ideas and Technology of Control and Systems". The purpose of the workshop is to increase the general awareness among high school teachers and students of the importance of control and systems technology and its cross-disciplinary nature. Workshop activities will include panels, lectures, informal discussions and case studies. The list of speakers with their talks include: Dr. Christos G. Cassandras, "Joys and Perils of Automation," Dr. Raffaello D'Andrea, "Control of Autonomous Vehicles," Dr. Theodore E. Djaferis, "The Power of Feedback," Dr. Katsuhisa Furuta, "Understanding Phenomena Through Real Physical Objects— Understanding Controlling Pendulum," Dr. P.R. Kumar, "How the Internet and Wireless Networks are Controlled: What's happening behind the screen," Dr. Richard Murray, "Autonomous Vehicles: Racing from Los Angeles to Las Vegas," Dr. Mark Spong, "Future Careers in Embedded Systems, Mechatronics, and Control." The workshop is open to all participants of the 2003 CDC.

Decision and Control for Unmanned Autonomous Vehicles (UAVs) – New Developments and New Directions

Tuesday evening at 7:00 pm - 8:30 pm Honeywell Laboratories will sponsor a special industry session on "Decision and Control for Unmanned Autonomous Vehicles (UAVs)—New Developments and New

Directions, organized by Drs. Datta Godbole and Tariq Samad of Honeywell Labs. Unmanned aerial vehicles have been on military roadmaps and in the air for, literally, decades, but it is only recently that meaningful levels of *autonomy* have started to be realized. Control engineering has been a key discipline for enabling this progress and continues to be viewed as critical for the future. This special session, which includes representatives from academe, government, and industry, will highlight recent accomplishments in the control of autonomous vehicles and identify priorities and programs for future controls-related research in this area. The session will consist of the following five presentations followed by discussion: "Session objectives and introduction," *Tariq Samad* (Honeywell Labs), "Coordination and control of multivehicle teams," *Shankar Sastry* (University of California, Berkeley), "High-performance autonomous rotorcraft," *George J. Vachtsevanos* (Georgia Institute of Technology), "Guidance and control for the DARPA/Honeywell Organic Air Vehicle," *Dale F. Enns* (Honeywell Labs), "DoD research opportunities for UAVs," *John S. Bay* (DARPA).

Tutorial Workshops

Five workshops will be held on Sunday and Monday prior to the conference. The tutorial workshop presenters are leaders in their fields who have published extensively and are experienced lecturers. Workshop registration fees include lecture notes and are payable either through pre-registration or on-site at the Registration Desk (see "Registration" for details). There is an NSF-sponsored workshop on "Cross-Disciplinary Research and the Role of Industry" that is gratis to all conference registrants.

Exhibits and Information for Industry Exhibitors

Exhibits will be presented by book publishers and developers of control software and hardware products. For information about exhibiting for your company please contact Exhibits Chair Professor Hua Wang of Boston University. The benefits and details about exhibiting are on the CDC website.

CSS Board of Governors Meeting

The semiannual IEEE Control System Society Board of Governors Meeting will be held 12:00-6:00pm Monday. This is an open meeting and all members of the Society are invited to attend.

TUESDAY PLENARY

Feedback Control: the Origins, the Milestones, and the Trends

Vladimir Kucera
Czech Technical University in Prague, Czech Republic
kucera@fel.cvut.cz, http://www.fel.cvut.cz/dean/

This plenary reviews the major trends in Feedback Control, identifies emerging challenges for control theory, and forecasts future technological developments in the field.Realizing that the best way to understand an area is to examine its evolution and the reasons for its existence, a brief history of feedback control is provided first. Ingenious feedback devices can be traced back to the ancient Alexandria. The milestones of this evolution were the flying ball governor of James Watt and its stability analysis by Maxwell, the stability theory of Lyapunov, the conception of three-term or PID controllers, the invention of negative feedback amplifiers, the introduction of Nyquist and Bode charts, and Wiener's cybernetics.

The post war developments included optimal control and filtering, adaptive control, robust control, and hybrid control systems. The computer technology in particular has had a tremendous impact on control theory and its application.

Today, as a result of this evolution, it is possible to implement advanced control methodologies. We have smart sensors and smart actuators. The most dramatic impact of electronic processing occurs in controllers. In times past, computational demands of adaptive, optimal and robust control techniques could not be easily performed. With modern electronics, such operations are possible. Modern electronic implementations are also more immune to aging effects, system noise and disturbances.

The forecast of future technological developments is based on the methods and technologies that emerge in computers, communications, networking, manufacturing, nanoscale science, medicine, and biology. Control theory, on the other hand, is looking for new solutions. There is a strong influence of computer science and engineering. Feedback will be used mostly to stabilize the process and to counteract uncertainties, with other functions achieved by a feedforward.The truly exciting developments in any field will occur where there is a confluence of application drivers and disciplinary development of the subject. Automatic control is no exception. Much attention will have to be paid to education and training. The education must be multidisciplinary, with a focus on teaching general methods rather than vocational skills.

The International Federation of Automatic Control, known as IFAC, represents the worldwide community of automatic control. The most important events of IFAC are the Triennial World Congresses. The forthcoming congress, in 2005, will be held in Prague, Czech Republic.

Every member of the broad automatic control community is invited to visit and regularly follow the Congress WebPages at www.ifac.cz and ultimately take part in the Congress activities during July 4-8, 2005.

Vladimir Kucera was born in Prague, Czechoslovakia in 1943. He studied at the Czech Technical University in Prague, where he obtained an Ing. degree in Electrical Engineering with distinction in 1966. He received the CSc. and DrSc. research degrees in Control Engineering from the Czechoslovak Academy of Sciences in 1970 and 1979, respectively.

During 1970-1999, V. Kucera was a member of the Institute of Information Theory and Automation, one of the research institutes of the Academy of Sciences in Prague. He held various research and managerial positions, including Vice-Director (1986-1990) and Director (1990-1998) of

the Institute. Since 1992, he has been active at the Czech Technical University in Prague. During 1999-2000, he was Head of Control Engineering Department and in 2000, he was elected Dean of the Faculty of Electrical Engineering.

V. Kucera held visiting positions at the National Research Council, Ottawa, Canada in 1970-1971; University of Florida, Gainesville, USA in 1977; Ecole Nationale Superieure de Mecanique, Nantes, France in 1981-1982; Australian National University, Canberra, Australia in 1984; Uppsala Universitet, Sweden in 1989; Centro de Investigacion y de Estudios Avanzados del IPN, Mexico City in 1991; ETH Zurich, Switzerland in 1992; University of Newcastle, Australia in 1993; Politecnico di Milano, Italy in 1995 as well as a number of short visiting appointments. He was Nippon Steel Professor at the Chair of Intelligent Control, Tokyo Institute of Technology, Japan in 1994.

The research interests of V. Kucera include control systems analysis and design. He contributed to the theory of Riccati equations and pioneered the use of polynomial equations in the design of control systems. His best result is the parametrization of all controllers that stabilize a given plant, known as the Youla-Kucera parametrization, which has become a new paradigm in robust and optimal control.

The industrial experience of V. Kucera includes the design of an adaptive controller for a rolling mill; the development of fast and precise servomechanisms; a cooperation with the Nippon Steel Corporation, Japan and the participation in European projects Dynamic Control and Management Systems in Manufacturing Processes, and Advanced Methodologies and Tools for Manufacturing Systems. Since 2000, he has been Head of the Center for Applied Cybernetics, Czech Technical University in Prague.

V. Kucera is the author of four books: Algebraic Theory of Discrete Linear Control (in Czech) (Academia, Prague 1978), Discrete Linear Control: The Polynomial Equation Approach (Wiley, Chichester 1979), Analysis and Design of Discrete Linear Control Systems (Prentice-Hall, London 1991), and Polynomial Methods for Control Systems Design, edited with M. J. Grimble (Springer, London 1996). He published 104 research papers in the most influential journals of automatic control, 136 contributions in the proceedings of international conferences, and 70 other works. The citation databases of the Thomson Institute for Scientific Information, Philadelphia include 1,560 citations of his publications, direct and indirect autocitations excluded.

V. Kucera combines research with teaching. Since 1996 he has been a Professor of Engineering Cybernetics at the Czech Technical University in Prague. He teaches graduate courses on systems and control. He has also given many courses at prestigious European, American, Asian, and Australian universities.

V. Kucera serves on the editorial boards of Automa, Slaboproudy obzor, Int. J. Robust and Nonlinear Control, and Bull. Polish Acad. Sciences. He was Editor-in-Chief of Kybernetika (1990-1998), an Associate Editor of Automatica (1987-1996) and a member of the editorial boards of Syst. Control Letters (1987-1994), Int. J. Control (1990-1999), Int. J. Systems Science (1986-1999), J. Math. Systems, Estimation and Control (1991-1998). He is President of the International Federation of Automatic Control, Fellow of IEE, Fellow of IEEE (the first one in the Czech Republic), and was a member of the IEEE Control Systems Society Board of Governors (1996-1998). He is a founding member and Vice-President of the Engineering Academy of the Czech Republic, and past Chairman of the Czech Committee for Automatic Control (1993 – 2002).

V. Kucera received the Prize of the Czechoslovak Academy of Sciences in 1973, Kybernetika Best Paper Award in 1976, National Prize of the Czech Republic in 1989 for his contributions to the theory and practice of automatic control, Automatica Prize Paper Award in 1990 for paper Fundamental Theorem of State Feedback for Singular Systems, Hlávka Foundation Prize in 1992, Outstanding Service Award from IFAC in 1996, and Medal of the Ministry of Education of the Czech Republic in 2000. He is an Honorary Professor at the Northeastern University, Shenyang, China (1996) and received a Doctor honoris causa degree from Université Paul Sabatier, Toulouse (2003).

WEDNESDAY PLENARY

Control of Pendulum: -From Super Mechano-System to Human Adaptive Mechatronics

Professor Katsuhisa Furuta
School of Science and Engineering
Tokyo Denki University

The Super Mechano-System has been a research project at Tokyo Institute of Technology from 1997 to 2002. Human Adaptive Mechatronics (HAM) Project is a new COE research project at Tokyo Denki University; it will extend from 2003 to 2008. Both projects are sponsored by the Ministry of Education, Sports, Culture, Science and Technology in Japan. Super-Mechano Systems (SMS) are defined as mechanical systems that autonomously organize themselves by changing their structure and functions to attain higher performance for given objectives in a varying environment. The speaker was the project leader until 2000, when Prof. S. Hirose succeeded him. Many mechanical systems with functions adapting to varying environments and their relating basic theories have been developed, such as Roller Walker (S.Hirose at el.), Anaconda (S.Hirose and M.Yamakita), Super Mehcano-Boy (Hirose, Sampei), and others. A concurrent design method for the mechanism and the controller has been developed by the project's control research group (Hara and Iwasaki).
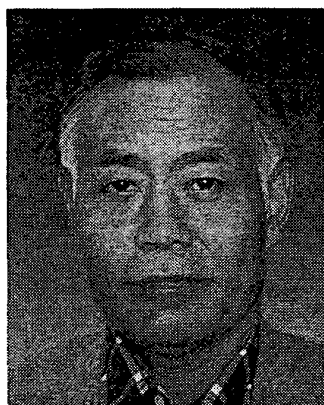
A Human Adaptive Mechatronics system includes a human in the control loop and changes the functions and structure of the man-machine interface according to improvements in the human's operating skill. These systems are considered to change the constraints of their subsystems. In this plenary lecture, some examples of the modeling of multiple pendulums and their control, from the hanging to the upright position, are discussed. Swing-up control of the pendulum will be discussed in terms of global stabilization of a unstable nonlinear system by nonlinear control. Previous results of pendulum control by the speaker are surveyed. A new approach to analysis and design of nonlinear controls based on Fractals will be presented. The results show that the maps of the control parameters and the initial conditions give interesting results.

Katsuhisa Furuta was born in Tokyo, Japan in 1940. He received his BS. MS., and Ph.D. degrees in Engineering from Tokyo Institute of Technology in 1962, 1964, and 1967, respectively. He was a Professor of Control Engineering at Tokyo Institute of Technology until the end of March 2000. He was a Russell Severance Springer Visiting Professor at The University of California at Berkeley in March 1997. He is currently a Professor at Tokyo Denki University in the Department of Computers and Systems Engineering.

He was a Member of The Science Council of Japan from 1997 to 2003. From 1994 to 1999 he was an IFAC Council Member, and he served as the Editor for Control Applications of Automatica from 1996 to 1999. Since June 2002 he has served as the Research Supervisor of Mine Detection and Clearance Activities for Japan Science and Technology, Co.

He received an honorary doctorate from Helsinki University of Technology in 1998, and has many international awards, including IEEE CSS Distinguished Member in 1998, and IEEE Third Millennium Medal in 2000. He is a Fellow of both SICE and IEEE.

THURSDAY PLENARY

Entanglement of Communication and Control

Tamer Basar
Fredric G. and Elizabeth H. Nearing Professor
Dept. Of Electrical and Computer Engineering
University of Illinois at Urbana-Champaign

Availability of accurate and timely information on the state of a dynamic system or on the uncertain environment where the system to be controlled resides has always been an important ingredient of a high-performance controller design. Roughly speaking, the more is communicated to a controller, the better is the performance it delivers. Driven by this dictum, research in control of uncertain systems has addressed for many decades the problems of first how to reshape (for example, encode) the available information within given constraints, and then how to process it (decode or filter) so that it will be of utmost value to the controller. There is also the question of whether and how the control itself can be used to improve the quality of this information (the dual or triple role of control) toward in turn improving its own performance. Hence, by and large, in all these scenarios, communication delivers performance improvement to control.
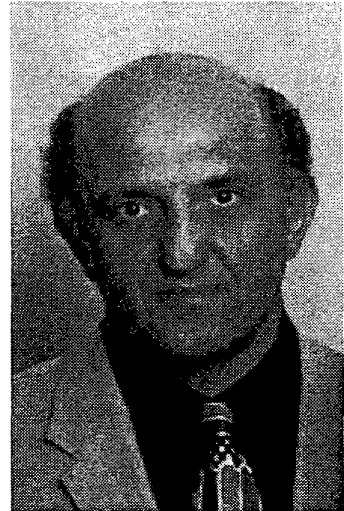
Recently, a different scenario has emerged, where control delivers performance improvement to communication. Internet is a prime example here, where the main goal is to communicate (involving a very large number of users and a very large scale heterogeneous network with all kinds of uncertainty), and control's role is (in both forward and feedback loops) to enable reliable communication under a 'fair' allocation of the available resources. The last couple of years have witnessed rapid progress in this arena, in both conceptualization and the development of fundamental results, where feedback control plays a central role. It is not at all unreasonable to anticipate for the not too distant future, a transfer of the basic knowledge that is currently being generated and the analytical and computational tools that are being developed, into new transport control protocols and router designs to replace the ones currently in use on the Internet.

This plenary talk will provide an overview of this rapidly advancing field, where control is used to better communication rather than the other way around. To put this in perspective, the talk will also dwell briefly on the former class above, which is still rich in enticing but challenging problems for the decision and control community.

Tamer Basar was born in Istanbul, Turkey, on January 19, 1946. He received B.S.E.E. degree from Robert College, Istanbul, in 1969, and M.S., M.Phil, and Ph.D. degrees in engineering and applied science from Yale University, in 1970, 1971 and 1972, respectively. After stints at Harvard University, Marmara Research Institute (Gebze, Turkey), and Bogaziçi University (Istanbul), he joined the University of Illinois at Urbana-Champaign in 1981, where he is currently the Fredric G. and Elizabeth H. Nearing Professor of Electrical and Computer Engineering, and Research Professor at the Coordinated Science Laboratory. He has spent sabbatical years at Twente University of Technology (the Netherlands; 1978-79), and INRIA (France; 1987-88, 1994-95).

Dr. Basar has authored or co-authored over 150 journal articles and book chapters, as well as numerous conference publications in the general areas of optimal, robust, and adaptive control; large-scale and decentralized systems and control; dynamic games; stochastic control; estimation theory;

stochastic processes; information theory; and mathematical economics. He is co-author of the text Dynamic Noncooperative Game Theory (Academic Press, 1982; second edition, 1995; latest edition in SIAM Series in Classics in Applied Mathematics, 1999), editor of the volume Dynamic Games and Applications in Economics (Springer-Verlag, 1986), co-editor of Differential Games and Applications (Springer-Verlag, 1988), co-editor of Advances in Dynamic Games and Applications (Birkhäuser, 1994), co-author of the text H-infinity Optimal Control and Related Minimax Design Problems (Birkhäuser, 1991; second edition, 1995), and Editor of the centennial volume Control Theory: Twenty-Five Seminal Papers (1932-1981) (IEEE Press, 2001). His current research interests are robust nonlinear and adaptive control; routing, pricing, and congestion control; flow control on communication networks; control over wireless and wired networks; mobile computing; risk-sensitive estimation and control; and robust identification.

Tamer Basar is a member of the National Academy of Engineering (of the USA), and also carries memberships in several scientific organizations, among which are SIAM, SEDC (Society for Economic Dynamics and Control), ISDG (International Society of Dynamic Games), GTS (Game Theory Society), AMS (American Mathematical Society), European Academy of Sciences, and IEEE (Institute of Electrical and Electronics Engineers). He was elected a Fellow of IEEE in 1983, and has served its Control Systems Society in various capacities, among which are: Past President (2001), President (2000), President-Elect (1999), Vice-President for Financial Affairs (1998), Vice-President for Publications (1997), the Editor for Technical Notes and Correspondence for its Transactions on Automatic Control (1992-1994), and as the general chairman (1992) and program chairman (1989) of its major conference (Conference on Decision and Control). He has also been active in IFAC, in the organization of several workshops and symposia, and more recently (since 1992) as Editor and Deputy Editor-in-Chief of Automatica, and vice-chair of its editorial board. During the period 1990-1994, he was the President of the International Society of Dynamic Games (ISDG) , and is currently the Managing Editor of the Annals of ISDG (published by Birkhäuser), the Series Editor of Systems & Control: Foundations and Applications (published by Birkhäuser), and Honorary Editor of Applied and Computational Mathematics. He is also associate editor of Systems and Control Letters, and is on the editorial and advisory boards of a number of other international journals. Among some of the recent honors and awards he has received are: Election to the National Academy of Engineering (of the USA) (2000), IEEE Millennium Medal (2000), Nearing Distinguished Professorship at the University of Illinois at Urbana-Champaign (1998), Axelby Outstanding Paper Award (1995) and Distinguished Member Award (1993) of the IEEE Control Systems Society, and Meda of Science of Turkey (1993).

BODE LECTURE

Challenges of Nonlinear Identification

Lennart Ljung
Department of Electrical Engineering
Linköping University
Identification of non-linear systems is an important problem in many applications. The topic is substantially richer than linear system identification. One reason for this is of course that the problem is significantly more difficult, but also that it has engaged several different research communities. With origins in statistical non-linear and non-parametric regression theory, areas like neural networks and learning theory can now be seen as research fields in their own right. In addition to the control field, many areas like artificial intelligence, pattern recognition, signal processing, oceanography, geology, etc, have developed their own approaches to the problem. This has lead to a very substantial literature on the topic.

This talk will not attempt to give any survey of all approaches. It will focus on some core features of the problem which represent the basic challenges. The foremost problem is the inherent lack of data support to build complex models. A black box model with n explaining variables (regressors) can be seen as a surface in R^{n+1}. Even for moderately large n, this is a huge space to fill with observations. The remedy will be to assume or look for sub-structures in the model/data,linearity in certain directions etc. For control applications it is natural to complement the data support with structures based on physical insights, ``grey-box models". Interfacing physical modeling tools with identification techniques is thus important. Grey-box models, on other hand, typically lead to minimization problem with many local minima. This is another challenge, which possibly can be dealt with using modern computer algebra and optimization techniques.

Lennart Ljung received the MSc degree in Engineering Physics in 1970 and the PhD degree in Automatic Control in 1974 both from Lund Institute of Technology. Since 1976 he is Professor of the chair of Automatic Control In Linkoping, Sweden, and is currently Director of the Competence Center "Information Systems for Industrial Control and Supervision" (ISIS). He has also held visiting positions at Stanford and MIT. His research interests have focused on all aspects of system identification, and he has written many papers and several books. He is also the author of the Matlab System Identification Toolbox. Moreover, he has been involved as chairman and committee member in numerous national and international research organizations. He was IFAC vice President 1987-1993, and is currently chairman of the Engineering Section of the Swedish Royal Academy of Sciences. He is an IEEE Fellow and an IFAC Advisor as well as a member of the Royal Swedish Academy of Sciences (KVA), a member of the Royal Swedish Academy of Engineering Sciences (IVA), and an Honorary Member of the Hungarian Academy of Engineering. In 1978 and in 1993 he received the Automatica Prize paper award, and in 1979 the George Axelby Outstanding Paper Award. He has received honorary doctorates from the Baltic State Technical University in St Petersburg, and from Uppsala University in Sweden.In 2002 he received the Quazza Medal from IFAC.
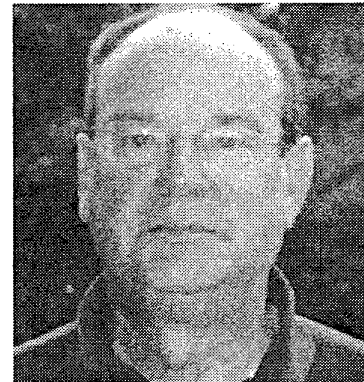
Wednesday Keynote in Nanotechnology

NANOSCALE SCIENCE AND ENGINEERING AT NSF

Kishan Baheti
U.S. National Science Foundation

The emerging fields of nanoscience and nanoengineering are leading to unprecedented understanding and control over the fundamental building blocks of all physical things. The scientists and engineers are working at the atomic, molecular and supramolecular levels, in the length scale of approximately 1-100 nm range, in order to understand and create materials, devices and systems with fundamentally new properties and functions because of their small structure. Recently, the United States Congress has passed H. R. 766: "Nanotechnology R&D Act of 2003" to significantly increase government funding in this emerging area. The presentation will describe interdisciplinary activities supported by the National Science Foundation for collaborative research and education in nanoscale science and engineering.

Kishan Baheti received the B.E. and M.E. in Electrical Engineering in India from VRCE Nagpur, and from BITS Pilani, respectively. In 1970, he came to USA and received M.S. in Information and Computer Science from University of Oklahoma and Ph.D. in Electrical Engineering from Oregon State University. In 1976, Dr. Baheti joined the Control Engineering Laboratory of GE Corporate Research and Development Center in Schenectady, NY. His work focused on advanced multivariable control for jet engines, computer- aided control system design, vision-based robots for precision welding, model-based fault identification and parallel implementation of Kalman filters. Dr. Baheti and his colleagues received IR-100 award for robotic welding vision system. In 1989, Dr. Baheti joined NSF as a Program Director in the Division of Electrical and Communications Systems. He has been instrumental in the development of NSF initiatives on "Combined Research and Curriculum Development", "Semiconductor Manufacturing", and NSF/EPRI Initiative on "Intelligent Control". His contributions include the development of NSF Initiative on "Research Experience for Teachers" to involve middle and high school teachers in engineering research that can be transferred to pre-college classrooms. He has served as associate editor for IEEE Transactions on Automatic Control, member of the Control Systems Board of Governors, chair for Public Information Committee, and awards chair for the American Automatic Control Council (AACC). He received "Distinguished Member Award" from the IEEE Control Systems Society and was elected a Fellow of IEEE.

Wednesday MEMS Keynote- Control Issues for MEMS

Dr. Janusz Bryzek, Dr. Eric Abbott, Anthony Flannery,
Mitch Novack, David Cagle, Dr. Jacek Maitan
Transparent Networks, BN Ventures, Honeywell, Agile Microsystems

MEMS (MicroElectroMechanical Systems) technology defines a broad range of mechanical integrated circuits. Over the last 10 years the sophistication level of MEMS devices increased dramatically, including integration of on-chip actuators and control electronics in devices ranging from ink jet printing heads, servo controlled gyro sensors, HDTV display engines and photonic switches.

This paper discusses control issues for MEMS devices, starting with an evolution of MEMS technology and increasing demand for control technology. A case study is presented outlining control issues in the high port count (1024x1024) photonic crossconnect. In this application, MEMS mirrors are controlled in a closed loop to deliver the low optical connection insertion loss and a high resistance to vibration. To close the control loop, extraction of reduced DOF 3D mirror models from finite element mechanical model is shown to be a very effective approach in predicting and optimizing dynamic performance of the nonlinear mirror drive   Another discussed control issue is time efficient calibration of the million optical connection points.

As the sophistication level of MEMS systems increases, the demand for control is expected to increase as well. It is becoming important that control experts start getting involved early in the design phase, so the development path of advanced MEMS systems and subsystems can be accelerated.

Dr. Bryzek is considered as one of the pioneers of the MEMS industry. He got involved in the development of MEMS pressure sensors in Poland in early 1970, working on technology transfer from Honeywell. In 1979 he joined Foxboro ICT, the first Silicon Valley MEMS sensor spinout from Fairchild Semiconductor. Between 1982 and 2003 Bryzek cofounded six Silicon Valley MEMS companies, all introducing products based on the cutting edge technology: Sensym, ICSensors, NovaSensor, Intelligent MicroSensor Technology, Transparent Networks and BN Ventures.
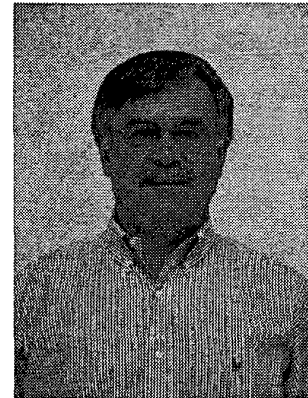
One of his successful developments was the world's first disposable blood pressure sensor in 1981, currently shipping 20 million units/year. One of his successful marketing efforts was the development of worldwide MEMS market awareness program lunched from NovaSensor in partnership with RGA in 1986, resulting in MEMS coverage by not only the majority of trade publications, but business and financial media as well.

Bryzek has published over 200 papers, wrote sections of 3 books, chaired many international conferences and co-authored 30 patents. Bryzek was actively involved in the MEMS standardization effort, including Disposable Blood Pressure Transducers released by AAMI in 1984 and Smart transducer Interface IEEE-1451 released as several sub-standards in 1990s. In 1994 he was awarded the Lifetime Achievement Award by Sensors Magazine for the achievements in MEMS field.

Dr. Bryzek got his MSEE in 1970 and Ph.D. in 1978 from Warsaw Technical University. He completed the executive management program at Stanford University in 1987.

Dr. Bryzek is on the Advisory Boards of Chip Scale Magazine and investment bank Via Inc. Since 2000, he has been involved in performing the startup companies due diligence for VC firms, USVP and Benchmark Capital.

IEEE CONFERENCE ON DECISION AND CONTROL PAST AND PRESENT
The CDC grew out of the former Symposium on Adaptive Processes, to become the premier conference in the field that it istoday. Early on it was associated with the Joint Automatic Control Conference (JACC - now called the ACC) and later the National Electronics Conference (NEC). Below is the complete list of past CDCs with titles, chairs and locations. In the listing, GC denotes General Chair, PC stands for Program Chair, and SC is Symposium Chair. The proceedings of all past conferences can be found at the IEEE Library, 345 47th Street, New York, NY 10017.

DISCRETE ADAPTIVE PROCESSES - SYMPOSIUM
AND PANEL DISCUSSION (IEEE); part of 3rd JACC
GC: J. Sklansky
New York University, New York City, NY, 29 June 1962
SYMPOSIUM ON ADAPTIVE PROCESSES; part of NEC
GC: L. Kanal
McCormick Place, Chicago, IL, 28-29 October 1963
SYMPOSIUM ON ADAPTIVE PROCESSES; part of NEC
GC: F. J. Mullin
McCormick Place, Chicago, IL, 19-21 October 1964
SYMPOSIUM ON ADAPTIVE PROCESSES; part of NEC
GC: E. C. Jones, Jr., PC: G. Brown
McCormick Place, Chicago, IL, 25-27 October 1965
SYMPOSIUM ON ADAPTIVE PROCESSES; part of NEC
GC: F. N. Bailey, PC: J. C. Hancock
McCormick Place, Chicago, IL, 3-5 October 1966
SYMPOSIUM ON ADAPTIVE PROCESSES; part of NEC
GC: F. M. Waltz, PC: P. E. Mayes
International Amphitheater, Chicago, IL, 23-25 October 1967
IEEE SYMPOSIUM ON ADAPTIVE PROCESSES
GC, PC: J. M. Mendel
UCLA, Los Angeles, CA, 16-18 December 1968
IEEE SYMPOSIUM ON ADAPTIVE PROCESSES
GC: J. B. Lewis, PC: G. J. McMurty
Pennsylvania State University, PA; 17-19 November 1969
1970 SYMPOSIUM ON ADAPTIVE PROCESSES (9th)
DECISION AND CONTROL
GC, PC: D. J. Lainiotis
University of Texas at Austin, Austin, TX, 7-9 December 1970
1971 IEEE CONFERENCE ON DECISION AND CONTROL
including the 10th SYMPOSIUM ON
ADAPTIVE PROCESSES
GC: J. T. Tou, PC: S. K. Mitter, SC: J. M. Mendel
Americana Hotel, Miami Beach, FL, 15-17 December 1971
1972 IEEE CONFERENCE ON DECISION AND CONTROL
including the 11th SYMPOSIUM ON
ADAPTIVE PROCESSES
GC: J. M. Mendel, PC: Y. C. Ho, SC: G. N. Saridis
Fontainebleau Motor Hotel
New Orleans, LA; 13-15 December 1972
1973 IEEE CONFERENCE ON DECISION AND CONTROL
including the 12th SYMPOSIUM ON
ADAPTIVE PROCESSES
GC: J. S. Meditch, PC: D. G. Luenberger, SC: L. A. Gerhardt
Sheraton-Harbor Island Hotel, San Diego, CA;
5-7 December 1973
1974 IEEE CONFERENCE ON DECISION AND CONTROL
including the 13th SYMPOSIUM ON ADAPTIVE
PROCESSES
GC: Elliot Axelband, PC: Stephen Kahne, SC: David P. Lindorff
Del Webb's Towne House, Phoenix, AZ; 20-22 November 1974
1975 IEEE CONFERENCE ON DECISION AND CONTROL
including the 14th SYMPOSIUM ON ADAPTIVE
PROCESSES
GC: J. B. Cruz, Jr., PC: J. B. Pearson, SC: G. Stein
Hyatt Regency Houston, Houston, TX, 10-12 December 1975

1976 IEEE CONFERENCE ON DECISION AND CONTROL
including the 15th SYMPOSIUM ON ADAPTIVE
PROCESSES
GC: M. Athans, PC: E. R. Barnes, SC: T. Pavlidis
Sheraton-Sand Key Hotel, Clearwater, FL, 1-3 December 1976
1977 IEEE CONFERENCE ON DECISION AND CONTROL
including the 16th SYMPOSIUM ON ADAPTIVE
PROCESSES
GC: K. S. Fu, PC: H. Sorenson, SC: T. Pavlidis
Fairmont Hotel, New Orleans, LA, 7-9 December 1977
1978 IEEE CONFERENCE ON DECISION AND CONTROL
including the 17th SYMPOSIUM ON ADAPTIVE
PROCESSES
GC: Robert E. Larson, PC: Alan S. Willsky, SC:
Jerry M. Mendel
Islandia Hyatt House Hotel, San Diego, CA, 10-12 January 1979
18th IEEE CONFERENCE ON DECISION AND CONTROL
including the SYMPOSIUM ON ADAPTIVE PROCESSES
GC: Stephen Kahne
PC: Alexander H. Levis, SC: Yaakov Bar-Shalom
Galt Ocean Mile Hotel, Ft. Lauderdale, FL,
12-14 December 1979
19th IEEE CONFERENCE ON DECISION AND CONTROL
including the SYMPOSIUM ON ADAPTIVE PROCESSES
GC: Pierre R. Belanger
PC: David L. Kleinman, SC: Richard V. Monopoli
The Regent Hotel, Albuquerque, NM; 10-12 December 1980
20th IEEE CONFERENCE ON DECISION AND CONTROL
including the SYMPOSIUM ON ADAPTIVE PROCESSES
GC: William R. Perkins
PC: Abraham H. Haddad, SC: Kumpati S. Narendra
Vacation Village Hotel, San Diego, CA; 16-18 December 1981
21st IEEE CONFERENCE ON DECISION AND CONTROL
GC: Alexander H. Levis, PC: William S. Levine
Holiday Inn - International Drive
Orlando, FL, 8-10 December 1982
22nd IEEE CONFERENCE ON DECISION AND CONTROL
GC: James L. Melsa, PC: Steven I. Marcus
Marriott Hotel, San Antonio, TX, 14-16 December 1983
23rd IEEE CONFERENCE ON DECISION AND CONTROL
GC: Abraham H. Haddad, PC: Michael P. Polis
Las Vegas Hilton, Las Vegas, NV, 12-14 December 1984
24th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Gene F. Franklin, PC: Anthony N. Michel
Bonaventure Hotel & Spa
Ft. Lauderdale, FL, 11-13 December 1985
25th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Anthony Ephremides, co-GC: Spyros Tzafestas
PC: H. Vincent Poor
Atheneum Intercontinental Hotel
Athens, GREECE; 10-12 December 1986
26th IEEE CONFERENCE ON DECISION AND CONTROL
GC: William S. Levine, PC: John Baillieul
Westin Century-Plaza Hotel
Los Angeles, CA, 9-11 December 1987

27th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Michael P. Polis, PC: William E. Schmitendorf
Hyatt Regency Austin on Town Lake
Austin, TX, 7-9 December 1988
28th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Leonard Shaw, PC: Tamer Basar
Hyatt Regency Tampa Hotel, Tampa, FL, 13-15 December
1989
29th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Charles J. Herget, PC: Raymond A. DeCarlo
Hilton Hawaiian Village, Honolulu, HI, 5-7 December 1990
30th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Derek Atherton, PC: Panos J. Antsaklis
Metropole Hotel, Brighton, ENGLAND, 11-13 December 1991
31st IEEE CONFERENCE ON DECISION AND CONTROL
GC: Tamer Baser, PC: Sergio Verdu
Westin La Paloma, Tucson, AZ, 16-18 December 1992
32nd IEEE CONFERENCE ON DECISION AND CONTROL
GC: Raymond A. DeCarlo, PC: Peter Ramadge
Marriott Rivercenter, San Antonio, TX, 15-17 December 1993
33rd IEEE CONFERENCE ON DECISION AND CONTROL
GC: Michael K. Masten, PC: N. Harris McClamroch
Buena Vista Palace, Lake Buena Vista, FL, 14-16 December
1994
34th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Panos J. Antsaklis, PC: Edward W. Kamen
New Orleans Hilton Riverside
New Orleans, LA, 13-15 December 1995

35th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Hidenori Kimura
Co-PCs: Katsuhisa Furuta, J. Douglas Birdwell
Portopia Hotel and International Conference Center
Kobe, Japan, 11-13 December 1996
36th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Anthony Michel, PC: Theodore E. Djaferis
Hyatt Regency San Diego, San Diego, CA, 10-12 December
1997
37th IEEE CONFERENCE ON DECISION AND CONTROL
GC: J. Douglas Birdwell, PC: David Castanon
Hyatt Regency Westshore, Tampa FL, 16-18 December 1998
38th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Edward W. Kamen, PC: Christos Cassandras
Crowne Plaza Hotel and Resort, Phoenix, AZ, 7-10
December 1999
39th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Robert R. Bitmead, PC: Cheryl B. Schrader
Sydney Convention and Exhibition Centre
Sydney, NSW Australia; 12-15 December 2000
40th IEEE CONFERENCE ON DECISION AND CONTROL
GC: Theodore E. Djaferis, PC: Kevin M. Passino
Hyatt Regency Grand Cypress, Orlando, FL, 4-7 December
2001
41st IEEE CONFERENCE ON DECISION AND CONTROL
GC: Ümit Özgüner, PC: Kenneth Loparo
The Venetian Hotel, Las Vegas, NV, 10-13 December 2002
42nd IEEE CONFERENCE ON DECISION AND CONTROL
GC: Frank K. Lewis, PC: Chaouki Abdallah
The Hyatt Regency Resort & Spa Maui, Hawaii, 9-12
December 2003

TECHNICAL PROGRAM

42nd IEEE CONFERENCE
ONDECISION AND CONTROL

9-12 December 2003
The Hyatt Regency Resort & Spa - Maui, Hawaii, USA

CDC03 Technical Program Tuesday December 9, 2003

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Poster/Interactive (PI)	Workshop
Room	Monarchy Ballroom	Regency A	Regency B	Regency C	Maui Suite 1	Maui Suite 2	Regency Boardroom	Maui Suite 3	Maui Suite 4	Guest Room 350	Guest Room 351	Maui Suite 5	Guest Room 450	Guest Room 451	Grand Promenade	Spats Trattoria

TuDPL: 08:00-09:00 Monarchy Ballroom — Plenary Talk: Vladimir Kucera

TuAW 08:30-16:00

TuA: 09:20 – 11:20

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI	Workshop
	Cooperative Control for Networked UAV I	Controllability, Observability and Output Feedback Design of Nonlinear Systems	Wireless Networks: Adaptation, Estimation, and Control	Linear Systems I	Hybrid Systems I	Stabilization of Networked Control Systems	Optimal Control I	Electro-mechanical Control Systems	Robust Control I	Distributed Parameter Systems I	Output Feedback I	Filtering and Estimation I	System Theoretic Methods in Quantum Control	Fault Detection	SIAM Poster Papers I	High School Students Workshop

TuNPL: 12:00-14:00 Sunset Terrace — Plenary Panel: International Funding Thrusts and Mechanisms

TuM: 14:20 – 16:20

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI
	Cooperative Control for Networked UAV II	Dynamics and Control of Nonlinear Systems	Control of Networks I	Linear Systems II	Hybrid Systems II	Networked Control Systems and Packet Losses	Optimal Control II	Emerging Control Applications	Robust Control II	Distributed Parameter Systems II	Output Feedback II	Filtering I	Predictive Control for Linear Systems	Fault Detection and Accommodation I	SIAM Poster Papers II

TuP: 16:40 – 18:40

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI
	Cooperative Control of Multiple Autonomous Agents	Nonlinear Output Regulation and Stabilization	Control of Networks II	Linear Systems III	Hybrid Systems III	Networked Control Systems with Limited Communication	Optimal Control III	Water Vehicles	Robust Estimation	Distributed Parameter Systems III	Discrete-time Nonlinear Systems	Filtering II	Predictive Control for Nonlinear Systems	Fault Detection and Accommodation II	SIAM Poster Papers III

TuES1: 19:00-20:20 Maui Suite 3 — Honeywell Industry Sponsor Session

TuES2: 19:00-20:20 Maui Suite 4 — National Instruments Industry Sponsor Session

CDC03 Technical Program Wednesday December 10, 2003

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Poster/Interactive (PI)	Workshop
Monarchy Ballroom	Regency A	Regency B	Regency C	Maui Suite 1	Maui Suite 2	Regency Boardroom	Maui Suite 3	Maui Suite 4	Guest Room 350	Guest Room 351	Maui Suite 5	Guest Room 450	Guest Room 451	Grand Promenade	Spats Trattoria

WeDPL: 08:00-09:00 Monarchy Ballroom — Plenary Talk: Katsuhita Furuta

WeA: 09:20 – 11:20

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI	Workshop
Cooperative Control	Trends in Advanced Nonlinear Control	Communication Networks: Scheduling and Quality of Service	Behavioral System theory	Stability of Hybrid Systems	Adaptive Output Feedback Systems	Optimal Control IV	Automotive and Vehicle Control	Linear Robust Control	Distributed Parameter Systems IV	Computational and Numerical Issues in Systems and Control	Chaotic Systems	Randomized Algorithms for Analysis and Synthesis of Robust Control Systems	Fault Detection and Accommodation III	SIAM Poster papers IV	WeAW 09:20-13:20 Women in Control Workshop

WeNPL: 12:00-14:00 Sunset Terrace — Plenary Panel: History of Control

WeM: 14:20 - 16:20

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI
Multiple Vehicle Coordinated Control	Nonlinear Systems I	Pricing and Optimization of Communication Networks	Nanotechnology: Control Needs and Related Perspectives (I)	Optimal Timing Control of Hybrid Systems	Applications of Adaptive Control	Optimal Control V	Automotive Vehicle Control	H-infinity Control	Control and Control-Oriented Modeling in Distributed Combustion and Flow	Computational Method for System Properties	Control of Nonlinear Systems	Statistical Learning Methods in Optimization, Control and System Identification	Fault-Tolerant Systems	Linear Systems and Control Education

WeP: 16:40-18:40

Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	PI
Multiple Agent Systems	Nonlinear Systems II	Stochastic Network Models	Nanotechnology: Control Needs and Related Perspectives (II)	Discrete-Event Systems	Adaptive Control Applications	New Trends on Geometric and Optimal Control I	Automotive and Aerospace Systems	Markov Processes	Structured and Distributed Control	Computational Methods	Non-Holonomic Systems and Robotics	Statistical Learning Methods	Sliding Mode Control of Linear System	On Control Education: an Interactive Interdisciplinary Session

WeES1: 19:00-20:30 Regency A	WeES2: 19:00-20:20 Maui Suite 4	WeES3: 19:00-20:30 Monarchy Ballroom
Xerox Industry Sponsor Session	The MathWorks Industry Sponsor Session	Keynote Talk: J. Bryzek, Control issues of MEMS

CDC03 Technical Program Thursday December 11, 2003

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Poster/Interactive (PI)
	Monarchy Ballroom	Regency A	Regency B	Regency C	Maui Suite 1	Maui Suite 2	Regency Boardroom	Maui Suite 3	Maui Suite 4	Guest Room 350	Guest Room 351	Maui Suite 5	Guest Room 450	Guest Room 451	Grand Promenade
ThDPL: 08:00–09:00 Monarchy Ballroom Plenary Talk: Tamer Basar															
ThA: 09:20–11:20	Graph Theoretic Methods in Cooperative Control	Nonlinear Systems III	Fundamental Limits on Communication and Control	Parametric programming in Control System Design	Languages, Logic and Discrete-Events Systems	Direct Adaptive Control	New Trends on Geometric and Optimal Control II	Mechanical Systems I	Language-Based Descriptions of Multi-Modal Control Tasks	Constrained Control II	Control Applications I	Identification	Polynomial Methods in Control	Sliding Mode Control I	Strategies for Human-Automaton Resource Entity Deployment
ThNPL: 12:00–13:40 Monarchy Ballroom Plenary Panel: CSS Presidents															
ThM: 14:00–16:00	Formation Control	Nonlinear Systems IV	Stability of Communication Networks	Model Predictive Control	Petri Nets	Modeling and Adaptation	Optimization Algorithms	Mechanical Systems II	Power Systems	Constrained Control II	Control Applications II	Identification Algorithms	Control of Time Delay Systems I	Sliding Mode Control II	Control Applications
ThP: 16:20–18:20	Cooperative and Noncooperative Systems under Constrained Information	Nonlinear Systems Stability Theory and Applications	Control of Communication Systems	Optimization of Stochastic Systems	Stability of Nonlinear Switched Systems	Robust Adaptive Control	Optimization Methods and Algorithms	Mechanical Systems III	Learning in Control	Constrained Nonlinear Systems	Control Applications III	Identification and Estimation	Control of Time Delay Systems II	Advances in High Order Sliding Modes	Advances in Plasma Control in Tokamaks

CDC03 Technical Program Friday December 12, 2003

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6	Track 7	Track 8	Track 9	Track 10	Track 11	Track 12	Track 13	Track 14	Poster/Interactive (PI)
Room	Monarchy Ballroom	Regency A	Regency B	Regency C	Maui Suite 1	Maui Suite 2	Regency Boardroom	Maui Suite 3	Maui Suite 4	Guest Room 350	Guest Room 351	Maui Suite 5	Guest Room 450	Guest Room 451	Grand Promenade
FrA: 08:40-10:40	Positive Polynomials in Control	Nonlinear Systems V	Fuzzy Systems I	Process Control	Stability of Switched Systems	Learning and Optimizing Based on Experience Sample Path Approaches: From PA to MDPs	Estimation I	Systems Theoretic Tools for Dynamic Vision.	Aircraft Control	Control Education	Computational Methods and Linear Inequalities	Uncertain Systems	Stability of Time-delay Systems I	ISS and Lyapunov Approaches in Nonlinear Systems	Discrete Events and Learning
FrM: 12:40-14:40	Linear Matrix Inequalities	Nonlinear Systems VI	Fuzzy Systems II	Model Reduction	Switched Systems I	Stochastic Systems I	Estimation II	Visual Servo Control	Missile and Aircraft GNC	Control in Manufacturing	Computational Methods for Systems	System Identification	Stability of Time-delay Systems II	Stability of Nonlinear Systems	
FrP: 15:00-17:00	LMI/LPV	Nonlinear Systems VII	Neural Network Control	Model Reduction and Estimation	Switched Systems II	Stochastic Systems II	Nonlinear Estimation	Robotics	Motor Control Systems	Manufacturing and Finance	Stability and Control of Discrete-time Systems	Uncertainty in System ID	Time-Delay Systems	Geometric Methods for Nonlinear Systems	
FrE: 17:20-19:20	Linear Parameter Varying Methods	Nonlinear Uncertain Systems	Neural Networks Optimization	Modeling	Switched Systems III	Stochastic Discrete-Event Systems and Markov Processes	Applications of Estimation	Mechanical Systems and Robotics	Noise and Vibration Control	Biological and Biomedical Systems	Stability of Linear Systems	Practical System Identification	Preview and Filtering in Time-delay Systems	Control of Large-scale Systems	

FrDPL: 11:00-12:00 Monarchy Ballroom
Bode Lecture: Lennart Ljung

11:00
Dynamic Programming Approach to a Minimum Distance Optimal Control Problem, 239

Melikyan, Arik	Inst. for Problems in Mechanics
Hovakimyan, Naira	Virginia Inst. of Tech.
Ikeda, Yutaka	Boeing Company

TuA08	Maui Suite 3
Electromechanical Control Systems	**Regular Session**
Chair: Vautier, Benjamin Jean Guillaume	Univ. of Newcastle
Co-Chair: Mukherjee, Ranjan	Michigan State Univ.

09:20
A Switching Control Strategy for Magnetic Bearings with a State-Dependent Bias, 245

Motee, Nader	Louisiana State Univ.
de Queiroz, Marcio	Louisiana State Univ.

09:40
State-Dependent Sliding-Sector VS-Control and Application to Swing-Up Control of Pendulum, 251

Suzuki, Satoshi	Tokyo Denki Univ.
Furuta, Katsuhisa	Tokyo Denki Unversity
Pan, Yaodong	National Inst. of Advanced Industrial Science and Tech. (AIST)

10:00
Exponential Stabilization of the Rolling Sphere: Stability Analysis, 257

Das, Tuhin	Michigan State Univ.
Mukherjee, Ranjan	Michigan State Univ.

10:20
Perspective Image for Subspace of Hemisphere Space by Digital Image Conversion, 263

Sudo, Yoshie	Tokyo Univ. of Tech.
Hashimoto, Hiroshi	Tokyo Univ. of Tech.
Ishii, Chiharu	Kogakuin Univ.

10:40
Avoiding Hysteresis in Vibration Control Using Piezoelectric Laminates, 269

Vautier, B. J. G.	Univ. of Newcastle
Moheimani, S. O. R.	Univ. of Newcastle

TuA09	Maui Suite 4
Robust Control I	**Regular Session**
Chair: Shafai, Bahram	Northeastern Univ.
Co-Chair: Ohta, Yoshito	Osaka Univ.

09:20
Dynamical Robust Backstepping Using a Combined Sliding Modes and High-Gain Observer Approach, 275

Gorman, Jason	National Inst. of Standards and Tech.
Jablokow, Kathryn	Pennsylvania State Univ.
Cannon, David	Pennsylvania State Univ.

09:40
Robust Tracking Problem for Continuous Time Stochastic Uncertain Systems, 282

Yoon, Myung-gon	The Univ. of New South Wales
Ugrinovskii, Valery	Australian Defence Force Acad.

10:00
Robust Control for Uncertain Singular Systems with Disk Pole Contraints, 288

Hu, Gang	Guangdong Univ. of Tech.
Xu, Jianmin	South China Univ. of Tech.

10:20
Robust Nonlinear Control of Transient Stability of Power Systems., 294

Brahim, BEHAR	Lab. des Signaux et Systčms
Françoise, Lamnabhi-Lagarrigue	Lab. des Signaux et Systčms
Tarek, Ahmed-Ali	Ec. Sup. des Etudes et Tech. d'Armements

10:40
Weight Selection in Mixed Sensitivity Robust Control for Improving the Sinusoidal Tracking Performance, 300

Oloomi, Hossein M.	Purdue Univ. at Fort Wayne
Shafai, Bahram	Northeastern Univ.

11:00
L2 Gain Analysis of Linear Parameter Varying Systems: Dual Problem and Its Finite Dimensional Approximation, 306

Ohta, Yoshito	Osaka Univ.
Kunitake, Takashi	Sharp Corp.

TuA10	Guest Room 350
Distributed Parameter Systems I	**Regular Session**
Chair: Bewley, Thomas R.	UC San Diego
Co-Chair: Demetriou, Michael A.	Worcester Pol. Inst.

09:20
Set Point Boundary Control for a Nonlinear Distributed Parameter System, 312

Byrnes, Christopher I.	Washington Univ.
Gilliam, David S.	Texas Tech. Univ.
Isidori, Alberto	Washington Univ.
Shubov, Victor I.	Texas Tech. Univ.

09:40
A Naucausal Strategy for Feedback Control of Spatially-Parabolic Flow Systems, 318

Cathalifaud, Patricia	UCSD
Bewley, Thomas R.	UC San Diego

10:00
Robust Fault Tolerant Controller in Parabolic Distributed Parameter Systems with Actuator Faults, 324

Demetriou, Michael A.	Worcester Pol. Inst.

10:20
An Optimal Finite-Diemensional Modeling of Heat and Diffusion Systems with Partially Known Eigenstructure, 330

Imai, Jun	Okayama Univ.
Ando, Yasuaki	Okayama Univ.
Konishi, Masami	Okayama Univ.

10:40
A Way to Deal with Nonlinear Boundray Conditions in Open-Channel Optimal Control Problems, 336

Ouarit, Hicham	Lab. Automatique De Grenoble
Lefevre, Laurent	Esisar-inpg
Georges, Didier	ENSIEG - INPG
Begovich, Ofelia	Cinvestav GDL

11:00
Abstract Spatial Hybrid Systems for Image Processing, 342

Mukhopadhyay, Supratik	UPENN

TuA11	Guest Room 351
Output Feedback I	**Regular Session**
Chair: Trofino, Alexandre	Federal Univ. of Santa Catarina
Co-Chair: Maggiore, Manfredi	Univ. of Toronto

09:20
Observer-Based IDA Control of Synchronous Generators, 344

Maya-ortiz, Paul	Univ. Nacional Autonoma De Mexico
Espinosa-Perez, Gerardo	Univ. Nacional Autonoma de Mexico

09:40
Finite Time Control Via Output Feedback: A General Approach, 350

Amato, Francesco	Univ. degli Studi di Catanzaro
Ariola, Marco	Univ. degli Studi di Napoli Federico II
Cosentino, Carlo	Univ. degli Studi di Napoli Federico II

10:00
Reduced-Order Output Feedback Control of a Class of Uncertain Nonlinear Systems, 356

Coutinho, Daniel Ferreira	Pontificia Univ. Catolica do Rio Grande do Sul
Trofino, Alexandre	Federal Univ. of Santa Catarina
Barbosa, Karina	Federal Univ. of Santa Catarina

10:20
Robust Output Feedback Tracking with a Matching Condition, 362

Consolini, Luca	Univ. of Parma
Maggiore, Manfredi	Univ. of Toronto

10:40
Output Feedback Variable Structure Control of Nonlinear Mechanical Systems, 368

Xian, Bin	Clemson Univ.
de Queiroz, Marcio	Louisiana State Univ.
Dawson, Darren M.	Clemson Univ.
McIntyre, Michael	Clemson Univ.

11:00
Robust Linear Dynamic Output Feedback Controllers for a Class of Nonlinear Systems, 374

Coutinho, Daniel Ferreira	Pontificia Univ. Catolica do Rio Grande do Sul
Trofino, Alexandre	Federal Univ. of Santa Catarina
Barbosa, Karina	UNIPLAC

TuA12	**Maui Suite 5**
Filtering and Estimation	**Regular Session**
Chair: Medvedev, Alexander V.	Uppsala Univ.
Co-Chair: Heemels, Maurice	Eindhoven Univ. of Tech.

09:20
Linear H-Infinity Filter Design for a Class of Uncertain Nonlinear Systems, 380

Coutinho, Daniel Ferreira	Pontificia Univ. Catolica do Rio Grande do Sul
Barbosa, Karina	UFSC
Trofino, Alexandre	Federal Univ. of Santa Catarina
de Souza, Carlos E.	Lab. Nacional de Computacao Cientifica - LNCC

09:40
Robust Noncausal Filtering of Speech, 386

Einicke, Garry A.	CSIRO Australia

10:00
State Estimation for Systems with Varying Sampling Rate, 391

Schinkel, Michael	Univ. of Glasgow
Heemels, Maurice	Eindhoven Univ. of Tech.
Juloski, Aleksandar	Eindhoven Univ. of Tech.

10:20
State Matrix Kalman Filter, 393

Choukroun, Daniel	Tech. - Israel Inst. of Tech.
Weiss, Haim M.	Rafael
Bar-Itzhack, Itzhack Y.	Tech. - Israel Inst. of Tech.
Oshman, Yaakov	Tech. - Israel Inst. of Tech.

10:40
Stability of an Windup Prevention Scheme in Recursive Parameter Estimation, 399

Medvedev, Alexander V.	Uppsala Univ.

11:00
On Bias Compensation Estimation for Noisy AR Process, 405

Jia, Li-juan	Kyushu Univ.
Kanae, Shunshoku	Kyushu Univ.
Yang, Zi-jiang	Kyushu Univ.
Wada, Kiyoshi	Kyushu Univ.

TuA13	**Guest Room 450**
System Theoretic Methods in Quantum Control	**Invited Session**
Chair: Altafini, Claudio	SISSA
Co-Chair: Khaneja, Navin	Harvard Univ.
Organizer: Altafini, Claudio	SISSA
Organizer: Khaneja, Navin	Harvard Univ.

09:20
Quantum Markovian Master Equation Driven by Coherent Controls: A Controllability Analysis (I), 411

Altafini, Claudio	SISSA

09:40
Resonance of Minimizers for N-Level Quantum Systems (I), 416

Boscain, Ugo V.	SISSA-ISAS
charlot, gregoire	SISSA-ISAS

10:00
Optimal Control of Coupled Spin Dynamics under Cross-Correlated Relaxation (I), 422

Khaneja, Navin	Harvard Univ.
Glaser, Steffen	Tech. Univ. of Munich

10:20
The Controllability of Infinite Quantum Systems (I), 428

Brockett, Roger	Harvard Univ.
Rangan, Chitra	Univ. of Michigan
Bloch, Anthony Michael	Univ. of Michigan

10:40
Lyapunov-Based Control of Quantum Systems, 434

Grivopoulos, Symeon	Univ. of California, Santa Barbara
Bamieh, Bassam	Univ. of California at Santa Barbara

11:00
Observability, Measurement and Parameter Identification of Quantum Mechanical Systems, 439

D'Alessandro, Domenico	Iowa State Univ.
Albertini, Francesca	Univ. Di Padova

TuA14	**Guest Room 451**
Fault Detection	**Regular Session**
Chair: Simani, Silvio	Univ. of Ferrara
Co-Chair: Georges, Didier	ENSIEG - INPG

09:20
Fault Diagnosis of Non--Linear Dynamic Processes Using Identified Hybrid Models, 445

Simani, Silvio	Univ. of Ferrara
Patton, Ron J.	Univ. of Hull

09:40
Residual Design for Dynamic Processes Using De--Coupling Technique, 451

Diversi, Roberto	Univ. of Bologna
Simani, Silvio	Univ. of Ferrara

10:00
Robust Fault Diagnosis for Linear Descriptor Systems Using Proportional Integral Observers, 457

Marx, Benoit	Lab. D'automatique De Grenoble
Koenig, D.	Inpg - Esisar
Georges, Didier	ENSIEG - INPG

10:20
Filtering of Dynamic Measurements in Intelligent Sensors for Fault Detection Based on Data-Driven Models, 463

Lughofer, Edwin	Johannes Kepler Univ. Linz
Efendic, Hajrudin	Johannes Kepler Univ. Linz
Del Re, Luigi	Johannes Kepler Univ. Linz
Klement, Erich Peter	Johannes Kepler Univ. Linz

10:40
Threshold Calculation Using LMI-Technique and Its Integration in the Design of Fault Detection Systems, 469

Ding, Steven X.	Univ. of Duisburg
Zhang, Ping	Univ. of Duisburg
Frank, Paul M.	Gerhard-Mercator-Univ. Duisburg
Ding, E.L.	Univ. of Applied Sciences Gelsenkirchen

11:00
A Condition of the Eigenvalues of Detection Filters for Disturbance
Attenuation: An Invariant Zero Approach, 475
 Kim, Yongmin   Seoul National Univ.
 Park, Jaehong   Seoul National Univ.

TuAPI   **Grand Promenade**
SIAM Poster Papers I **Poster/Interactive Paper Session**
 Chair: Abdallah, Chaouki T.   Univ. of New Mexico
09:20
Existence of Optimal Controls for a General Class of Impulsive
Systems on Banach Spaces, 480
 Ahmed, Nasiruddin   Univ. of Ottawa

Fourier Analysis and the Takenaka-Malmquist Basis, 486
 Bultheel, Adhemar   K.U.Leuven
 Carrette, Pierre   Shell Oil Company, Houston

Asymptotic Control of Pairs of Oscillators Coupled by a Repulsion*
 Czarnecki, Marc-Olivier   Univ. Montpellier 2
 Cabot, Alexandre   Univ. de Limoges

Uncertain Dissipative Linear Systems. Part i. Robust Analysis and
Certification*
 Barb, Florin Dan   Delft Univ. of Tech.
 Ben Tal, Aharon   Tech. - Israel Inst. of Tech.
 Nemirovski, Arkadi   Tech. - Israel Inst. of Tech.

TuAW   **Spats Trattoria**
High School Students
Workshop
 Chair: Pasik-Duncan,   Univ. of Kansas
 Bozenna

TuNPL   **Sunset Terrace**
Plenary Panel: International   **Plenary Panel**
Funding Thrusts and
Mechanisms
 Chair: Werbos, Paul J.   NSF

TuM01   **Monarchy Ballroom**
Cooperative Control for   **Invited Session**
Networked Uninhabited
Autonomous Vehicles II
 Chair: Passino, Kevin   Ohio State Univ.
 Co-Chair: Sparks, Andrew G. Air Force Res. Lab.
 Organizer: Passino, Kevin   Ohio State Univ.
14:20
Stability Properties of a Cooperative Receding Horizon Controller
(I), 492
 Cassandras, Christos G.   Boston Univ.
 Li, Wei   Boston Univ.
14:40
Control of Leader-Follower Formations of Terrestrial UAVs (I), 498
 Chen, Xingping   Ohio State Univ.
 Serrani, Andrea   The Ohio State Univ.
 Ozbay, Hitay   Ohio State Univ.
15:00
Stability Analysis of Stochastically Varying Formations of Dynamic
Agents (I), 504
 Gupta, Vijay   California Inst. of Tech.
 Hassibi, Babak   California Inst. of Tech.
 Murray, Richard M.   California Inst. of Tech.
15:20
Adaptive Models of Pop up Threats for Multi-Agent Persistent Area
Denial (I), 510
 Subramanian, Shankar   The Ohio State Univ.
 Krishnan
 Cruz, Jose B.   The Ohio State Univ.

15:40
A Hybrid System Model and Overlapping Decomposition for
Vehicle Flight Formation Control (I), 516
 Chen, Qi   The Ohio State Univ.
 Ozguner, Umit   The Ohio State Univ.
16:00
Cooperative Scheduling of Tasks for Networked Uninhabited
Autonomous Vehicles (I), 522
 Gil, Alvaro   The Ohio State Univ.
 Passino, Kevin   The Ohio State Univ.
 Sparks, Andrew G.   Air Force Res. Lab.

TuM02   **Regency A**
Dynamics and Control of   **Invited Session**
Nonlinear Systems
 Chair: Bloch, Anthony M.   Univ. of Michigan
 Co-Chair: Zenkov, Dmitry North Carolina State Univ.
 Organizer: Bloch, Anthony M.   Univ. of Michigan
 Organizer: Zenkov, Dmitry North Carolina State Univ.
14:20
Optimality of Double Bracket and Generalized Double Bracket
Flows (I), 528
 Bloch, Anthony M.   Univ. of Michigan
 Iserles, Arieh   Univ. of Cambridge
14:40
Controlled Lagrangian Methods and Tracking of Accelerated
Motions (I), 533
 Zenkov, Dmitry   North Carolina State Univ.
 Bloch, Anthony M.   Univ. of Michigan
 Marsden, Jerrold E.   California Inst. of Tech.
15:00
Collision Avoidance for Multiple Agent Systems (I), 539
 Chang, Dong Eui   Univ. of California
 Shadden, Shawn   California Inst. of Tech.
 Marsden, Jerrold E.   California Inst. of Tech.
 Olfati-Saber, Reza   California Inst. of Tech.
15:20
Asymptotic Stability of Rigid Body Attitude Systems (I), 544
 Shen, Jinglai   Univ. of Michigan
 Sanyal, Amit   Univ. of Michigan
 McClamroch, N. Harris   Univ. of Michigan
15:40
Coordinated Control of Networked Mechanical Systems with
Unstable Dynamics (I), 550
 Nair, Sujit   Princeton Univ.
 Leonard, Naomi Ehrich   Princeton Univ.
 Moreau, Luc   Eindhoven Univ. of Tech.
16:00
Information Patterns and Hedging Brockett's Theorem in
Controlling Vehicle Formations (I), 556
 Baillieul, John   Boston Univ.
 Suri, Atul   Boston Univ.

TuM03   **Regency B**
Control of Networks I   **Regular Session**
 Chair: Chiasson, John   Univ. of Tennessee
 Co-Chair: Lagoa, Constantino Pennsylvania State Univ.
 M.
14:20
End-To-End Bandwidth Guarantees through Fair Local Spectrum
Share in Wireless Ad-Hoc Networks, 564
 Sarkar, Saswati   Univ. of Pennsylvania
 Tassiulas, Leandros   Univ. of Thessaly
14:40
Optimal Power Control in Wireless Data Networks with Outage-
Based Utility Guarantees, 570
 Dey, Subhrakanti   Univ. of Melbourne
 Evans, Jamie Scott   Univ. of Melbourne

15:00
A Novel Approach to Traffic Engineering for Ad-Hoc Networks, 576
Movsichoff, Bernardo Adrián	Pennsylvania State Univ.
Lagoa, Constantino M.	Pennsylvania State Univ.

15:20
The Effect of Time Delays in the Stability of Load Balancing Algorithms for Parallel Computations, 582
Birdwell, J. Douglas	Univ. of Tennessee, Knoxville
Chiasson, John	Univ. of Tennessee, Knoxville
Abdallah, Chaouki T.	Univ. of New Mexico
Tang, Zhong	Univ. of Tennessee, Knoxville
Alluri, Nivedita	Andhra Univ. India
Wang, Tse-Wei	Univ. of Tennessee, Knoxville

15:40
Distributed Consensus Protocols for Coordinating Buyers, 588
Bauso, Dario	Univ. di Palermo
Giarre, Laura	Univ. Di Palermo
Pesenti, Raffaele	Univ. of Palermo

16:00
Controlling Internet Queue Dynamics Using Recursively Identified Models, 593
Gunnarsson, Frida	Linkoping Univ.
Gunnarsson, Fredrik	Linkoping Univ.
Gustafsson, Fredrik	Linkoping Univ.

TuM04	Regency C
Linear Systems II	**Regular Session**
Chair: Mestha, Lalit K.	Xerox Corp.
Co-Chair: Owens, David H.	The Univ. of Sheffield

14:20
Exploiting Symmetry for the Distributed Control of Spatially Interconnected Systems, 598
Recht, Benjamin	MIT
D'Andrea, Raffaello	Cornell Univ.

14:40
Controllability and Optimization for Differential Linear Repetitive Processes, 604
Dymkou, Siarhei	Univ. of Ballarat
Rogers, Eric	Univ. of Southampton
Dymkov, Michael	National Acad. of Sciences, Belarus
Galkowski, Krzysztof	Univ. of Zielona Gora
Owens, David H.	The Univ. of Sheffield

15:00
Robust H-Inf Filter Design of Uncertain Descriptor Systems with Discrete and Distributed Delays, 610
Han, Qing-long	Central Queensland Univ.
Yue, Dong	Nanjing Normal Univ.

15:20
Stabilization and Pole Placement with Respect to State Constraints: A Robust Design Via LMI, 616
EL Faiz, Samira	Univ. Cadi Ayyad
Ait Rami, Mustapha	Univ. Cadi Ayyad
Benzaouia, Abdellah	Univ. Cadi Ayyad

15:40
Robust Strictly Positive Real Synthesis of Polynomial Segments for Discrete Time Systems, 622
Yu, Wensheng	Chinese Acad. of Sciences
Wang, Long	Peking Univ.
xiang, yong	Deakin Univ.

16:00
H_{infty} Control of Discrete Linear Repetitive Processes, 628
Paszke, Wojciech	Univ. of Zielona Gora
Galkowski, Krzysztof	Univ. of Zielona Gora
Rogers, Eric	Univ. of Southampton
Owens, David H.	The Univ. of Sheffield

TuM05	Maui Suite 1
Hybrid Systems II	**Regular Session**
Chair: Pappas, George J.	Univ. of Pennsylvania
Co-Chair: Branicky, Michael S.	Case Western Res. Univ.

14:20
Finite Bisimulations of Controllable Linear Systems, 634
Tabuada, Paulo	Univ. of Notre Dame
Pappas, George J.	Univ. of Pennsylvania

14:40
A Logic-Based Hybrid Solver for Optimal Control of Hybrid Systems, 640
Bemporad, Alberto	Univ. of Siena
Giorgetti, Nicolo'	Univ. of Siena

15:00
Viability, the Solution Set and Fixed Point Approximation of Hybrid Systems, 646
Guay, Martin	Queen's Univ.
Labinaz, Gino	Queen's Univ.

15:20
Regions of Stability for Limit Cycles of Piecewise Linear Systems, 651
Goncalves, Jorge M.	Caltech

15:40
RRTs for Nonlinear, Discrete, and Hybrid Planning and Control, 657
Branicky, Michael S.	Case Western Res. Univ.
Curtiss, Michael	CWRU
Levine, Joshua	CWRU
Morgan, Stuart	CWRU

16:00
Quality of Service Control in Soft Real-Time Applications, 664
Palopoli, Luigi	Scuola Superiore Sant'anna
Cucinotta, Tommaso	ReTiS Lab.
Bicchi, Antonio	Univ. di Pisa

TuM06	Maui Suite 2
Networked Control Systems and Packet Losses	**Regular Session**
Chair: Lemmon, Michael	Univ. of Notre Dame
Co-Chair: Tanner, Herbert	Univ. of New Mexico

14:20
Optimal Dropout Compensation in Networked Control Systems, 670
Ling, Qiang	Univ. of Notre Dame
Lemmon, Michael	Univ. of Notre Dame

14:40
Stability of Networked Control Systems in the Presence of Packet Losses, 676
Azimi-sadjadi, Babak	Rensselaer Pol. Inst.

15:00
Decentralized Spacing Control of a String of Multiple Vehicles Over Lossy Datalinks, 682
Teo, Rodney	Stanford Univ.
Stipanovic, Dusan M.	Stanford Univ.
Tomlin, Claire J.	Stanford Univ.

15:20
Wireless Communication Tradeoffs in Distributed Control, 688
Liu, Xiangheng	Stanford Univ.
Goldsmith, Andrea	Stanford Univ.

15:40
Ethernet-Based Predictive Control of an Industrial Hydraulic Machine, 695
Tang, Poi Loon	Univ. of British Columbia
de Silva, Clarence W.	Univ. of British Columbia

16:00
Kalman Filtering with Intermittent Observations, 701
Sinopoli, Bruno	Univ. of California at Berkeley
Schenato, Luca	Univ. of California at Berkeley
franceschetti, massimo	Univ. california at berkeley
Poolla, Kameshwar	Univ. of California at Berkeley
Jordan, Michael	Univ. of California at Berkeley
Sastry, Shankar	Univ. of California at Berkeley

15:20
Riesz Basis Generation of a Serially Connected String System under Joint Damping Feedbacks, 827

Guo, Bao-Zhu	Acad. of Mathematics and System Sciences,
Xie, Yu	Acad. of Mathematics and System Sciences,

15:40
Solution of H_{infty} Control Problem for Hybrid Periodic Infinite Dimensional Systems and General Quadratic Forms I, 833

BARABANOV, Nikita E.	North Dakota State Univ. ND, USA

16:00
Solution of H_{infty} Control Problem for Hybrid Periodic Infinite Dimensional Systems and General Quadratic Forms II, 839

BARABANOV, Nikita E.	North Dakota State Univ. ND, USA

TuM11	**Guest Room 351**
Output Feedback II	**Regular Session**
Chair: Scherer, Carsten W.	Delft Univ. of Tech.
Co-Chair: Ariola, Marco	Univ. degli Studi di Napoli Federico II

14:20
Feedback Control of Growth Rate and Surface Roughness in Thin Film Growth, 845

Lou, Yiming	Univ. of California, Los Angeles
Christofides, Panagiotis D.	Univ. of California at Los Angeles

14:40
A BMI Optimization Approach to Robust Output-Feedback Control, 851

Kanev, Stoyan	Delft Univ. of Tech.
Scherer, Carsten W.	Delft Univ. of Tech.
Verhaegen, Michel	Univ. of Twente
De Schutter, Bart	Delft Univ. of Tech.

15:00
Measurement Feedback Controllers with Constraints and Their Relation to the Solution of Hamilton Jacobi Inequalities, 857

Battilotti, Stefano	Univ. La Sapienza

15:20
Fuzzy H-Infinity Output Feedback Control Design for Singularly Perturbed Systems: An LMI Approach, 863

Assawinchaichote, Wudhichai	Univ. of Auckland
Nguang, Sing Kiong	Univ. of Auckland

15:40
Optimal Regulation for Linear Non Right-Invertible Plants, 869

Ambrosino, Giuseppe	Univ. degli Studi di Napoli Federico II
Ariola, Marco	Univ. degli Studi di Napoli Federico II
Pironti, Alfredo	Univ. degli Studi di Napoli Federico II

16:00
Observer-Based Dynamic Surface Control for Lipschitz Nonlinear Systems, 874

Song, Bongsob	Univ. of California at Berkeley
Hedrick, Karl	Univ. of California at Berkeley

TuM12	**Maui Suite 5**
Filtering I	**Regular Session**
Chair: de Souza, Carlos E.	Lab. Nacional de Computacao Cientifica - LNCC
Co-Chair: Gustafsson, Fredrik	Linkoping Univ.

14:20
Robust Filtering for Uncertain Linear Systems with State-Dependent Noise, 880

Barbosa, Karina	UFSC
de Souza, Carlos E.	Lab. Nacional de Computacao Cientifica - LNCC
Trofino, Alexandre	Federal Univ. of Santa Catarina

14:40
Polynomial Extended Kalman Filtering for Discrete-Time Nonlinear Stochastic Systems, 886

Germani, Alfredo	Univ. of L'Aquila
Manes, Costanzo	Univ. of L'Aquila
Palumbo, Pasquale	Istituto di Analisi dei Sistemi ed Informatica IASI-CNR

15:00
A Modeling and Filtering Framework for Linear Differential-Algebraic Equations, 892

Schön, Thomas	Linköping Univ.
Gerdin, Markus	Linköpings Univ.
Glad, S. Torkel	Linkoping Univ.
Gustafsson, Fredrik	Linkoping Univ.

15:20
Filtering Equations in Infinite Dimensional Spaces with Mixed Type Observation, 898

Florchinger, Patrick A.	Univ. of Metz

15:40
Regime Switching Stochastic Approximation Algorithms with Switched ODE Limit, 900

Yin, George	Wayne State Univ.
Krishnamurthy, Vikram	Univ. of British Columbia
Ion, Cristina	Wayne State Univ.

16:00
Robust Filtering for Uncertain Discrete-Time Systems: An Improved LMI Approach, 906

Xie, Lihua	Nanyang Tech. Univ.
Lu, Lilei	Northeastern Univ.
Zhang, David	The Hong Kong Pol. Univ.
Zhang, Huanshui	Hong Kong Pol. Univ.

TuM13	**Guest Room 450**
Predictive Control for Linear Systems	**Regular Session**
Chair: Camacho, Eduardo F.	Univ. of Sevilla
Co-Chair: Grimble, Michael John	Univ. of Strathclyde

14:20
Constrained Min-Max Predictive Control: A Polynomial-Time Approach, 912

Alamo, Teodoro	Univ. de Sevilla
Muñoz de la Peña, David	Univ. de Sevilla
Limon, Daniel	Univ. de Sevilla
Camacho, Eduardo F.	Univ. of Sevilla

14:40
Min Max MPC Based on a Graph Problem, 917

Alamo, Teodoro	Univ. de Sevilla
Muñoz de la Peña, David	Univ. de Sevilla
Camacho, Eduardo F.	Univ. of Sevilla

15:00
Predictive Feedback Control, 923

Giovanini, Leonardo	Industrial Control Centre
Grimble, Michael John	Univ. of Strathclyde

15:20
A Full Solution to the Constrained Stochastic Closed-Loop MPC Problem Via State and Innovations Feedback and Its Receding Horizon Implementation, 929

Van Hessem, Dennis H.	Delft Univ. of Tech.
Bosgra, Okko H.	Delft Univ. of Tech.

15:40
Disturbance Attenuation for Constrained Discrete-Time Systems Via Receding Horizon Controls, 935

Kim, Ki-Baek	INRIA-ENS

16:00
Robust Receding Horizon Control - Analysis & Synthesis, 941
Grieder, Pascal   ETH , Zurich
Parrilo, Pablo A.   Swiss Federal Inst. of Tech.
Morari, Manfred   Swiss Federal Inst. of Tech.

Chair: Staroswiecki, Marcel   Univ. des Sciences et Tech. Lille
Co-Chair: De Persis, Claudio   Univ. di Roma
14:20
Detecting Faults from Encoded Information, 947
De Persis, Claudio   Univ. di Roma
14:40
Sliding Mode Multiple Observer for Fault Detection and Isolation., 953
Akhenak, Abdelkader   Inst. national Pol. de lorraine
Chadli, Mohammed   CRAN-INPL-CNRS, UMR 7039
Maquin, Didier   CRAN-INPL
Ragot, Jose   CRAN-INPL
15:00
Actuator Faults and the Linear Quadratic Problem, 959
Staroswiecki, Marcel   Univ. des Sciences et Tech. Lille
15:20
Generic Signature Generation Tool for Diagnosis and Parametric Estimation of Multi-Variable Dynamical Nonlinear Systems, 966
Youssef, Bilal   ENSIEG - INPG
Alamir, Mazen   ENSIEG - INPG
15:40
Application of Probabilistic Robustness Technique to the Fault Detection System Design, 972
Ding, Steven X.   Univ. of Duisburg
Zhang, Ping   Univ. of Duisburg
Frank, Paul M.   Gerhard-Mercator-Univ. Duisburg
Ding, E.L.   Univ. of Applied Sciences
                                      Gelsenkirchen
16:00
Multivariable Control and Failure Accommodation in Eye-Head-Torso Target Tracking, 978
Chang, Bor-chin   Drexel Univ.
Hu, Chunlong   Drexel Univ.

Chair: Abdallah, Chaouki T.   Univ. of New Mexico
14:20
*Uncertain Dissipative Linear Systems. Part II. Robust Synthesis**
Barb, Florin Dan   Delft Univ. of Tech.
Ben Tal, Aharon   Tech. - Israel Inst. of Tech.
Nemirovski, Arkadi   Tech. - Israel Inst. of Tech.

Multiscale Singularly Perturbed Control Systems: Limit Occupational Measures Sets and Averaging, 984
Gaitsgory, Vladimir   Univ. of South Australia
Nguyen, Minh-Tuan   Univ. of South Australia

*A New Approach of Stabilization of Nondissipative Distributed Systems**
Guesmia, Aissa   Univ. de Metz

Variational Inequalities for Combined Control and Stopping, 990
Morimoto, Hiroaki   Ehime Univ.

Identification for Control: Optimal Input Design with Respect to a Worst-Case Nu-Gap Cost Function., 996
Hildebrand, Roland   Univ. Catholique de Louvain
Gevers, Michel   Univ. Catholique de Louvain

A Computational Method for Cauchy Problem of Laplace Equation in Multidimensional Case, 1002
Hon, Benny Y.C.   City Univ. of Hong Kong
Ting, Wei   City Univ. of Hong Kong

Chair: Francis, Bruce   Univ. of Toronto
Co-Chair: Feron, Eric   Massachusetts Inst. of Tech.
16:40
Local Control Strategies for Groups of Mobile Autonomous Agents, 1006
Lin, Zhiyun   Univ. of Toronto
Broucke, Mireille E.   Univ. of Toronto
Francis, Bruce   Univ. of Toronto
17:00
Agent-Localized Conditions for Formation Maintenance., 1012
Ketema, Yohannes   Univ. of Minnesota
Balas, Gary J.   Univ. of Minnesota
17:20
Modeling and Computation of Optimal Task Assignment for Cooperative Control, 1017
Kang, Wei   Naval Postgraduate School
Sparks, Andrew G.   Air Force Res. Lab.
17:40
On Some Communication Schemes for Distributed Pursuit-Evasion Games, 1023
Speranzon, Alberto   Royal Inst. of Tech.
Johansson, Karl Henrik   Royal Inst. of Tech.
18:00
Spatial Distribution of Two-Agent Clusters for Efficient Navigation, 1029
De Mot, Jan   Massachusetts Inst. of Tech.
Feron, Eric   Massachusetts Inst. of Tech.
18:20
A Distributed Algorithm for Energy-Efficient Coordination of Multiple-UAV Systems, 1035
Frazzoli, Emilio   Univ. of Illinois at Urbana-
                                       champaign
Ribichini, Gabriele   Univ. of Illinois at Urbana-
                                       Champaign

Chair: Jiang, Zhong Ping   Pol. Univ.
Co-Chair: Huang, Jie   Chinese Univ. of Hong Kong
Organizer: Jiang, Zhong Ping   Pol. Univ.
Organizer: Huang, Jie   Chinese Univ. of Hong Kong
16:40
Adaptive Tracking and Disturbance Rejection for Uncertain Nonlinear Systems (I), 1041
Tomei, Patrizio   Univ. di Roma Tor Vergata
Marino, Riccardo   Univ. di Roma Tor Vergata
17:00
A Unifying Framework for Global Regulation Via Nonlinear Output Feedback (I), 1047
Jiang, Zhong Ping   Pol. Univ.
Mareels, Iven   The Univ. of Melbourne
Hill, David J.   Univ. of Sydney
Huang, Jie   Chinese Univ. of Hong Kong
17:20
Remarks on Input to State Stabilization (I), 1053
Malisoff, Michael   Louisiana State Univ.
Rifford, Ludovic   Univ. Claude Bernard - Lyon 1
Sontag, Eduardo D.   Rutgers Univ.

17:40
Logic Based Switching for the Control of a Class of Nonlinear Systems (I), 1059
    Freidovich, Leonid   Michigan State Univ.
    Khalil, Hassan K.   Michigan State Univ.

18:00
Minimax Control of Nonlinear Strict-Feedback Systems under Stochastic Uncertainty Constraints (I), 1065
    Tang, Cheng   Univ. of Illinois at Urbana-champaign
    Basar, Tamer   Univ. of Illinois at Urbana-Champaign

18:20
A General Formulation and Solvability of the Global Robust Output Regulation Problem (I), 1071
    Chen, Zhiyong   Chinese Univ. of Hong Kong
    Huang, Jie   Chinese Univ. of Hong Kong

TuP03	**Regency B**
Control of Networks II	**Regular Session**
Chair: Alpcan, Tansu	Univ. of Illinois at Urbana-champaign
Co-Chair: Verriest, Erik I.	Georgia Inst. of Tech.

16:40
Delay in State Feedback Control Over a Network, 1080
    Verriest, Erik I.   Georgia Inst. of Tech.

17:00
A Unified Approach to Decentralized Controller Design, 1086
    Sebe, Noboru   Kyushu Inst. of Tech.

17:20
Global Stability Analysis of an End-To-End Congestion Control Scheme for General Topology Networks with Delay, 1092
    Alpcan, Tansu   Univ. of Illinois at Urbana-champaign
    Basar, Tamer   Univ. of Illinois at Urbana-Champaign

17:40
Jointly Optimal Quantization, Estimation, and Control of Hidden Markov Chains, 1098
    Baras, John S.   Univ. of Maryland
    Tan, Xiaobo   Univ. of Maryland
    Xi, Wei   Univ. of Maryland

18:00
Dynamic Spatial CDMA Channel Assignments for TD-SCDMA Systems, 1104
    Xiao, Yang   Northern Jiaotong Univ.
    Lu, Lingyun   Northern Jiaotong Univ.
    Habermann, Joachim   Univ. of Applied Sciences Giessen-Friedberg

18:20
Stability of Networked Control Systems Based on Switched Technique, 1110
    Liu, Yuzhong   Chinese Acad. of Sciences;Shenyang Normal Univ.
    Yu, Haibin   Chinese Acad. of Sciences

TuP04	**Regency C**
Linear Systems III	**Regular Session**
Chair: Keel, Lee H.	Tennessee State Univ.
Co-Chair: Pugh, A. Clive	Loughborough Univ.

16:40
Tracking of Random References: Random Sensitivity Function and Tracking Quality Indicators, 1114
    Eun, Yongsoon   Univ. of Michigan
    Kabamba, Pierre T.   Univ. of Michigan
    Meerkov, Semyon M.   Univ. of Michigan

17:00
Direct Computation of PID Controllers, 1120
    Herjolfsson, Gisli   Univ. of Iceland
    Hauksdottir, Anna Soffia   Univ. of Iceland

17:20
A Practical Linear Identification Method Based on Geometric Representation of Time Invariant Continuous Systems, 1126
    Watanabe, Ryo   Waseda Univ.
    Uchida, Kenko   Waseda Univ.

17:40
N-D Polynomial Matrix Structure with System Applications, 1132
    Pugh, A. Clive   Loughborough Univ.
    El-Nabrawy, Eman M.O.   Loughborough Univ.

18:00
2D Compartment of Linear Systems*
    Kaczorek, Tadeusz   Warsaw Tech. Univ.

18:20
Minimal or Maximal Realizations?, 1138
    Keel, Lee H.   Tennessee State Univ.
    Bhattacharyya, Shankar P.   Texas A & M Univ.

TuP05	**Maui Suite 1**
Hybrid Systems III	**Regular Session**
Chair: Di Benedetto, M. Domenica	Univ. of L'Aquila
Co-Chair: gurvits, Leonid	Los Alamos National Lab.

16:40
On the Stability of Limit Cycles in Resonant DC-To-DC Power Converters, 1141
    Hernandez, Victor M.   Univ. Autonoma De Queretaro
    Ramon, Silva   cinvestav
    Sira-Ramirez, Hebertt J.   CINVESTAV-IPN

17:00
On the Stabilization of Linear Discrete-Time Hybrid Automata, 1147
    Zoncu, Marco   Parades
    Balluchi, Andrea   Parades
    Sangiovanni-Vincentelli, Alberto   Univ. of California, Berkeley
    Bicchi, Antonio   Univ. of Pisa

17:20
Computation of Observability Regions for Discrete-Time Hybrid Systems, 1153
    Ferrari-Trecate, Giancarlo   Inst. NATIONAL DE RECHERCHE EN INFORMATIQUE ET EN AUTOMATIQUE
    Gati, Mehdi   REUNAULT S.A.S

17:40
Observability for Hybrid Systems, 1159
    Balluchi, Andrea   PARADES G.E.I.E.
    Benvenuti, Luca   Univ. di Roma
    Di Benedetto, M. Domenica   Univ. of L'Aquila
    Sangiovanni-vincentelli, Alberto   Univ. of California at Berkeley

18:00
What Is the Finiteness Conjecture for Linear Continuous Time Inclusions ?, 1165
    gurvits, Leonid   Los Alamos National Lab.

18:20
Robust H_infinity Output Feedback Control for Uncertain Sampled-Data Systems Via Jump System Approach, 1170
    Yoneyama, Jun   Aoyama Gakuin Univ.

TuP06	**Maui Suite 2**
Networked Control Systems with Limited Communication	**Regular Session**
Chair: Antsaklis, Panos J.	Univ. of Notre Dame
Co-Chair: Fu, Minyue	Univ. of Newcastle

16:40
Infimum Data Rates for Stabilising Markov Jump Linear Systems,
1176

Nair, Girish N.	Univ. of Melbourne
Dey, Subhrakanti	Univ. of Melbourne
Evans, Robin J.	Univ. of Melbourne

17:00
Robust Stability and Disturbance Attenuation Analysis of a Class of
Networked Control Systems, 1182

Lin, Hai	Univ. of Notre Dame
Zhai, Guisheng	Faculty of Systems Engineering
Antsaklis, Panos J.	Univ. of Notre Dame

17:20
Lp Stability of Networked Control Systems, 1188

Teel, Andrew R.	Univ. of California at Santa Barbara
Nesic, Dragan	Univ. of Melbourne

17:40
Optimal Control of Networked Systems with Limited
Communication: A Combined Heuristic Search and Convex
Optimization Approach, 1194

Lu, Lilei	Northeastern Univ.
Xie, Lihua	Nanyang Tech. Univ.
Fu, Minyue	Univ. of Newcastle

18:00
Minimizing Down-Link Traffic in Networked Control Systems Via
Optimal Control Techniques, 1200

Quevedo, Daniel E.	The Univ. of Newcastle
Goodwin, Graham C.	Univ. of Newcastle
Welsh, James	Univ. of Newcastle

18:20
Stability Analysis of Network-Based Cooperative Resource
Allocation Strategies, 1206

Gil, Alvaro	The Ohio State Univ.
Passino, Kevin	The Ohio State Univ.

TuP07	**Regency Boardroom**
Optimal Control III	**Regular Session**
Chair: Roberts, Peter D.	City Univ. London
Co-Chair: Rantzer, Anders	Lund Inst. of Tech.

16:40
Two-Dimensional Analysis of a Gradient Method in Function Space
Optimal Control Algorithm, 1212

Roberts, Peter D.	City Univ. London

17:00
Duality between Cost and Density in Optimal Control, 1218

Rantzer, Anders	Lund Inst. of Tech.
Hedlund, Sven	Lund Inst. of Tech.

17:20
Solutions of the Optimal Feedback Control Problem Using
Hamiltonian Dynamics and Generating Functions, 1222

Park, Chandeok	Univ. of Michigan
Scheeres, Daniel	Univ. of Michigan

17:40
A Differential Dynamic Games Approach to Flow Control, 1228

Clark, John M.C.	Imperial Coll. London
Vinter, Richard B.	Imperial Coll. London

18:00
Fast Design of the QP-Based Optimal Trajectory for the Eclipse-II
Motion Simulator, 1232

Cho, Young Man	Seoul National Univ.
Kim, Ik Kyu	Seoul National Univ.
Kim, Hwa Soo	Seoul National Univ.
kam, Min Seok	Seoul National Univ.
Hur, Su Mi	Seoul National Univ.
Min, Kyoung Doug	Seoul National Univ.

18:20
Optimal Nonlinear Transient Control with Neuro-AVR of Single-
Machine Infinite-Bus Power Systems, 1238

Yazdanpanah, M. J.	Tehran Univ.
Jalili-Kharaajoo, Mahdi	Tehran Univ.

TuP08	**Maui Suite 3**
Water Vehicles	**Regular Session**
Chair: Do, Duc	The Univ. of Western Australia
Co-Chair: Pascoal, Antonio M.	Inst. Superior Tecnico

16:40
Global Waypoint Tracking Control of Underactuated Ships under
Relaxed Assumptions, 1244

Do, Duc	The Univ. of Western Australia
Pan, Jie	The Univ. of Western Australia

17:00
Global Tracking Control of Underactuated Ships with Off-Diagonal
Terms, 1250

Do, Duc	The Univ. of Western Australia
Pan, Jie	The Univ. of Western Australia

17:40
Nonlinear Path Following with Applications to the Control of
Autonomous Underwater Vehicles, 1256

Lapierre, Lionel	ISR - IST Lisbon, Portugal
Soetanto, Didik	ISR - IST Lisbon, Portugal
Pascoal, Antonio	ISR - IST Lisbon, Portugal

18:00
Adaptive Setpoint Control for Autonomous Underwater Vehicles,
1262

Cheah, C.C.	Nanyang Tech. Univ.
Sun, Yeow Cheng	Nanyang Tech. Univ.

18:20
Basic Motion Control of a Free-Swimming Biomimetic Robot Fish,
1268

yu, junzhi	Inst. of Automation Chinese Acad. of Sciences

TuP09	**Maui Suite 4**
Robust Estimation	**Regular Session**
Chair: Qu, Zhihua	Univ. of Central Florida
Co-Chair: Thein, May-Win	Univ. of New Hampshire

16:40
Robust Estimation and Control Using Command-To-State
Mapping, 1274

Qu, Zhihua	Univ. of Central Florida

17:00
Robust Filtering by Fictitious Noises, 1280

Zhang, Huanshui	Shenzhen Graduate School of HIT
Zhang, David	The Hong Kong Pol. Univ.
Wang, Wei	Dalian Univ. of Tech.
Xie, Lihua	Nanyang Tech. Univ.

17:20
Robust Filtering for Linear Discrete-Time Systems with Parametric
Uncertainties: A Krein Space Estimation Approach, 1285

Lee, Tae Hoon	Samsung Electronics
Ra, Won-sang	Agency for Defence Development
Yoon, Tae-Sung	Changwon National Univ.
Park, Jin Bae	Yonsei Univ.
Jung, Soo Yul	Samsung Electronics
Seo, Joong Eon	Samsung Electronics

17:40
Trajectory Computation of Dynamic Uncertain Systems, 1291

Adrot, Olivier	INPG - UJF
Flaus, Jean-Marie	E.N.S.I.E.G.

18:00
Robust Control Using a State Space Disturbance Observer, 1297
    Lee, Seung Hi   Samsung Adv. Inst. of Tech.
    Chung, Chung Choo   Hanyang Univ.

18:20
A Variable Structure Parallel Observer System for Robust State Estimation of Multirate Systems with Noise, 1303
    Thein, May-Win   Univ. of New Hampshire

TuP10	Guest Room 350
Distributed Parameter Systems III	**Regular Session**

    Chair: Morris, Kirsten A.   Univ. of Waterloo
    Co-Chair: Jovanovic, Mihailo Univ. of California, Santa Barbara

16:40
Boundary Control of a Nonlinear Stefan Problem, 1309
    Dunbar, William B.   California Inst. of Tech.
    Petit, Nicolas   Ec. des Mines de Paris
    Rouchon, Pierre   Ec. des Mines de Paris
    Martin, Philippe   Ec. des Mines de Paris

17:00
Accurate Approximation of Invariant Zeros for a Class of SISO Abstract Boundary Control System, 1315
    Cheng, Ada   Kettering Univ.
    Morris, Kirsten A.   Univ. of Waterloo

17:20
Partial Asymptotic Stability and Stabilization of Nonlinear Abstract Differential Equations, 1321
    Zuyev, Alexander   Inst. of Applied Mathematics & Mechanics

17:40
Design of Surface Shape Control for Large Two-Dimensional Array, 1327
    Stein, Gunter   Honeywell Inc.
    Gorinevsky, Dimitry   Honeywell Inc.

18:00
Lyapunov-Based Output-Feedback Distributed Control of Systems on Lattices, 1333
    Jovanovic, Mihailo   Univ. of California, Santa Barbara
    Bamieh, Bassam   Univ. of California at Santa Barbara

18:20
Exact Computation of Frequency Responses for a Class of Infinite Dimensional Systems, 1339
    Jovanovic, Mihailo   Univ. of California, Santa Barbara
    Bamieh, Bassam   Univ. of California at Santa Barbara

TuP11	Guest Room 351
Discrete-Time Nonlinear Systems	**Regular Session**

    Chair: Piccoli, Benedetto   I.A.C.-C.N.R.
    Co-Chair: Arapostathis, Ari The Univ. of Texas at Austin

16:40
Quantization of the Rolling Body Problem with Application to Motion Planning, 1345
    Piccoli, Benedetto   I.A.C.-C.N.R.
    Chitour, Yacine   Lab. D'analyse Numerique
    Marigo, Alessia   I.A.C.-C.N.R.

17:00
Controllability for a Class of Discrete-Time Hamiltonian Systems, 1351
    Vaidya, Umesh   Univ. of California Santa Barbara
    Mezic, Igor   Univ. of California, Santa Barbara

17:20
Normal Forms for Nonlinear Discrete-Time Control Systems, 1357
    Hamzi, Boumediene   Univ. of California at Davis
    Tall, Issa Amadou   Univ. of California, Davis

17:40
An Algorithm for Linearization of Discrete-Time Systems Via Restricted Dynamic Feedback, 1362
    Lee, Hong-Gi   Chung-Ang Univ.
    Arapostathis, Ari   The Univ. of Texas at Austin
    Marcus, Steven I.   Univ. of Maryland

18:00
Realization of Interconnected Nonlinear Input-Output Descrete-Time Systems, 1368
    Nomm, Sven   Inst. of Cybernetics at TTU

18:20
On Discrete-Time Output Feedback Sliding Mode-Like Control for Nonminimum Phase Systems, 1374
    Lai, Nai One   Univ. of Leicester
    Edwards, Christopher   Univ. of Leicester
    Spurgeon, Sarah K.   Univ. of Leicester

TuP12	Maui Suite 5
Filtering II	**Regular Session**

    Chair: Sun, Kunpeng   Univ. of California at Berkeley
    Co-Chair: Shafai, Bahram   Northeastern Univ.

16:40
Optimal, Worst Case Filter Design Via Convex Optimization, 1380
    Sun, Kunpeng   Univ. of California at Berkeley
    Packard, Andrew K.   Univ. of California at Berkeley

17:00
Performance Evaluation of Extended Kalman Filter Based State Estimation for First Order Nonlinear Dynamic Systems, 1386
    Zhai, Tongyan   Marquette Univ.
    Ruan, Huawei   Marquette Univ.
    Yaz, Edwin   Marquette Univ.
    Yaz, Yvonne   Carthage Coll.

17:20
Polynomial Filtering for Stochastic Systems with Markovian Switching Coefficients, 1392
    Germani, Alfredo   Univ. of L'Aquila
    Manes, Costanzo   Univ. of L'Aquila
    Palumbo, Pasquale   Istituto di Analisi dei Sistemi ed Informatica IASI-CNR

17:40
Spectral Factorization and Stochastic Realization with Zeros on the Unit Circle, 1398
    Ferrante, Augusto   Univ. Degli Studi Padova
    Picci, Giorgio   Univ. di Padova
    Pinzoni, Stefano   Inst. di Ingegneria Gestionale

18:00
Nonlinear Filtering for Markov Diffusion Systems with Delayed Observations, 1404
    Calzolari, Antonella   Univ. di Roma-Tor Vergata
    Florchinger, Patrick A.   Univ. of Metz
    Nappo, Giovanna   Univ. di Roma

18:20
On the Numerical Stability of Time-Discretised State Estimation Via Clark Transformations, 1406
    Malcolm, William P.   The Univ. of Adelaide
    Elliott, Robert J.   Univ. of Calgary
    van der Hoek, John   Univ. of Adelaide

TuP13	Guest Room 450
Predictive Control for Nonlinear Systems	**Regular Session**

    Chair: Parisini, Thomas   Univ. of Trieste
    Co-Chair: Allgower, Frank   Univ. of Stuttgart

16:40
Nominally Robust Model Predictive Control with State Constraints, 1413
    Grimm, Gene   Univ. of California at Santa Barbara
    Messina, Michael J.   Univ. of California at Santa Barbara
    Teel, Andrew R.   Univ. of California at Santa Barbara
    Tuna, Sezai E.   Univ. of California at Santa Barbara

17:00
Stability of Nonlinear Model Predictive Control in the Presence of Errors Due to Numerical Online Optimization, 1419

Diehl, Moritz	Univ. of Heidelberg
Findeisen, Rolf	Univ. of Stuttgart
Allgower, Frank	Univ. of Stuttgart
Bock, Georg	Univ. of Heidelberg
Schloeder, Johannes	Univ. of Heidelberg

17:20
Stability Conditions for Observer Based Output Feedback Stabilization with Nonlinear Model Predictive Control, 1425

Findeisen, Rolf	Univ. of Stuttgart
Imsland, Lars	Norwegian Univ. of Science and Tech.
Allgower, Frank	Univ. of Stuttgart
Foss, Bjarne A.	Norwegian Univ. of Science & Tech.

17:40
A Receding-Horizon Multiple Model Based Control Scheme for Nonlinear Systems, 1431

Previdi, Fabio	Univ. of Bergamo
Sacone, Simona	Univ. of Genova
Parisini, Thomas	Univ. of Trieste

18:00
An Offline Algorithm for Reducing the Computational Burden of a MPC Min Max Controller, 1433

Alamo, Teodoro	Univ. de Sevilla
Muñoz de la Peña, David	Univ. de Sevilla
Camacho, Eduardo F.	Univ. of Sevilla

18:20
Approximations of Closed-Loop Minimax MPC, 1438

Löfberg, Johan	ETH, Zürich

TuP14	Guest Room 451
Fault Detection and Accomodation II	**Regular Session**
Chair: Dion, Jean-Michel	URA CNRS
Co-Chair: Ding, Steven X.	Lausitz Univ. of Applied Sciences

16:40
Sensor Location for Diagnosis in Linear Structured Systems with Disturbances, 1443

Commault, Christian.	Lab. d'Automatique de Grenoble
Dion, Jean-Michel	Lab. d'Automatique de Grenoble

17:00
Detecting Spectral Changes in the Frequency Domain, 1449

Fong, Kin Fui	National Univ. of Singapore
Loh, Ai-Poh	National Univ. of Singapore

17:20
Sliding Mode Observers for Reconstruction of Simultaneous Actuator and Sensor Faults, 1455

Tan, Chee Pin	Monash Univ. Malaysia
Edwards, Christopher	Univ. of Leicester

17:40
Fault Detection in a Mixed H_2/H_inf Setting, 1461

Khosrwojerdi, Mohammad-Javad	K. N. Toosi Univ. of Tech.
Nikoukhah, Ramine	INRIA, Rocquencourt
Safari-Shad, Nader	Uinv. of Wisconsin-Platteville

18:00
Fault Detection Filter Design for LTI Systems with Time Delays, 1467

Zhong, Maiying	Shandong Univ.
Ding, Steven X.	Univ. of Duisburg
Lam, James	Univ. of Hong Kong
Zhang, Chenghui	Shandong Univ.

18:20
A Self-Repairing Control System for Plants with Faulty Actuators, 1473

Takahashi, Masanori	Ariake National Coll. of Tech.

TuPPI	Grand Promenade
SIAM Poster Papers III	**Poster/Interactive Paper Session**
Chair: Abdallah, Chaouki T.	Univ. of New Mexico

16:40
Zero-Sum Semi-Markov Games*

Jaskiewicz, Anna	Pol. Wroclawska

Immersion of Nonlinear Systems into Linear Systems Modulo Output Injection, 1476

Jouan, Philippe	Univ. de Rouen

Spreading Control with Speed Constraints, 1482

Aubin, Jean-Pierre	Univ. Paris Ix - Dauphine
Kassara, Khalid	Univ. of Casablanca 1

Controllability of the Semilinear Parabolic Equation Governed by a Multiplicative Control in the Reaction Term: A Qualitative Approach, 1487

Khapalov, Alexander	Washington State Univ.

Maximum Principle of Optimal Control for Degnerate Quasi-Linear Elliptic Equations*

Lou, Hongwei	Fudan Univ.

An Optimal Control Problem Governed by Quasi-Linear Variational Inequalities*

Lou, Hongwei	Fudan Univ.

Stabilization of LPV Systems: State Feedback, State Estimation, and Duality, 1492

Blanchini, Franco	Univ. degli Studi di Udine
Miani, Stefano	Univ. degli Studi di Udine

TuES1	Maui Suite 3
Honeywell Industry Sponsor Session	**Evening Session**

TuES2	Maui Suite 4
National Instruments Industry Sponsor Session	**Evening Session**

WeDPL	Monarchy Ballroom
Plenary Talk: Katsuhita Furuta	**Plenary Session**
Chair: Abdallah, Chaouki T.	Univ. of New Mexico

08:00
Control of Pendulum: From Super Mechano-Systems to Human Adaptive Mechatronics, 1498

Furuta, Katsuhisa	Tokyo Denki Unversity

WeA01	Monarchy Ballroom
Cooperative Control	**Regular Session**
Chair: Broucke, Mireille E.	Univ. of Toronto
Co-Chair: Baras, John S.	Univ. of Maryland

09:20
The Multi-Agent Rendezvous Problem, 1508

Lin, Jie	Yale Univ.
Morse, A. Stephen	Yale Univ.
Anderson, Brian D.O.	Australian National Univ.

09:40
Coopeartive Synchronization of Robots Via Estimated Feedback, 1514

Rodriguez-Angeles, Alejandro	Mexican Petroleum Inst.
Nijmeijer, Hendrik	Eindhoven Univ. of Tech.

10:00
Control of a Team of Car-Like Robots Using Abstractions, 1520

Belta, Calin	Univ. of Pennsylvania
Pereira, Guilherme A. S.	Univ. Federal de Minas Gerais
Kumar, Vijay	Univ. of Pennsylvania

10:20
A Framework for Networked Motion Control, 1526
Sousa, Joao	Fac. Engenharia Univ. Do Porto
Pereira, Fernando Lobo	Porto Univ. Inst. For Systems & Robotics

10:40
Decentralized Control of Autonomous Vehicles, 1532
Baras, John S.	Univ. of Maryland
Tan, Xiaobo	Univ. of Maryland
Hovareshti, Pedram	Univ. of Maryland

11:00
Reconfiguration of Identical Vehicles in 3D, 1538
Broucke, Mireille E.	Univ. of Toronto

WeA02	**Regency A**
Trends in Advanced Nonlinear Control	**Invited Session**
Chair: Jiang, Zhong Ping	Pol. Univ.
Co-Chair: Astolfi, Alessandro	Imperial Coll.
Organizer: Jiang, Zhong Ping	Pol. Univ.
Organizer: Astolfi, Alessandro	Imperial Coll.

09:20
On Global Output Feedback Stabilization of Uncertain Nonlinear Systems (I), 1544
Praly, Laurent	Ec. des Mines
Jiang, Zhong Ping	Pol. Univ.

09:40
Output-Input Stability and Feedback Stabilization of Multivariable Nonlinear Control Systems (I), 1550
Liberzon, Daniel	Univ. of Illinois at Urbana-Champaign

10:00
A Matrosov Theorem with an Application to Model Reference Adaptive Control Via Approximate Discrete-Time Models (I), 1556
Nesic, Dragan	Univ. of Melbourne
Teel, Andrew R.	Univ. of California at Santa Barbara

10:20
Global Complete Observability and Output-To-State Stability Imply the Existence of a Globally Convergent Observer (I), 1562
Astolfi, Alessandro	Imperial Coll.
Praly, Laurent	Ec. des Mines

10:40
Stabilization of Periodic Orbits in a Wedge Billiard (I), 1568
Sepulchre, Rodolphe J.	Univ. de Liege
Gerard, Manuel	Univ. de Liege

11:00
Transforming a Single-Input System to a P-Normal Form Via Feedback (I), 1574
Respondek, Witold	Inst. National des Sciences Appliquees

WeA03	**Regency B**
Communication Networks: Scheduling and Quality of Service	**Regular Session**
Chair: Sarkar, Saswati	Univ. of Pennsylvania
Co-Chair: Mascolo, Saverio	Pol. di Bari

09:20
Sensitivity of Optimal Quality of Service to Bandwidth and Buffer Prices, 1580
Jin, Nan	Univ. of California, Irvine
Jordan, Scott	Univ. of California, Irvine

09:40
A Control Theoretic Approach for Supporting Quality of Service in IEEE 802.11e WLANs with HCF, 1586
Grieco, Luigi Alfredo	Pol. Di Bari
Boggia, Gennaro	Pol. di Bari
Mascolo, Saverio	Pol. di Bari
Camarda, Pietro	Pol. di Bari

10:00
Emergence of Critical Rates in Multiple Access Network Control Schemes., 1592
Barany, Ernest J.	New Mexico State Univ.
Krupa, Maciej	New Mexico State Univ.

10:20
Stochastic Control Techniques for Throughput Optimal Wireless Multicast, 1598
Chaporkar, Prasanna	Student
Sarkar, Saswati	Univ. of Pennsylvania

10:40
New Scheduling Policies for Multiclass Queueing Networks: Applications to Peer-To-Peer Systems, 1604
Paschalidis, Ioannis Ch.	Boston Univ.
Su, Chang	Boston Univ.
Caramanis, Michael C.	Boston Univ.

11:00
Robust Packet Scheduling in Wireless Cellular Networks, 1610
Fu, Zhenghua	UCLA
MENG, XIAOQIAO	Univ. of California, Los Angeles
Yang, Hao	UCLA
Lu, Songwu	Univ. of Illinois at Urbana-Champaign

WeA04	**Regency C**
Behavioral System Theory	**Invited Session**
Chair: Rapisarda, Paolo	Univ. of Maastricht
Co-Chair: Polderman, Jan Willem	Univ. of Twente
Organizer: Rapisarda, Paolo	Univ. of Maastricht

09:20
On Dissipative SISO Systems: A Behavioral Approach (I), 1616
Pendharkar, Ishan	Indian Inst. of Tech. Bombay, India.
Pillai, Harish	Indian Inst. of Tech. Bombay

09:40
A Behavioral Framework for Reed-Solomon Decoding through Multiplicative Bivariate Interpolation (I), 1621
Kuijper, Margreta	Univ. of Melbourne
Polderman, Jan Willem	Univ. of Twente

10:00
A Note on the Driving Variable Realization of Behaviors (I), 1627
Valcher, Maria Elena	Univ. Di Padova

10:20
Balanced State Representations from Higher-Order Differential Equation Models (I), 1633
Willems, Jan C.	Univ. of Leuven
Rapisarda, Paolo	Univ. of Maastricht

10:40
The Canonical Controller and Its Regularity (I), 1639
Willems, Jan C.	Univ. of Leuven, Belgium
Belur, Madhu	Univ. of Groningen, NL
Trentelman, Harry L.	Univ. of Groningen, NL
Julius, Agung	Univ. of Twente, NL

11:00
Some Remarks on the Dissipativity of Uncontrollable Systems (I), 1645
Camlibel, Kanat	Tilburg Univ.
Belur, Madhu	Univ. of Groningen
Willems, Jan C.	Univ. of Leuven

WeA05	**Maui Suite 1**
Stability of Hybrid Systems	**Regular Session**
Chair: Lygeros, John	Univ. of Patras
Co-Chair: Camlibel, Kanat	Tilburg Univ.

09:20
Stability and Controllability of Bimodal Planar Linear
Complementarity Systems, 1651
    Camlibel, Kanat   Tilburg Univ.
    Heemels, Maurice   Eindhoven Univ. of Tech.
    Schumacher, Hans   Tilburg Univ.

09:40
New Results on the Quadratic Stabilization of Switched Linear
Systems, 1657
    Ji, Zhijian   Peking Univ.
    Wang, Long   Peking Univ.
    Xie, Guangming   Peking Univ.

10:00
Generalized Practical Stability Analysis of Discontinuous
Dynamical Systems, 1663
    Zhai, Guisheng   Wakayama Univ.
    Michel, Anthony N.   Univ. of Notre Dame

10:20
Stability Analysis of Discontinuous Dynamical Systems Determined
by Semigroups, 1669
    Michel, Anthony N.   Univ. of Notre Dame
    Sun, Ye   Univ. of Notre Dame

10:40
Approximate Stabilisation of Uncertain Hybrid Systems with
Controllable Transitions, 1675
    Gao, Yan   School of Management, Univ. of
                 Shanghai for Science and Tech.
    Lygeros, John   Univ. of Cambridge
    Quincampoix, Marc Univ. de Bretagne Occidentalle
    Seube, Nicolas   ENSIETA

WeA06	Maui Suite 2
Adaptive Output Feedback Systems	**Regular Session**
Chair: Tao, Gang	Univ. of Virginia
Co-Chair: Pagilla, Prabhakar R.	Oklahoma State Univ.

09:20
Adaptive Output Feedback Actuator Failure Compensation for a
Class of State-Dependent Nonlinear Systems, 1681
    Tang, Xidong   Univ. of Virginia
    Tao, Gang   Univ. of Virginia
    Joshi, Suresh M.   NASA Langley Res. Ctr.

09:40
Adaptive Controller and Observer Design for a Class of Nonlinear
Systems, 1687
    Zhu, Yongliang   Oklahoma State Univ.
    Pagilla, Prabhakar R. Oklahoma State Univ.

10:00
Satellite Vibration Control Using Frequency Selective Feedback,
1693
    Tan, Alfred CH   Univ. of Southampton
    Meurers, Thomas   Univ. of Southampton
    Veres, Sandor School of Engineering Sciences
    Aglietti, Guglielmo   Univ. of Southampton
    Rogers, Eric   Univ. of Southampton

10:20
Decentralized Adaptive Output Feedback Control Via Input/Output
Inversion, 1699
    Hovakimyan, Naira   Dept of AOE, Virginia Tech.
    Lavretsky, Eugene   The Boeing Co.
    Calise, Anthony J.   Georgia Inst. of Tech.
    Sattigeri, Ramachandra Georgia Inst. of Tech.

10:40
Output Feedback Control of an Uncertain System Using an
Adaptive Observer, 1705
    Yang, Bong-jun   Georgia Inst. of Tech.
    Hovakimyan, Naira   Virginia Tech.
    Calise, Anthony J.   Georgia Inst. of Tech.

11:00
Nonlinear Adaptive Observer for a Parameter Affine Linearizable
System, 1711
    Yu, Kyung Tak   School of Electrical Engineering ,
                        Seoul National Univ.
    Jo, Nam H.   Soongsil Univ.
    Seo, Jin H.   Seoul National Univ.

WeA07	Regency Boardroom
Optimal Control IV	**Regular Session**
Chair: Yu, Jen-te	Rockwell Scientific
Co-Chair: Liu, Kang-Zhi	Chiba Univ.

09:20
A General Solution to the Stepsize Scaling Problem in Sequential
Algorithms for Computing Optimal Static Output Feedback Gains,
1717
    Yu, Jen-te   Rockwell Scientific

09:40
A Simple Derivation of ARE Solutions to the Standard H_inf
Control Problem Based on LMI Solution, 1723
    Liu, Kang-Zhi   Chiba Univ.
    He, Rong   Chiba Univ.

10:00
Time-Optimal Control of a Swing, 1729
    Kulkarni, Jayant   Cornell Univ.

10:20
Discrete Approximations to Continuous Shortest-Path: Application
to Minimum-Risk Path Planning for Groups of UAVs, 1734
    Hespanha, Joao P.   Univ. of California, Santa Barbara
    Kim, Jongrae   Univ. of California, Santa Barbara

10:40
Capacity Constraints on Locational Optimization Problems, 1741
    Salapaka, Srinivasa   Massachusetts Inst. of Tech.
    Khalak, Asif   Alpahtech, Inc.
    Dahleh, Munther A   Massachusetts Inst. of Tech.

11:00
A Reference Governor in a Piecewise State Affine Function, 1747
    Kogiso, Kiminao   Osaka Univ.
    Hirata, Kenji   Osaka Univ.

WeA08	Maui Suite 3
Automotive and Vehicle Control	**Regular Session**
Chair: Peterson, Katherine	Univ. of Michigan
Co-Chair: Ye, Zhengmao	Wayne State Univ.

09:20
Rendering the Electromechanical Valve Actuator Globally
Asymptotically Stable, 1753
    Peterson, Katherine   Univ. of Michigan
    Stefanopoulou, Anna G.   Univ. of Michigan

09:40
Polytopic Controller Design and Evaluation for a Simplified
Nonlinear Engine Vehicle Dynamical Model, 1759
    Uthaichana, Kasemsak   Purdue Univ.
    DeCarlo, Raymond A.   Purdue Univ.
    Corless, Martin J.   Purdue Univ.
    Hopka, Michael   The Ohio State Univ.

10:00
Adaptive, Nonsingular Path Following Control of Wheeled Robots,
1765
    Soetanto, Didik   ISR-IST Lisbon, Portugal
    Lapierre, Lionel   ISR-IST Lisbon, Portugal
    Pascoal, Antonio   ISR-IST Lisbon, Portugal

10:20
Torque Generation Modeling for Diesel Engine, 1771

Falcone, Paolo	Univ. degli Studi del Sannio
De Gennaro, Maria Carmela	Univ. degli Studi del Sannio
Fiengo, Giovanni	Univ. degli Studi del Sannio
Santini, Stefania	Univ. di Napoli Federico II
Glielmo, Luigi	Univ. degli Studi del Sannio
Langthaler, Peter	Univ. of Linz Johannes Kepler

10:40
Limit Systems and Attractivity for Time-Varying Systems with Applications to Nonholonomc Systems, 1777

Lee, Ti-Chung	Ming Hsin Univ. of Science and Tech.

11:00
Control Options for Exhaust Gas Aftertreatment and Fuel Economy of GDI Engine Systems, 1783

Ye, Zhengmao	Wayne State Univ.
Li, Liguang	Shanghai Jiao Tong Univ.

Chair: Miller, Daniel E.	Univ. of Waterloo
Co-Chair: Smith, Ralph C.	North Carolina State Univ.

09:20
Mixed H_2/H_inf Control: The Discrete-Time Case, 1789

Muradore, Riccardo	Univ. of Padova
Picci, Giorgio	Univ. di Padova

09:40
Hamiltonian Test for the H_infty Performance in Continuous-Time Periodic Systems, 1795

Zhou, Jun	Kyoto Univ.
Hagiwara, Tomomichi	Kyoto Univ.
Araki, Mituhiko	Kyoto Univ.

10:00
H-Infinity Control Design for a Magnetostrictive Transducer, 1801

Smith, Ralph C.	North Carolina State Univ.
Nealis, James	North Carolina State Univ.

10:20
Near Optimal LQR Performance for a Compact Set of Plants, 1807

Miller, Daniel E.	Univ. of Waterloo

10:40
Sufficient Conditions for Robust Stability in Non-Sequential MIMO QFT, 1813

Kerr, Murray	The Univ. of Queensland
Jayasuriya, Suhada	Texas A&M Univ.

11:00
Analysis and Synthesis of Model Reference ILQ Servo System Using Robust L_infinity Performance Measure for a Fixed Input, 1818

Kunimatsu, Sadaaki	Osaka Univ.
Fujii, Takao	Osaka Univ.

Chair: Hagen, Gregory	United Tech. Res. Center
Co-Chair: Bewley, Thomas R.	UC San Diego

09:20
Equivalent Characterization of Invariant Subspaces of H^2 and Applications to the Optimal Sensitivity Problem, 1824

Kashima, Kenji	Kyoto Univ.
Yamamoto, Yutaka	Kyoto Univ.

09:40
Stabilization of the Ginzburg-Landau Equation by Linear Boundary Control, 1830

Aamo, Ole Morten	NTNU
Smyshlyaev, Andrey	Univ. of California at San Diego
Krstic, Miroslav	Univ. of California at San Diego

10:00
A Classification of All Solutions of the Algebraic Riccati Equations for Infinite-Dimensional Systems, 1836

Iftime, Orest V.	Univ. of Groningen
Curtain, Ruth F.	Univ. of Groningen
Zwart, Hans J.	Univ. of Twente

10:20
Adjoint Analysis and Control Opportunities in a 2D Jet, 1842

Cerviño, Laura I.	UC San Diego
Bewley, Thomas R.	UC San Diego

10:40
On Steady Solutions of a PDE Model of Compressor Stall, 1848

Hagen, Gregory	United Tech. Res. Center
Mehta, Prashant G.	United Tech. Res. Center

11:00
Spectral Factorization by Symmetric Extraction for a Vibrating String with Low Damping, 1854

Callier, Frank M.	Univ. of Namur (FUNDP)
Winkin, Joseph J.	Univ. of Namur (FUNDP)

Chair: Antoulas, Athanasios C.	Rice Univ.
Co-Chair: Varga, Andras	German Aerospace Center
Organizer: Antoulas, Athanasios C.	Rice Univ.
Organizer: Varga, Andras	German Aerospace Center

09:20
On Computing the L2-Induced Norm of Finite-Horizon Systems (I), 1860

Bamieh, Bassam	Univ. of California at Santa Barbara

09:40
Dynamical Systems for Principal and Minor Component Analysis (I), 1863

Manton, Jonathan H.	Univ. of Melbourne
Helmke, Uwe R.	Univ. of Wuerzburg
Mareels, Iven	The Univ. of Melbourne

10:00
Balanced Model Reduction of Passive Systems (I)*

Sorensen, Dan	Rice Univ.

10:20
An H2 Error Expression for the Lanczos Procedure (I), 1869

Gugercin, Serkan	Virginia Tech.
Antoulas, Athanasios C.	Rice Univ.

10:40
Reliable Algorithms for Computing Minimal Dynamic Covers (I), 1873

Varga, Andras	German Aerospace Center

11:00
Recursive Blocked Algorithms and a High Performance Library for Solving Sylvester-Type Equations (I)*

Jonsson, Isak	Umeå Univ.
Kågström, Bo	Umeå Univ.

Chair: Morgul, Omer	Bilkent Univ.
Co-Chair: Tian, Yu-Ping	Southeast Univ.

09:20
Stabilizing Periodic Solutions of Chaotic Systems, 1879

Zhu, Jiandong	Dept. of Automatic Control, Southeast Univ.
Tian, Yu-Ping	Southeast Univ.

09:40
Detecting Unstable Periodic Orbits in Switched Arrival Systems, 1884

Tian, Yu-Ping	Southeast Univ.

10:00
A Stability Result for Delayed Feedback Controllers, 1889
   Morgul, Omer   Bilkent Univ.

10:20
Model Based Anticontrol of Discrete Time Systems, 1895
   Morgul, Omer   Bilkent Univ.

10:40
Performance Evaluations of Quantized Stabilizers, 1897
   Fagnani, Fabio   Pol. Di Torino
   Zampieri, Sandro   Univ. di Padova

11:00
Cryptography by Discrete-Time Hyperchaotic Systems, 1902
   Belmouhoub, Inam   ENSEA
   Djemai, Mohammed   ENSEA
   Barbot, Jean Pierre   ENSEA

WeA13	Guest Room 450
Randomized Algorithms for Analysis and Synthesis of Robust Control Systems	**Invited Session**

   Chair: Dabbene, Fabrizio   Pol. di Torino
   Co-Chair: Calafiore,   Pol. di Torino
   Giuseppe
   Organizer: Dabbene, Fabrizio   IEIIT-CNR Pol. di Torino
   Organizer: Calafiore,   Pol. di Torino
   Giuseppe

09:20
Randomized Algorithms in Robust Control (I), 1908
   Tempo, Roberto   Pol. di Torino
   Dabbene, Fabrizio   Pol. di Torino
   Calafiore, Giuseppe   Pol. di Torino

09:40
Robust Output-Feedback Integral MPC: A Probabilistic Approach (I), 1914
   Kanev, Stoyan   Delft Univ. of Tech.
   Verhaegen, Michel   Univ. of Twente

10:00
Probabilistic Design of a Robust State-Feedback Controller Based on Parameter-Dependent Lyapunov Functions (I), 1920
   Oishi, Yasuaki   The Univ. of Tokyo

10:20
Fast Universal Algorithms for Robustness Analysis (I), 1926
   Chen, Xinjia   Louisiana State Univ.
   Zhou, Kemin   Lousiana State Univ.
   Aravena, Jorgina L.   Louisiana State Univ.

10:40
On the Conditioning of Robustness Problems (I), 1932
   Shcherbakov, P.S.   Moscow Inst. of Control Sciences
   Barmish, B. Ross   Univ. of Wisconsin

11:00
Probabilistic Robust Controller Design: Probable Near Minimax Value and Randomized Algorithms (I), 1938
   Fujisaki, Yasumasa   Kobe Univ.
   Kozawa, Yasuaki   Kobe Univ.

WeA14	Guest Room 451
Fault Detection and Accomodation III	**Regular Session**

   Chair: tseng, eric   Ford Motor Company
   Co-Chair: Johansson,   Lulea Univ. of Tech.
   Andreas

09:20
Fault Detection Filter Applied to Structural Health Monitoring, 1944
   Liberatore, Sauro   Univ. of California, Los Angeles
                               (UCLA)
   Speyer, Jason L.   Univ. of California at Los Angeles
   Hsu, Andy   graduate student

09:40
Parametric Uncertainty in Sensor Fault Detection for a Turbofan Jet Engine, 1950
   Johansson, Andreas   Lulea Univ. of Tech.
   Norlander, Torbjorn   Volvo Aero Corp.

10:00
Nonlinear PCA Combining Principal Curves and RBF-Networks for Process Monitoring, 1956
   Mohamed-faouzi, Harkat   CRAN-INPL
   Mourot, Gilles   Inst. National Pol. De Lorraine
   Ragot, Jose   CRAN-INPL

10:20
Estimating Focus and Radial Distances, and Fault Residuals from CD Player Sensor Signals by Use of a Kalman Estimator, 1962
   Odgaard, Peter Fogh   Aalborg Univ.
   Stoustrup, Jakob   Aalborg Univ.
   Andersen, Palle   Aalborg Univ.
   Mikkelsen, Henrik   Bang & Olufsen

10:40
Robust Model-Based Fault Detection for Roll Rate Sensor, 1968
   Tseng, H. Eric   Ford Motor Company
   Xu, Li   Ford Motor Company

11:00
Iterative LMI Approach for Robust Fault Detection Observer Design, 1974
   Wang, Haibo   School of Electrical & Electronic
               Engineering, Nanyang Tech. Uni
   Wang, Jian Liang   Nanyang Tech. Univ.
   Liu, Jian   Honeywell Avionics Inc.,
                              Singapore.
   Lam, James   Univ. of Hong Kong

WeAPI	Grand Promenade
SIAM Poster Papers IV	**Poster/Interactive Paper Session**

   Chair: Abdallah, Chaouki T.   Univ. of New Mexico

09:20
Riesz Basis Property of Evolution Equations in Hilbert Spaces and Application to a Coupled String Equation*
   Xu, Gen-Qi   Shanxi Univ.
   Guo, Bao-Zhu   Acad. of Mathematics and
                       System Sciences,

Algorithms for the Solution of Optimization Problems with Two Numerical Precision Parameters, 1980
   Polak, Elijah   Univ. of California
   Pironneau, Olivier   Univ. Paris VI

The Solution of the H_∞/H_- Problem by Direct Methods*
   Da Silveira, Marcos Azevedo   Pontificia Univ. Catolica Do Rio
                           De Janeiro
   Ades, Roberto   IME

Optimal Shape Control for the Navier Stokes Equations, 1986
   Bui, An Ton   Univ. of British Columbia

On the Observability and Detectability of Continuous-Time Markov Jump Linear Systems, 1994
   Costa, Eduardo F.   Unicamp
   Do Val, Joao B.R.   UNICAMP

WeAW	Spats
Women in Control Workshop	

   Chair: Pasik-Duncan,   Univ. of Kansas
   Bozenna

WeNPL	Sunset Terrace
Plenary Panel: History of Control	**Plenary Panel**

   Chair: Abramovitch, Daniel Y.   Agilent Lab.
   Co-Chair: Dorato, Peter   Univ. of New Mexico

12:00
The Outrigger: A Prehistoric Feedback Mechanism, 2000
    Abramovitch, Daniel Y.   Agilent Lab.

WeM01   Monarchy Ballroom
Multiple Vehicle Coordinated   Regular Session
Control
    Chair: Pappas, George J.   Univ. of Pennsylvania
    Co-Chair: Beard, Randal W.   Brigham Young Univ.

14:20
Stable Flocking of Mobile Agents, Part I: Fixed Topology, 2010
    Tanner, Herbert   Univ. of New Mexico
    Jadbabaie, Ali   Univ. of Pennsylvania
    Pappas, George J.   Univ. of Pennsylvania

14:40
Stable Flocking of Mobile Agents, Part II: Dynamic Topology, 2016
    Tanner, Herbert   Univ. of New Mexico
    Jadbabaie, Ali   Univ. of Pennsylvania
    Pappas, George J.   Univ. of Pennsylvania

15:00
*Flocking with Obstacle Avoidance: Cooperation with Limited
Communication in Mobile Networks, 2022*
    Olfati-Saber, Reza   California Inst. of Tech.
    Murray, Richard M.   California Inst. of Tech.

15:20
*Synchronization of Information in Distributed Multiple Vehicle
Coordinated Control, 2029*
    Beard, Randal W.   Brigham Young Univ.
    Stepanyan, Vahram   Student

15:40
*A Framework for Conflict Resolution in Air Traffic Management,
2035*
    Resmerita, Stefan   Tech. - Israel Inst. of Tech.
    Heymann, Michael   Tech. Israel Inst. of Tech.
    Meyer, George   NASA Ames Res. Center

16:00
*Swarm Aggregations Using Artificial Potentials and Sliding Mode
Control, 2041*
    Gazi, Veysel   Atilim Univ.

WeM02   Regency A
Nonlinear Systems I   Regular Session
    Chair: Shafai, Bahram   Northeastern Univ.
    Co-Chair: Bullo, Francesco   Univ. of Illinois at Urbana-
                                          Champaign

14:20
*Stabilization for a Class of Non-Affine Systems Via Reduced-Order
Dynamic Output Feedback, 2047*
    Lu, Guoping   Nantong Inst. of Tech.
    Zheng, Yufan   Univ. of Melbourne

14:40
*A Sufficient Condition for Locally Controlled Invariance of a
Manifold for General Non Linear Systems, 2053*
    Consolini, Luca   Univ. of Parma
    Tosques, Mario   Univ. of Parma

15:00
*Bumpless Transfer between Advanced Controllers with
Applications to Power Plant Control, 2059*
    Bendtsen, Jan Dimon   Aalborg Univ.
    Stoustrup, Jakob   Aalborg Univ.
    Trangbaek, Klaus   Aalborg Univ.

15:20
Control of Center Manifolds, 2065
    Hamzi, Boumediene   Univ. of California at Davis
    Kang, Wei   Naval Postgraduate School
    Krener, Arthur J   Univ. of California at Davis

15:40
*Synthesis of Piecewise-Affine Controllers for Stabilization of
Nonlinear Systems, 2071*
    Rodrigues, Luis   Concordia Univ.
    How, Jonathan P.   Massachusetts Inst. of Tech.

16:00
Stability of Receding Horizon Control of Nonlinear Systems, 2077
    Costa, Eduardo F.   Unicamp
    Do Val, Joao B.R.   UNICAMP

WeM03   Regency B
Pricing and Optimization of   Regular Session
Communication Networks
    Chair: Meyn, Sean   Univ. of Illinois
    Co-Chair: Michailidis, George   The Univ. of Michigan

14:20
Dynamic Optimization Flow Control, 2082
    Imer, Orhan Cagri   Univ. of Illinois at Urbana-
                                          Champaign
    Basar, Tamer   Univ. of Illinois at Urbana-
                                          Champaign

14:40
*Pricing and Rate Adaptation in a Non-Cooperative Environment,
2088*
    Wu, Xinran   Univ. of California, San Diego
    Marbach, Peter   Univ. of Toronto

15:00
*Dynamics of Ancillary Service Prices in Power Distribution
Systems, 2094*
    Meyn, Sean   Univ. of Illinois
    Cho, In-Koo   Univ. of Illinois

15:20
An Approach to Rate Allocation in Multicast, 2100
    Stoenescu, Tudor   Univ. of Michigan
    Liu, Mingyan   Univ. of Michigan
    Teneketzis, Demosthenis   Univ. of Michigan

15:40
*Optimal Allocation in a Queueing System with Shared Resources,
2106*
    Michailidis, George   The Univ. of Michigan

16:00
*Network Resource Allocation and a Congestion Game: The Single
Link Case, 2112*
    Johari, Ramesh   MIT
    Tsitsiklis, John   MIT

WeM04   Regency C
Nanotechnology: Control   Invited Session
Needs and Related
Perspectives (I)
    Chair: Salapaka, Murti V.   Iowa State Univ.
    Co-Chair: Baheti, Kishan   National Science Foundation
    Organizer: Salapaka, Murti V.   Iowa State Univ.
    Organizer: Baheti, Kishan   National Science Foundation

14:20
Keynote Talk: Nanoscale Science and Engineering at NSF*
    Baheti, Kishan   National Science Foundation

14:40
*Teleoperated and Automatic Nanomanipulation Systems Using
Atomic Force Microscope Probes (I), 2118*
    Sitti, Metin   Carnegie Mellon Univ.

15:00
*The Intersection of Controls and Physics in Atomic Force
Microscopy (I), 2124*
    Cleveland, Jason   Asylum Res.

15:20
*Control Challenges in Micro Fluidic Systems and Nanoscale
Transport Phenomena (I), 2126*
    Shapiro, Benjamin   Univ. of Maryland

15:40
An Observer Based Sample Detection Scheme for Atomic Force Microscopy (I), 2132

Sebastian, Abu	Iowa State Univ.
Sahoo, Deepak R.	Iowa State Univ.
Salapaka, Murti V.	Iowa State Univ.

16:00
Nanotechnology Meets Biology (I)*

Hoh, Jan	Johns Hopkins School of Medicine

WeM05	Maui Suite 1
Optimal Timing Control of Hybrid Systems	**Invited Session**
Chair: Egerstedt, Magnus	Georgia Inst. of Tech.
Co-Chair: Wardi, Yorai	Georgia Inst. of Tech.
Organizer: Egerstedt, Magnus	Georgia Inst. of Tech.
Organizer: Wardi, Yorai	Georgia Inst. of Tech.

14:20
Optimal Control of Switching Times in Switched Dynamical Systems (I), 2138

Egerstedt, Magnus	Georgia Inst. of Tech.
Wardi, Yorai	Georgia Inst. of Tech.
Florent, Delmotte	phd student

14:40
On the Optimal Control of Hybrid Systems: Analysis and Zonal Algorithms for Trajectory and Schedule Optimization (I), 2144

Shaikh, Shahid	Mcgill Univ. Montreal.
Caines, Peter E.	McGill Univ. Montreal

15:00
Hedging Point Policies for Multi State Failure Prone Manufacturing Systems (I), 2150

Branca, Carlo	Univ. di Roma Tor Vergata
Martinelli, Francesco	Univ. di Roma Tor Vergata

15:20
Regularization Method for Optimally Switched and Impulsive Systems with Biomedical Applications (I), 2156

Verriest, Erik I.	Georgia Inst. of Tech.

15:40
Receding Horizon Optimal Control for Some Stochastic Hybrid Systems (I), 2162

Cassandras, Christos G.	Boston Univ.
Mookherjee, Reetabrata	Boston Univ.

16:00
A Linear Programming Approach to Time Optimal Control of Integrator Switched Systems with State Constraints (I), 2168

Xu, Xuping	Penn State Erie
Antsaklis, Panos J.	Univ. of Notre Dame

WeM06	Maui Suite 2
Applications of Adaptive Control	**Regular Session**
Chair: Gao, Yang	Nanyang Tech. Univ.
Co-Chair: Ma, Kougen	Univ. of Hawaii at Manoa

14:20
Adaptive Fuzzy Sliding Mode Control for Robotic Manipulators, 2174

Woo, Peng-Yung	Northern Illinois Univ.
Guo, Yuzheng	Northern Illinois Univ.

14:40
Relay Feedback Tuning of Robust PID Controllers with Iso-Damping Property, 2180

Chen, YangQuan	Utah State Univ.
Hu, ChuanHua	Utah State Univ.
Moore, Kevin L.	Utah State Univ.

15:00
Multiestimation Scheme for Robust Adaptive Stabilization of Discrete Systems, 2186

Alonso Quesada, Santiago	Univ. del País Vasco
de la Sen, Manuel	Univ. del Pais Vasco
Bilbao-Guillerna, Aitor	Univ. del País Vasco
Garrido, Aitor J.	Univ. Del Pais Vasco.

15:20
On Adaptive Observers for State Affine Systems and Application to Synchronous Machines, 2192

Besancon, Gildas	ENSIEG-INPG
De Leon-Morales, Jesus	FIME-UANL
Huerta-guevara, Oscar	Univ. Autonoma De Nuevo Leon

15:40
Adaptive Fuzzy Neural Control of Mean Arterial Pressure through Sodium Nitroprusside Infusion, 2198

Gao, Yang	Nanyang Tech. Univ.
Er, Meng Joo	Nanyang Tech. Univ.

16:00
Simultaneous Precision Positioning and Vibration Suppression of Smart Structures Adaptive Control Methods and Comparisons, 2204

Ma, Kougen	Univ. of Hawaii at Manoa
Ghasemi-Nejhad, Mehrdad N.	Univ. of Hawaii at Manoa

WeM07	Regency Boardroom
Optimal Control V	**Regular Session**
Chair: Fahroo, Fariba	Naval Postgraduate School
Co-Chair: Milman, Ruth	Univ. of Toronto

14:20
A Unified Computational Framework for Real-Time Optimal Control, 2210

Ross, I. Michael	Naval Postgraduate School
Fahroo, Fahroo	Naval Postgraduate School

14:40
Evaluation of a New Algorithm for Model Predictive Control Based on Non-Feasible Search Directions Using Premature Termination, 2216

Milman, Ruth	Univ. of Toronto
Davison, Edward J.	Univ. of Toronto

15:00
An Optimal Control Problem for Automatic Air Collision Avoidance, 2222

Ikeda, Yutaka	Boeing Company
Kay, Jacob	Bihrle Applied Res. Inc.

15:20
CLF-Based Nonlinear Control with Polytopic Input Constraints, 2228

Curtis, Jess	Air Force Res. Lab.

15:40
Control Law for Market-Based Semi-Active Tuned Liquid Column Dampers, 2234

Li, Hong-Nan	Dalian Univ. of Tech.

16:00
Parameter Estimation for Non-Linear Continuous-Time Systems in a Bounded Error Context, 2240

Raissi, Tarek	Univ. Paris XII
Ramdani, Nacim	Univ. Paris XII
Candau, Yves	Univ. Paris XII

WeM08	Maui Suite 3
Automotive Vehicle Control	**Regular Session**
Chair: Di Bernardo, Mario	Univ. of Sannio
Co-Chair: Shiriaev, Anton	Odense Univ.

14:20
A New Nonlinear Observer for Tire/Road Distributed Contact Friction, 2246

Canudas de Wit, Carlos	Lab. of Automatic Control of Grenoble, CNRS
Petersen, Morten Lind	Univ. of Southern Denmark
Shiriaev, Anton	Odense Univ.

14:40
MCS Adaptive Control of Vehicle Dynamics: An Application of Bifurcation Techniques to Control System Design, 2252

Catino, Bruno	Univ. degli Studi di Napoli Federico II
Santini, Stefania	Univ. di Napoli Federico II
Di Bernardo, Mario	Univ. of Sannio

15:00
Performance Benefits in Passive Vehicle Suspensions Employing Inerters, 2258

Smith, Malcolm C.	Univ. of Cambridge
Wang, Fu-Cheng	National Taiwan Univ.

15:20
On Performance Evaluation Methods and Control Strategies for Semi-Active Suspension Systems, 2264

Savaresi, Sergio M.	Pol. Di Milano
Bittanti, Sergio	Pol. di Milano
Silani, Enrico	Pol. di Milano
porciani, nicola	Ferrari

15:40
Semi-Active Control of Vehicle Vibration with MR-Dampers, 2270

Wang, En Rong	Concordia Univ.
Ma, Xiao Qing	Concordia Univ.
Rakheja, Subhash	Concordia Univ.
Su, Chun-Yi	Concordia Univ.

16:00
Fault Diagnostics in the Differential Brake Control System Using the Analytical Redundancy Technique, 2276

Hahn, Jin-Oh	Korea Air Force Acad.
You, Seung-Han	Seoul National Univ.
Cho, Young Man	Seoul National Univ.
Kang, Soojoon	Korea Air Force Acad.
Lee, Kyo Il	Seoul National Univ.

WeM09	Maui Suite 4
H-Infinity Control	**Regular Session**
Chair: Bhattacharyya, Shankar P.	Texas A & M Univ.
Co-Chair: Christiansson, Anna-Karin	Univ. of Trollhattan/Uddevalla

14:20
H-Inf Design with First Order Controllers, 2282

Tantaris, Richard	Tennessee State Univ.
Keel, Lee H.	Tennessee State Univ.
Bhattacharyya, Shankar P.	Texas A & M Univ.

14:40
Transient Response Shaping in H Infinity Control by Eigenstructure Assignment to Convex Regions, 2288

Satoh, Atsushi	Nara Inst. of Science And Tech.
Okubo, Junro	Nara Inst. of Science And Tech.
Sugimoto, Kenji	Nara Inst. of Science and Tech.

15:00
Active H_2 and H_inf Shunt Control of Electromagnetic Transducers., 2294

Fleming, Andrew	The Univ. of Newcastle
Behrens, Sam	The Univ. of Newcastle
Moheimani, S. O. Reza	The Univ. of Newcastle

15:20
H_infinity Entropy and the Law of Requisite Variety, 2300

Zhang, Hui	Zhejiang Univ.
Sun, Youxian	Zhejiang Univ.

15:40
Synthesis of Sampled-Data H Infinity Servo Controller with Generalized Hold, 2302

Fujioka, Hisaya	Kyoto Univ.
Hara, Shinji	The Univ. of Tokyo

16:00
Low Order Sampled-Data H_inf Control, 2308

Christiansson, Anna-Karin	Univ. of Trollhattan/Uddevalla
Lennartson, Bengt	Chalmers Univ. of Tech.

WeM10	Guest Room 350
Control and Control-Oriented Modelling in Distributed Combustion and Flow	**Invited Session**
Chair: Tadmor, Gilead	Northeastern Univ.
Co-Chair: Banaszuk, Andrzej	United Tech. Res. Center
Organizer: Tadmor, Gilead	Northeastern Univ.
Organizer: Banaszuk, Andrzej	United Tech. Res. Center

14:20
A Multiscale Measure for Mixing and Its Applications (I), 2314

Mathew, George	Univ. of California, Santa Barbara
Mezic, Igor	Univ. of California, Santa Barbara
Petzold, Linda	Univ. of California Santa Barbara

14:40
Modeling and Control of Minimal Flow Unit Turbulence in Plane Couette Flow (I), 2322

Smith, Troy R.	Princeton Univ.
Moehlis, Jeff	Princeton Univ.
Holmes, Philip J.	Princeton Univ.

15:00
A Backward-Facing Step Combustor: Reduced-Order Modeling and Control (I), 2328

Park, Sungbae	Massachusetts Inst. of Tech.
Wachsman, Adam	Massachusetts Inst. of Tech.
Yi, Tongxun	Massachusetts Inst. of Tech.
Wee, Daehyun	Massachusetts Inst. of Tech.
Annaswamy, Anuradha	Massachusetts Inst. of Tech.
Ghoniem, Ahmed F.	Massachusetts Inst. of Tech.

15:20
Control, Observation and Energy Regulation of Wake Flow Instabilities (I), 2334

Tadmor, Gilead	Northeastern Univ.
Noack, Bernd R	Tech. Univ. Berlin
Dillmann, Andreas	Tech. Univ. Berlin
Gerhard, Johannes	Tech. Univ. Berlin
Pastoor, Mark	Tech. Univ. Berlin
King, Rudibert	Tech. Univ. Berlin
Morzynski, Marek	Poznan Univ. of Tech.

15:40
Fuel Control of a Ducted Bluffbody Flame (I), 2340

Mehta, Prashant G.	United Tech. Res. Center
Banaszuk, Andrzej	United Tech. Res. Center
Soteriou, Marios	United Tech. Res. Center
Mezic, Igor	Univ. of California, Santa Barbara

16:00
A Linear Model for Control of Thermoacoustic Instabilities on Annular Domain (I), 2346

Banaszuk, Andrzej	United Tech. Res. Center
Hagen, Gregory	United Tech. Res. Center
Mehta, Prashant G.	United Tech. Res. Center
Oppelstrup, Jesper	KTH

WeM11	Guest Room 351
Computational Method for System Properties	**Regular Session**
Chair: Bhaya, Amit	Univ. Federal Do Rio De Janeiro
Co-Chair: Varga, Andras	German Aerospace Center

14:20
A Newton Algorithm for Invariant Subspace Computation with Large Basins of Attraction, 2352
    Absil, Pierre-Antoine   Univ. de Liege
    Sepulchre, Rodolphe J.   Univ. de Liege
    Van Dooren, Paul   Univ. Catholique de Louvain
    Mahony, R.   Australian National Univ.

14:40
Robust and Minimum Norm Partial Pole Assignment in Vibrating Structures with Aerodynamics Effects, 2358
    Datta, Biswa   NIU
    Lin, Wen-Wei   National Tsing Hua Univ.
    Wang, Jenn-Nan   National Taiwan Univ.

15:00
A New Approach to the Shifted QR Algorithm for the Hermitian Eigenvalue Problem, 2364
    Nikpour, Maziar   Univ. of Melbourne
    Manton, Jonathan H.   Univ. of Melbourne
    Mareels, Iven M. Y.   Univ. of Melbourne

15:20
Strongly Stable Algorithm for Computing Periodic System Zeros, 2368
    Varga, Andras   German Aerospace Center

15:40
Iterative Methods As Dynamical Systems with Feedback Control, 2374
    Bhaya, Amit   Univ. Federal do Rio De Janeiro
    Kaszkurewicz, Eugenius   Univ. Federal do Rio de Janeiro

16:00
LAPACK-Based Condition and Error Estimators for Kalman Filter Design, 2381
    Petkov, Petko Hr.   Tech. Univ. of Sofia
    Konstantinov, Mihail M.   Univ. of Architecture & Civil
                              Engineering
    Christov, Nicolai D.   Tech. Univ. of Sofia

WeM12   **Maui Suite 5**
Control of Nonlinear Systems   **Regular Session**
    Chair: Bhat, Sanjay P.   Indian Inst. of Tech. - Bombay
    Co-Chair: Smith, Adam   Boston Univ.

14:20
Controllability of Spacecraft Attitude under Magnetic Actuation, 2383
    Bhat, Sanjay P.   Indian Inst. of Tech. - Bombay
    Dham, Ajit Singh   Indian Air Force

14:40
Semiglobal Regulation of Linear Systems in Presence of Measurements Constraint, 2389
    Marconi, Lorenzo   Univ. di Bologna

15:00
Output Tracking of Underactuated Rotary Inverted Pendulum by Nonlinear Controller, 2395
    Yan, Qiguo   FlyingTiger Tech. Inc.

15:20
How Feedback Can Tune a Bifurcation Parameter towards Its Unknown Critical Bifurcation Value, 2401
    Moreau, Luc   Eindhoven Univ.
    Sontag, Eduardo D.   Rutgers Univ.
    Arcak, Murat   Rensselaer Pol. Inst.

15:40
Vortex Methods for the Control of Stall, 2407
    Smith, Adam   Boston Univ.
    Baillieul, John   Boston Univ.

16:00
Generalized Quadratic Stability for Perturbated Singular Systems, 2413
    Lu, Guoping   Nantong Inst. of Tech.
    Ho, Daniel W. C.   City Univ. of Hong Kong
    Yeung, L.F.   City Univ. of Hong Kong

WeM13   **Guest Room 450**
Statistical Learning Methods   **Invited Session**
in Optimization, Control and
System Identification
    Chair: Calafiore, Giuseppe   Pol. di Torino
    Co-Chair: Dabbene, Fabrizio   Pol. di Torino
    Organizer: Calafiore,   Pol. di Torino
    Giuseppe
    Organizer: Dabbene, Fabrizio   Pol. di Torino

14:20
On Tractable Approximations of Randomly Perturbed Convex Constraints (I), 2419
    Nemirovski, Arkadi   Tech. Israel

14:40
Robust Convex Programs: Randomized Solutions and Applications in Control (I), 2423
    Calafiore, Giuseppe   Pol. di Torino
    Campi, M. C.   Univ. di Brescia

15:00
Samoling Random Transfer Functions (I), 2429
    Lagoa, Constantino M.   Pennsylvania State Univ.
    Li, Xiang   Pennsylvania State Univ.
    Mazzaro, María Cecilia   Pennsylvania State Univ.
    Sznaier, Mario   Penn State Univ.

15:20
Quasi-Monte Carlo Methods in Robust Control Design (I), 2435
    Hokayem, Peter   Univ. of New Mexico
    Abdallah, Chaouki T.   Univ. of New Mexico
    Dorato, Peter   Univ. of New Mexico

15:40
On Constraint Sampling in the Linear Programming Approach to Approximate Dynamic Programming (I), 2441
    de Farias, Daniela   MIT
    Van Roy, Benjamin   Stanford Univ.

16:00
Probabilistic Robust Control Design of Polynomial Vector Fields, 2447
    wang, qian   Penn. state Univ.

WeM14   **Guest Room 451**
Fault-Tolerant Systems   **Regular Session**
    Chair: Gray, W. Steven   Old Dominion Univ.
    Co-Chair: Gonzalez, Oscar   Old Dominion Univ.
    R.

14:20
Controller Reconfiguration Based on LTR Design, 2453
    Niemann, Henrik   Tech. Univ. of Denmark
    Stoustrup, Jakob   Aalborg Univ.

14:40
Controller Failure Time Analysis for Symmetric H-Infinity Control Systems, 2459
    Zhai, Guisheng   Wakayama Univ.
    Lin, Hai   Univ. of Notre Dame
    Antsaklis, Panos J.   Univ. of Notre Dame

15:00
Closed-Loop Performance Measures for Flight Controllers Subject to Neutron-Induced Upsets, 2465
    Gray, W. Steven   Old Dominion Univ.
    Zhang, Hong   Old Dominion Univ.
    Gonzalez, Oscar R.   Old Dominion Univ.

15:20
Gain Margin Issues of the Two-Stage and Single-Stage LQ Reliable Controls, 2471
    Hsieh, Chien-Shu   Ta Hwa Inst. of Tech.
    Shieh, Jenn-Jong   Ta Hwa Inst. of Tech.

15:40
Safety Integrity Analysis Framework for a Controller According to IEC 61508, 2477
    Suyama, Koichi   Tokyo Univ. of Mercantile Marine

16:00
Stability and Performance of the Stochastic Fault Tolerant Control Systems, 2484

Cheng, Chuwang	East China Normal Univ.
Zhao, Qing	Univ. of Alberta
Tao, Feng	Univ. of Alberta

WeMPI   Grand Promenade
Linear Systems and Control   Poster/Interactive Paper Session
Education

Chair: Djaferis, Theodore E.	Univ. of Massachusetts

14:20
Partial Stability Preserving Maps and Stabilization, 2490

Djaferis, Theodore E.	Univ. of Massachusetts

Analytical Design of a Two-Degree-Of-Freedom Controller for Interval Plants, 2496

Zhang, Weidong	Shanghai Jiaotong Univ.

Improved Bounds of Stability Robustness for Linear Systems with Structured Perturbation, 2498

liu, changyou	Civil Aviation Univ. of China

A Review of Time-Delay Estimation Techniques, 2502

Björklund, Svante	Linköpings Univ.
Ljung, Lennart	Linköping Univ.

Fun Control Experiments with Matlab and a Joystick, 2508

Bodson, Marc	Univ. of Utah

Web-Based Environment for Collaborative Remote Experimentation, 2514

Roehrig, Christof	Univ. of Hagen
Bischoff, Andreas	Univ. of Hagen

Bounded Controller Design of an ABR Explicit Rate Algorithm for ATM Switches, 2519

Tarbouriech, Sophie	LAAS-CNRS
Ariola, Marco	Univ. degli Studi di Napoli Federico II
Abdallah, Chaouki T.	Univ. of New Mexico

WeP01   Monarchy Ballroom
Multiple Agent Systems   Regular Session

Chair: Gazi, Veysel	Atilim Univ.
Co-Chair: Marshall, Joshua A.	Univ. of Toronto

16:40
Escaping Capture by Multiple, Intelligent, Well-Informed, Cooperative Pursuers Amidst Stationary Clutter, 2525

Masoud, Ahmad	KFUPM

17:00
Formation Control of a Multi-Agent System Using Decentralized Nonlinear Servomechanism, 2531

Gazi, Veysel	Atilim Univ.

17:20
Conflict Resolution in Multi-Agent Systems, 2537

Resmerita, Stefan	Tech. - Israel Inst. of Tech.
Heymann, Michael	Tech. Israel Inst. of Tech.

17:40
Multiple Agent Team Theoretic Decision-Making for Searching Unknown Environments, 2543

Rajnarayan, Dev Gorur	Stanford Univ.
Ghose, Debasish	Indian Inst. of Science

18:00
Cooperative Negotiation Strategy in Multi-Agent System, 2549

Tian, Yajie	Advanced Telecommunications Res. Inst. International
Liu, Yuan	Kyoto Univ.
Shimohara, Katsunori	Advanced Telecommunications Res. Inst. International
Sawaragi, Tetsuo	Kyoto Univ.

18:20
A Pursuit Strategy for Wheeled-Vehicle Formations, 2555

Marshall, Joshua A.	Univ. of Toronto
Broucke, Mireille E.	Univ. of Toronto
Francis, Bruce A.	Univ. of Toronto

WeP02   Regency A
Nonlinear Systems II   Regular Session

Chair: Middleton, Rick	Univ. of Newcastle
Co-Chair: Dower, Peter M.	The Univ. of Melbourne

16:40
Conjectures and Counterexamples on Optimal L-2 Disturbance Attenuation in Nonlinear Systems, 2561

Middleton, Rick	Centre for Integrated Dynamics and Control, The Univ. of Ne
Lau, Katrina	Centre for Integrated Dynamics and Control, The Univ. of Ne
Braslavsky, Julio H.	Centre for Integrated Dynamics and Control, The Univ. of Ne

17:00
On Quantized Control and Geometric Optimization, 2567

Bullo, Francesco	Univ. of Illinois at Urbana-Champaign
Liberzon, Daniel	Univ. of Illinois at Urbana-Champaign

17:20
A Max-Plus Affine Power Method for Approximation of a Class of Mixed L-2 / L-Infinity Value Functions., 2573

Dower, Peter M.	Univ. of Melbourne
McEneaney, William M.	UC San Diego

17:40
Estimation of Signals in an Interconnection of LTI Systems and Unknown Static Maps, 2579

Wemhoff, Eric	Univ. of California at Berkeley
Packard, Andrew K.	Univ. of California at Berkeley

18:00
Controllability of Hamiltonian Systems with Drift: Action-Angle Variables and Ergodic Partition, 2585

Mezic, Igor	Univ. of California, Santa Barbara

18:20
A Characterization of Strongly Invariant Systems for a Class of Non-Lipschitz Multifunctions, 2593

Wolenski, Peter R.	Louisiana State Univ.
Rios, Vinicio R.	Graduate Student

WeP03   Regency B
Stochastic Network Models   Regular Session

Chair: Meyn, Sean	Univ. of Illinois
Co-Chair: Hayat, Majeed	Univ. of New Mexico

16:40
A Game Theoretic Approach to Decision and Analysis in Network Intrusion Detection, 2595

Alpcan, Tansu	Univ. of Illinois at Urbana-champaign
Basar, Tamer	Univ. of Illinois at Urbana-Champaign

17:00
A Stochastic Approximation Approach to the Robust Power Control Problem, 2601

Zhang, Huanshui	Hong Kong Pol. Univ.
Wong, Wing Shing	Chinese Univ. of Hong Kong
Ge, Weiyan	Chinese Univ. of Hong Kong
Caines, Peter E.	McGill Univ. Montreal

17:20
Stochastic Models of Proportionally Fair Congestion Controllers,
2606
Deb, Supratim   Univ. of Illinois at Urbana-
                                                    Champaign
Srikant, Rayadurgam   Univ. of Illinois at Urbana-
                                                    Champaign
17:40
Value Functions and Performance Evaluation in Stochastic
Network Models, 2612
Borkar, Vivek S.   Tata Inst. of Fundamental Res.
Meyn, Sean   Univ. of Illinois
18:00
A Transport Model for Flow Processes Characterized by Time-
Varying Time Delays, 2618
Parlos, Alexander G.   Texas A&M Univ.
Ye, Dan   Texas A&M Univ.
18:20
Analysis of Abstract Simulation Via Stochastic Differential Equation
Models, 2620
Wu, Yujing   Univ. of Massachusetts at
                                               Amherst
Gong, Wei-Bo   Univ. of Massachusetts at
                                               Amherst
Towsley, Don   Univ. of Massachusetts at
                                               Amherst

WeP04	Regency C
Nanotechnology: Control Needs and Related Perspectives (II)	Invited Session

Chair: Salapaka, Murti V.   Iowa State Univ.
Co-Chair: Baheti, Kishan   National Science Foundation
Organizer: Salapaka, Murti V.   Iowa State Univ.
Organizer: Baheti, Kishan   National Science Foundation
16:40
Iterative Feedforward Compensation of Hysteresis in Piezo
Positioners (I), 2626
Leang, Kam K.   Univ. of Washington
Devasia, Santosh   Univ. of Washington
17:00
Closed-Loop Identification of a Micro-Sensor (I), 2632
Chen, Yen-cheng   Univ. of California at Los Angeles
Hui, Jason K.   The Aerospace Corp.
M'Closkey, Robert   Univ. of California at Los Angeles
17:20
Model Development for Piezoceramic Nanopositioners (I), 2638
Smith, Ralph C.   North Carolina State Univ.
Hatch, Andrew   North Carolina State Univ.
De, Tathagata   Iowa State Univ.
17:40
Control of Nanopositioning Devices (I), 2644
Salapaka, Srinivasa   Massachusetts Inst. of Tech.
Sebastian, Abu   Iowa State Univ.
18:00
Using Nonlinear Dynamics for Performance Enhancement in Micro
and Nano-Scale Devices (I), 2650
Turner, Kimberly   Univ. of California, Santa Barbara
Baskaran, Rajashree   Univ. of California, Santa Barbara
Zhang, Wenhua   Univ. of California, Santa Barbara
18:20
Nano-Precision Control of Micromirrors Using Output Feedback (I),
2652
Maithripala, D. H. S.   Texas Tech. Univ.
Gale, Richard   Texas Tech. Univ.
Holtz, Mark   Texas Tech. Univ.
Berg, Jordan M.   Texas Tech. Univ.
Dayawansa, Wijesuriya P.   Texas Tech. Univ.

WeP05	Maui Suite 1
Discrete-Event Systems	Regular Session

Chair: Lafortune, Stephane   Univ. of Michigan
Co-Chair: Takai, Shigemasa   Wakayama Univ.
16:40
Safe Diagnosability of Discrete Event Systems, 2658
Paoli, Andrea   Univ. of Bologna
Lafortune, Stephane   Univ. of Michigan
17:00
Immediate Observability of Discrete Event Systems with
Application to User-Interface Design, 2665
Oishi, Meeko   Stanford Univ.
Hwang, Inseok   Stanford Univ.
Tomlin, Claire J.   Stanford Univ.
17:20
The Control and Verification of Similar Agents Operating in a
Broadcast Network Environment, 2673
Rohloff, Kurt   The Univ. of Michigan
Lafortune, Stephane   Univ. of Michigan
17:40
On Multi-Agent Product Systems: Graph MA Products and Partially
Observed MA Products, 2680
Romanovski, Iakov   Queen's Univ.
Caines, Peter E.   McGill Univ.
18:00
Supervisor Synthesis for a Class of Concurrent Discrete Event
Systems, 2686
Takai, Shigemasa   Wakayama Univ.
Ushio, Toshimitsu   Osaka Univ.
18:20
Ensuring the Conformance of Reactive Discrete-Event Systems
Using Supervisory Control, 2692
Jeron, Thierry   INRIA
Marchand, Herve   Irisa/inria Rennes
rusu, vlad   Irisa/inria Rennes
Tschaen, Valery   IRISA

WeP06	Maui Suite 2
Adaptive Control Applications	Regular Session

Chair: Astolfi, Alessandro   Imperial Coll.
Co-Chair: Ortega, Romeo   LSS-SUPELEC
16:40
Gap Metric Robustness of Adaptive Controllers for a Class of
Nonlinear Systems, 2698
Bian, Wenming   Univ. of Southampton
French, Mark   Univ. of Southampton
17:00
Globally Convergent Adaptive Tracking of Spacecraft Angular
Velocity with Inertia Identification and Adaptive Feedback
Linearization, 2704
Sanyal, Amit   Univ. of Michigan
Chellappa, Madhusudhan   Univ. of Michigan - Ann Arbor
Valk, Jean Luc   Eindhoven Univ. of Tech.
Shen, Jinglai   Univ. of Michigan
Ahmed, Jasim   Senior Systems Engineer
Bernstein, Dennis S.   Univ. of Michigan
17:20
Adaptive Altitude Control for a Small Helicopter in a Vertical Flying
Stand, 2710
Dzul, Alejandro   Inst. Tecnológico de la Laguna
Lozano, Rogelio   Univ. de Tech. de Compiegne
Castillo, Pedro   Univ. de Tech. de Compiegne
17:40
Direct Adaptive Control for a Class of Multi-Input and Multi-Output
Nonlinear Systems Using Neural Networks, 2716
Ge, Shuzhi Sam   National Univ. of Singapore
Li, Guangyong   Michigan State Univ.
Xi, Ning   Michigan State Univ.

18:00
Global Magnetic Attitude Control of Spacecraft in the Presence of Gravity Gradient, 2722

Lovera, Marco	Pol. di Milano
Astolfi, Alessandro	Imperial Coll.

18:20
Multivariable Adaptive Control with Transient Overparametrization, 2728

Hsu, Liu	COPPE - Federal Univ. of Rio de Janeiro
Costa, Ramon R.	COPPE - Federal Univ. of Rio de Janeiro
Imai, Alvaro Koji	COPPE/UFRJ

WeP07	Regency Boardroom
New Trends on Geometric and Optimal Control I	Invited Session

Chair: Boscain, Ugo V.	SISSA-ISAS
Co-Chair: Piccoli, Benedetto	I.A.C.-C.N.R.
Organizer: Boscain, Ugo V.	SISSA-ISAS
Organizer: Piccoli, Benedetto	I.A.C.-C.N.R.

16:40
Controllability by Low Modes Forcing of the Navier-Stokes Equation with Periodic Data (I), 2734

Agrachev, Andrey A.	SISSA, Trieste, Italy & Steklov Mathem. Inst. Moscow, Russia
Sarychev, Andrey V.	DiMaD, Univ. of Florence, Italy

17:00
Time Optimal Synthesis for a So(3)-Left-Invariant Control System on a Sphere (I), 2740

Boscain, Ugo V.	SISSA-ISAS
Chitour, Yacine	Lab. D'analyse Numerique

17:20
On Sufficient Optimality Conditions for a Singular Extremal (I), 2746

Stefani, Gianna	Univ. Di Firenze

17:40
Underwater Vehicles: A Surprising Non Time-Optimal Path (I), 2750

Chyba, Monique	Univ. of Hawaii

18:00
Controlled Switching in Singularly Perturbed Systems (I), 2756

Artstein, Zvi	The Weizmann Inst.

18:20
Optimal Control for a Bilinear Model with Recruiting Agent in Cancer Chemotherapy (I), 2762

Ledzewicz, Urszula	Southern Illinois Univ. at Edwardsville
Schattler, Heinz M.	Washington Univ.

WeP08	Maui Suite 3
Automotive and Aerospace Systems	Regular Session

Chair: Hesseling, Rogier Jelke	Tech. Univ. Eindhoven
Co-Chair: Soto, Marco	North Carolina State Univ.

16:40
Optimal Coordination of Variable Speed Limits to Suppress Shock Waves, 2768

Hegyi, Andreas	Delft Univ. of Tech.
De Schutter, Bart	Delft Univ. of Tech.
Hellendoorn, Hans	Delft Univ. of Tech.

17:00
A Macroscopic Traffic Flow Model for Integrated Control of Freeway and Urban Traffic Networks, 2774

van den Berg, Monique	Delft Univ. of Tech.
Hegyi, Andreas	Delft Univ. of Tech.
De Schutter, Bart	Delft Univ. of Tech.
Hellendoorn, Hans	Delft Univ. of Tech.

17:20
Identification and Control for Future Restraint Systems, 2780

Hesseling, Rogier Jelke	Tech. Univ. Eindhoven
Steinbuch, Maarten	Eindhoven Univ. of Tech.
Veldpaus, Frans	Eindhoven Univ. of Tech.
Klisch, Thomas	BMW AG

17:40
Extended LTI Anti-Windup Control with Actuator Magnitude and Rate Saturations, 2786

Wu, Fen	North Carolina State Univ.
Soto, Marco	North Carolina State Univ.

18:00
Constrained Parallel Global Optimisation for Boundary Layer Transition Control, 2792

Rogers, Eric	Univ. of Southampton
Tutty, Owen	Univ. of Southampton
Nelson, Phil	Univ. of Southampton
Veres, Galina	Univ. of Southampton

18:20
Dynamics and Control of an Elastic Dumbell Spacecraft in a Central Gravitational Field, 2798

Sanyal, Amit	Univ. of Michigan
Shen, Jinglai	Univ. of Michigan
McClamroch, N. Harris	Univ. of Michigan

WeP09	Maui Suite 4
Markov Processes	Regular Session

Chair: Schwartz, Charles	Northwestern Univ.
Co-Chair: Benzaouia, Abdellah	Faculty of Science Semlalia, Univ. Cadi Ayyad

16:40
Control of Jump Linear Systems Having Semi-Markov Sojourn Times, 2804

Schwartz, Charles	Northwestern Univ.
Haddad, Abraham H.	Northwestern Univ.

17:00
Regulator Problem for Discrete-Time Delay Systems with Markovian Jumping Parameters and Constrained Control, 2806

Daraoui, N.	Univ. Cadi Ayyad
Benzaouia, Abdellah	Univ. Cadi Ayyad
Boukas, El-Kebir	Ec. Pol. de Montréal

17:20
A Mode-Independent H-Infinity Filter Design for Discrete-Time Markovian Jump Linear Systems, 2811

de Souza, Carlos E.	Lab. Nacional de Computacao Cientifica - LNCC

17:40
Application of Dynamic Programming in Genetic Regulatory Networks, 2817

Datta, Aniruddha	Texas A & M Univ.
Choudhary, Ashish	Texas A&M Univ.
Dougherty, Edward	Texas A&M Univ.
Bittner, Michael	TGEN

18:00
Policy Gradient Stochastic Approximation Algorithms for Adaptive Control of Constrained Time Varying Markov Decision Processes, 2823

Vázquez-Abad, Felisa J.	Univ. of Montreal
Krishnamurthy, Vikram	Univ. of British Columbia

18:20
HaTCh: A Two-Level Caching Scheme for Estimating the Number of Active Flows, 2829

Yi, Sungwon	Pennsylvania State Univ.
Deng, Xidong	Pennsylvania State Univ.
Kesidis, George	Pennsylvania State Univ.
Das, Chita	Pennsylvania State Univ.

17:40
*An Ant Colony Optimization Approach for No-Wait Flow-Line Batch
Scheduling with Limited Batch Sizes, 2959*

Wang, Xiao-Rong	Zhejiang Univ.
Wu, Tie-Jun	Zhejiang Univ.

18:00
*Tracking Multiple Maneuvering Targets by Joint Combinations of
IMM and PDA, 2965*

Blom, Henk A.P.	National Aerospace Lab. NLR
Bloem, Edwin A.	National Aerospace Lab. NLR

WeP14	Guest Room 451
Sliding Mode Control of Linear System	**Regular Session**

Chair: Ferrara, Antonella	Univ. of Pavia
Co-Chair: Hirschorn, Ronald	Queen's Univ.

16:40
*Geometric Sliding Mode Control: The Linear and Linearised
Theory, 2971*

Hirschorn, Ronald	Queen's Univ.
Lewis, Andrew D.	Queen's Univ.

17:00
*Constrained Optimization Via Sliding Modes in Dynamic Linear
Systems, 2977*

Ferrara, Antonella	Univ. of Pavia
Utkin, Vadim I.	Ohio State Univ.

17:20
*A Practical Method for the Design of Sliding Mode Controllers
Using Linear Matrix Inequalities, 2982*

Edwards, Christopher	Univ. of Leicester

17:40
*Mini-Max Integral Sliding Mode Control for Multimodel Linear
Uncertain Systems, 2988*

Poznyak, Alexander S.	CINVESTAV-IPN
Fridman, Leonid M.	National Autonomous Univ. of Mexico
Bejarano Rodriguez, Francisco Javier	CINVESTAV

18:00
*Variable Structure Output Feedback Control for Linear System with
the Uncertain Output Matrix, 2994*

xiang, ji	Zhejiang Univ. Yuquan Campus
Su, HongYe	Zhejiang Univ. Yuquan Campus
Chu, Jian	Zhejiang Univ. Yuquan Campus

18:20
Sliding Mode-Delta Modulation Control of a ``buck, 2999

Sira-Ramirez, Hebertt J.	CINVESTAV-IPN

WePPI	Grand Promenade
On Control Education: An Interactive Interdisciplinary Session	**Invited Poster/Interactive Session**

Chair: Pasik-Duncan, Bozenna	Univ. of Kansas
Organizer: Pasik-Duncan, Bozenna	Univ. of Kansas
Organizer: Westman, John J.	Miami Univ. of Ohio
Organizer: Shor, Molly H.	Oregon State Univ.
Organizer: Bushnell, Linda G.	Univ. of Washington
Organizer: Hanson, Floyd B.	Univ. of Illinois at Chicago
Organizer: Duncan, Tyrone E.	Univ. of Kansas
Organizer: Heck, Bonnie S.	Georgia Inst. of Tech.

16:40
*Education That Integrates Computer Science and Control
Engineering (I), 3005*

Heck, Bonnie S.	Georgia Inst. of Tech.
Shor, Molly H.	Oregon State Univ.
Walpole, Jonathan	Oregon Graduate Inst.

Control Education Via Autonomous Robotics (I), 3011

Bushnell, Linda G.	Univ. of Washington
Crick, Andy P.	Univ. of Washington

*Web Based Interactive Simulation of Autonomous Vehicles
Manoeuvres (I), 3018*

Kolodko, Julian	Griffith Univ.
George, Abraham Kaithayil	Griffith Univ.
Blazevic, Stjepan	Griffith Univ.
Wang, Nanbin	Griffith Univ.
Vlacic, Ljubo	Griffith Univ.

*Computational Stochastic Control: Basic Foundations, Complexity
and Techniques (I), 3024*

Hanson, Floyd B.	Univ. of Illinois at Chicago

Cancer Treatment and Control (I), 3030

Westman, John J.	Miami Univ. of Ohio

*Research Experiences at All Levels: From K-12 through PhD and
Beyond (I), 3036*

Pasik-Duncan, Bozenna	Univ. of Kansas
Duncan, Tyrone E.	Univ. of Kansas

WeES1	Regency A
Xerox Industry Sponsor Session	**Evening Session**

WeES2	Maui Suite 4
The MathWorks Industry Sponsor Session	**Evening Session**

WeES3	Monarchy Ballroom
Keynote Talk: J. Bryzek, Control Issues of MEMS	**Evening Session**

Chair: Lewis, Frank L.	Univ. of Texas at Arlington

19:00
Control Issues of MEMs, 3039

Bryzek, Janusz	BN Ventures
Abbott, Eric	Honeywell
Flannery, Anthony	Agile Microsystems
Cagle, David	*Agile Microsystems*
Maitan, Jacek	Transparent Networks

ThDPL	Monarchy Ballroom
Plenary Talk: Tamer Basar	**Plenary Session**

Chair: Parisini, Thomas	Univ. of Trieste

08:00
Controlling the Internet: A Survey and Some New Results, 3048

Liu, Shao	Univ. of Illinois at Urbana-Champaign
Basar, Tamer	Univ. of Illinois at Urbana-Champaign
Srikant, Rayadurgam	Univ. of Illinois at Urbana-Champaign

ThA01	Monarchy Ballroom
Graph Theoretic Methods in Cooperative Control	**Regular Session**

Chair: Mesbahi, Mehran	Univ. of Washington
Co-Chair: Lall, Sanjay	Stanford Univ.

09:20
State-Dependent Graphs, 3058

Mesbahi, Mehran	Univ. of Washington

09:40
*Sensor and Network Topologies of Formations with Direction,
Bearing and Angle Information between Agents, 3064*

Eren, Tolga	Yale Univ.
Whiteley, Walter	York Univ.
Morse, A. Stephen	Yale Univ.
Belhumeur, Peter N.	Columbia Univ.
Anderson, Brian D. O.	Australian National Univ.

10:00
Leaderless Coordination Via Bidirectional and Unidirectional Time-Dependent Communication, 3070
    Moreau, Luc   Eindhoven Univ.

10:20
Coordinated Collective Motion of Groups of Autonomous Mobile Robots: Analysis of Vicsek's Model, 3076
    Savkin, Andrey V.   Univ. of New South Wales

10:40
Stability Analysis of Interconnected Nonlinear Systems under Matrix Feedback, 3078
    Cremean, Lars B.   California Inst. of Tech.
    Murray, Richard M.   California Inst. of Tech.

11:00
Dissipation Inequalities for Distributed Systems on Graphs, 3084
    Chen, Been-Der   Stanford Univ.
    Lall, Sanjay   Stanford Univ.

ThA02   **Regency A**
Nonlinear Systems III   **Regular Session**
    Chair: Grizzle, Jessy W.   Univ. of Michigan
    Co-Chair: Leonessa,   Univ. of Central Florida
    Alexander

09:20
Event-Based PI Control of an Underactuated Biped Walker, 3091
    Grizzle, Jessy W.   Univ. of Michigan
    Westervelt, Eric R.   The Ohio State Univ.
    Canudas de Wit, Carlos   ENSIEG-INPG

09:40
Adaptive Nonlinear Tracking Control of an Underactuated Nonminimum Phase Model of a Marine Vehicle Using Ultimate Boundedness, 3097
    yannick, Morel   Florida Atlantic Univ.
    Leonessa, Alexander   Univ. of Central Florida

10:00
Low-Observable Nonlinear Trajectory Generation for Unmanned Air Vehicles, 3103
    Misovec, Kathleen   Alphatech, Inc.
    Inanc, Tamer   California Inst. of Tech.
    Wohletz, Jerry   Alphatech, Inc.
    Murray, Richard M.   California Inst. of Tech.

10:20
Control of Underactuated Mechanical Systems with Drift Using Higher-Order Averaging Theory, 3111
    Vela, Patricio A.   California Inst. of Tech.
    Burdick, Joel W.   California Inst. of Tech.

10:40
Planar Propulsion through the Manipulation of Circulatory Flows, 3118
    Kelly, Scott D.   Univ. of Illinois at Urbana-Champaign
    Hukkeri, Ramadev B.   Univ. of Illinois at Urbana-Champaign

11:00
Nonlinear Block Integral Sliding Mode Control: Application to Induction Motor Control., 3124
    Rios Gastelum, Omar   Cinvestav Unidad Guadalajara
    Guadalupe
    Castillo-Toledo, Bernardino   Cinvestav Unidad Guadalajara
    Loukianov, Alexander G.   Cinvestav Unidad Guadalajara

ThA03   **Regency B**
Fundamental Limits on   **Invited Session**
Communication and Control
    Chair: Mitter, Sanjoy K.   Massachusetts Inst. of Tech.
    Co-Chair: Tatikonda, Sekhar   Yale Univ.
    Organizer: Elia, Nicola   Iowa State Univ.
    Organizer: Tatikonda, Sekhar   Yale Univ.

09:20
Robust Quantization for Digital Finite Communication Bandwidth (DFCB) Control (I), 3130
    Li, Keyong   Boston Univ.
    Baillieul, John   Boston Univ.

09:40
Upper Bounds to Transport Capacity of Wireless Networks (I), 3136
    Jovicic, Aleksandar   Univ. of Illinois
    Kulkarni, Sanjeev R.   Princeton Univ.
    Viswanath, Pramod   Univ. of Illinois

10:00
Some Scaling Properties of Large Distributed Control Systems (I), 3142
    Tatikonda, Sekhar   Yale Univ.

10:20
Noisy Data-Rate Limited Estimation: Renewal Codes (I), 3148
    Simsek, Tunc   Univ. of California at Berkeley
    Varaiya, Pravin P.   Univ. of California at Berkeley

10:40
A Control Theoretic Approach to Channel Equalization (I), 3155
    Venkatesh, S.R.   Boston Univ.
    Voulgaris, Petros G.   Univ. of Illinois at Urbana-Champaign
    Hadjicostis, Christoforos   Univ. of Illinois at Urbana-Champaign

11:00
Control-Oriented Feedback Communication Schemes (I), 3161
    Elia, Nicola   Iowa State Univ.

ThA04   **Regency C**
Parametric Programming in   **Invited Session**
Control System Design
    Chair: Kerrigan, Eric C.   Univ. of Cambridge
    Co-Chair: Bemporad, Alberto   Univ. of Siena
    Organizer: Kerrigan, Eric C.   Univ. of Cambridge
    Organizer: Johansen, Tor   Norweigian Univ. of Science &
    Arne   Tech.

09:20
Multiparametric Nonlinear Integer Programming and Explicit Quantized Optimal Control (I), 3167
    Bemporad, Alberto   Univ. of Siena

09:40
Further Results on Multiparametric Quadratic Programming (I), 3173
    Tïndel, Petter   Norwegian Univ. of Science & Tech.
    Johansen, Tor Arne   Norwegian Univ. of Science & Tech.
    Bemporad, Alberto   Univ. of Siena

10:00
Complexity Reduction of Receding Horizon Control, 3179
    Grieder, Pascal   ETH , Zurich
    Morari, Manfred   Swiss Federal Inst. of Tech.

10:20
Approximate Convex Multiparametric Programming (I), 3185
    Bemporad, Alberto   Univ. of Siena
    Filippi, Carlo   Univ. Degli Studi Di Padova

10:40
Infinite Time Optimal Control of Hybrid Systems with a Linear Performance Index (I), 3191
    Baotic, Mato   ETH - Swiss Federal Inst. of Tech.
    Christophersen, Frank J.   ETH - Swiss Federal Inst. of Tech.
    Morari, Manfred   Swiss Federal Inst. of Tech.

11:00
An Algorithm for Multi-Parametric Mixed Integer Semidefinite Optimisation (I), 3197
    Rowe, Camile   Univ. of Cambridge
    Maciejowski, Jan M.   Univ. of Cambridge

10:20
Tracking and Observer Design for a Motorized Euler-Bernoulli Beam, 3325
Nguyen, Tu Duc	Norwegian Univ. of Science And Tech.
Egeland, Olav	Norwegian Univ. of Sci. & Tech.

10:40
Extended Generalized Impedance Control for Redundant Manipulators, 3331
Pholsiri, Chalongrath	Robotics Res. Group, Univ. of Texas at Austin
Rabindran, Dinesh	Robotics Res. Group, Univ. of Texas at Austin
Pryor, Mitch	Robotics Res. Group, Univ. of Texas at Austin
Kapoor, Chetan	Robotics Res. Group, Univ. of Texas at Austin

11:00
Revisiting Problems Associated with Structural Properties of Robots with Applications to Controller Design, 3337
Ailon, Amit	Ben Gurion Univ. of The Negev
Berman, Nadav	Ben Gurion Univ. of The Negev
Arogeti, Shai	Ben Gurion Univ. of the Negev

ThA09	**Maui Suite 4**
Language-Based Descriptions of Multi-Modal Control Tasks	**Invited Session**
Chair: Hristu-Varsakelis, Dimitris	Univ. of Maryland
Co-Chair: Egerstedt, Magnus	Georgia Inst. of Tech.
Organizer: Hristu-Varsakelis, Dimitris	Univ. of Maryland
Organizer: Egerstedt, Magnus	Georgia Inst. of Tech.

09:20
Encoding Steering Control with Symbols (I), 3343
Bicchi, Antonio	Univ. di Pisa
Marigo, Alessia	IAC-CNR
Piccoli, Benedetto	I.A.C.-C.N.R.

09:40
Minimizing Attention in a Motion Control Context (I), 3349
Brockett, Roger	Harvard Univ.

10:00
Observation of Guarded Command Programs (I), 3353
Del Vecchio, Domitilla	California Inst. of Tech.
Klavins, Eric	Univ. of Washington

10:20
On the Structural Complexity of the Motion Description Language MDLe (I), 3360
Hristu-Varsakelis, Dimitris	Univ. of Maryland
Egerstedt, Magnus	Georgia Inst. of Tech.
Krishnaprasad, P. S.	Univ. of Maryland

10:40
From Discrete Specifications to Hybrid Control (I), 3366
Tabuada, Paulo	Univ. of Notre Dame
Pappas, George J.	Univ. of Pennsylvania

11:00
Explicit Solutions for Optimal Maneuver-Based Motion Planning (I), 3372
Frazzoli, Emilio	Univ. of Illinois at Urbana-champaign

ThA10	**Guest Room 350**
Constrained Control I	**Regular Session**
Chair: Tanner, Herbert	Univ. of New Mexico
Co-Chair: Petersen, John	Raytheon Missile Systems

09:20
Constrained Quadratic Programming Techniques for Control Allocation, 3378
Petersen, John	Raytheon Missile Systems
Bodson, Marc	Univ. of Utah

09:40
Controllability of Direction-Dependent Processes, 3384
Rosenqvist, Fredrik	Chalmers Univ. of Tech.
Karlstrom, Anders	Chalmers Univ. of Tech.

10:00
Decentralized Motion Control of Multiple Holonomic Agents under Input Constraints, 3390
Dimarogonas, Dimos	National Tech. Univ. of Athens
Zavlanos, Michalis	National Tech. Univ. of Athens
Loizou, Savvas	National Tech. Univ. of Athens
Kyriakopoulos, Kostas J.	National Tech. Univ. of Athens

10:20
Feedback Control of Enduring Rotary Motion of Devil Stick, 3396
Kawaida, Yasuyuki	FUJITSU Ltd.
Nakaura, Shigeki	Tokyo Inst. of Tech.
Ohata, Ryusuke	Tokyo Inst. of Tech.
Sampei, Mitsuji	Tokyo Inst. of Tech.

10:40
Partial Eigenstructure Assignment for Descriptor Linear Systems: A Complete Parametric Approach, 3402
Duan, Guang-Ren	Harbin Inst. of Tech.
Wang, Guo-sheng	Harbin Inst. of Tech.

11:00
Quadratically Constrained Attitude Control Via Semidefinite Programming, 3408
Kim, Yoonsoo	Univ. of Washington
Mesbahi, Mehran	Univ. of Washington

ThA11	**Guest Room 351**
Control Applications I	**Regular Session**
Chair: Rai, Sudhendu	Xerox Corp.
Co-Chair: Mestha, Lalit K.	Xerox Corp.

09:20
Track-Following Control of Hard Disk Drives Using Multi-Rate Sampled-Data H-Infinity Control, 3414
Hirata, Mitsuo	Chiba Univ.
Takiguchi, Masatoshi	Chiba Univ.
Nonami, Kenzo	Chiba Univ.

09:40
Multi-Rate Short Track-Seeking Control of Hard Disk Drives for Computation Saving, 3420
Hirata, Mitsuo	Chiba Univ.
Tomizuka, Masayoshi	Univ. of California at Berkeley

10:00
A Nonlinear Dynamic Filter to Improve Disturbance Rejection in Optical Storage Drives, 3426
Heertjes, Marcel	Philips Centre For Industrial Tech.
Sperling, Frank	Philips Centre For Industrial Tech.

10:20
Nonlinear Stabilization of a Spherical Particle Trapped in an Optical Tweezer, 3431
Ranaweera, Aruna	Univ. of California, Santa Barbara
Bamieh, Bassam	Univ. of California at Santa Barbara
Teel, Andrew R.	Univ. of California at Santa Barbara

10:40
Optimization, Estimation, and Control for Kinetic Monte Carlo Simulations of Thin Film Deposition, 3437
Gallivan, Martha A.	Georgia Inst. of Tech.

11:00
Robust Control Approach to Atomic Force Microscopy, 3443
Sebastian, Abu	Iowa State Univ.
Cleveland, Jason	Asylum Res.
Salapaka, Murti V.	Iowa State Univ.

Establishment of Decision Factors in Support of Cooperative Wide
Area Search and Engagement (I), 3555

Decker, Doug	Air Force Inst. of Tech.
Jacques, David	Air Force Inst. of Tech.
Pachter, Meir	Air Force Inst. of Tech.

Team Dynamics and Tactics in Strategies for Human-Automaton
Resource Entity Deployment (I), 3561

Liu, Yong	Univ. of Pittsburgh
Galati, David	Univ. of Pittsburgh
Simaan, Marwan A.	Univ. of Pittsburgh

Cooperative Control for UAV's Searching Risky Environments for
Targets (I), 3567

Flint, Matthew	Univ. of Cincinnati
Fernandez-Gaucherand, Emmanuel	Univ. of Cincinnati
Polycarpou, Marios M.	Univ. of Cincinnati

Stability Analysis of Swarms in a Noisy Environment (I), 3573

Liu, Yanfei	The Ohio State Univ.
Passino, Kevin	Ohio State Univ.

Team Dynamics and Tactics for Mission Planning (I), 3579

Cruz, Jose	The Ohio State Univ.
Chen, Genshe	The Ohio State Univ.
Garagic, Denis	The Ohio State Univ.
Tan, Xiaohuan	The Ohio State Univ.
Li, Dongxu	The Ohio State Univ.
Shen, Dan	The Ohio State Univ.
Wei, Mo	The Ohio State Univ.
Wang, Xu	The Ohio State Univ.

Battle Management for Unmanned Aerial Vehicles (I), 3585

Xu, Lu	The Ohio State Univ.
Ozguner, Umit	The Ohio State Univ.

ThNPL	Monarchy Ballroom
Plenary Panel: CSS Presidents	**Plenary Panel**
Chair: Masten, Michael K.	Texas Inst. - Retired

ThM01	Monarchy Ballroom
Formation Control	**Regular Session**
Chair: Fierro, Rafael	Oklahoma State Univ.
Co-Chair: Sastry, Shankar	Univ. of California at Berkeley

14:00
Fuel Optimal Initialization of a Spacecraft Formation, 3591

Yang, Guang	Pol. Univ.
Kapila, Vikram	Pol. Univ.
Wong, Hong	Pol. Univ.

14:20
Adaptive Learning Control-Based Periodic Trajectory Tracking for
Spacecraft Formations, 3597

Wong, Hong	Pol. Univ.
Kapila, Vikram	Pol. Univ.

14:40
Formation Flying Control of a Pair of Nano-Satellites Based on
Switching Predictive Control, 3603

Mosca, Edoardo	Univ. of Florence
Casavola, Alessandro	Univ. Della Calabria
Bacconi, Fabio	Univ. di Firenze

15:00
Steering Laws and Continuum Models for Planar Formations, 3609

Justh, Eric	Univ. of Maryland
Krishnaprasad, P. S.	Univ. of Maryland

15:20
A Dual-Mode Model Predictive Controller for Robot Formations,
3615

Wesselowski, Kirk	Boston Univ.
Fierro, Rafael	Oklahoma State Univ.

15:40
Decentralized Nonlinear Model Predictive Control of Multiple Flying
Robots, 3621

Shim, David Hyunchul	ACAP LLC
Kim, H. Jin	Univ. of California at Berkeley
Sastry, Shankar	Univ. of California at Berkeley

ThM02	Regency A
Nonlinear Systems IV	**Regular Session**
Chair: Michalska, Hannah H.	McGill Univ.
Co-Chair: Perruquetti, Wilfrid	Ec. Centrale de Lille

14:00
Results on Converse Lyapunov Theorems for Difference
Inclusions, 3627

Kellett, Christopher	Univ. of Melbourne
Teel, Andrew R.	Univ. of California at Santa Barbara

14:20
Nonlinear Programming and the CBH Formula in Feedback
Stabilization of Nonlinear Systems with Drift, 3633

Michalska, Hannah H.	McGill Univ.
Torres-Torriti, Miguel	McGill Univ.

14:40
Gaussian Radial Basis Functions and the Approximation of Input-
Output Maps, 3635

Sandberg, Irwin W.	Univ. of Texas at Austin

15:00
Finite Time Stability of Non Linear Systems, 3641

moulay, Emmanuel	Ec. Centrale de Lille,
Perruquetti, Wilfrid	Ec. Centrale de Lille

15:20
Low Order Representation of Nonlinear Systems, 3647

Starkl, Reinhard	Johannes Kepler Univ.
Del Re, Luigi	Johannes Kepler Univ. Linz

15:40
Observability Quadratic Characteristic Numbers., 3653

Chabraoui, Samira	Ec.
Boutat, Driss	Ensi De Bourges
Boutat-baddas, Latifa	Ec.
Barbot, Jean Pierre	ENSEA

ThM03	Regency B
Stability of Communication Networks	**Regular Session**
Chair: Kim, Ki-Baek	INRIA-ENS
Co-Chair: Bauer, Peter H.	Notre Dame Univ.

14:00
Stability of Adaptive Congestion Controllers for High Bandwidth
Connections, 3659

Kunniyur, Srisankar	Univ. of Pennsylvania
Kavak, Egemen	Univ. of Pennsylvania

14:20
A Stabilizing AQM Based on Virtual Queue Dynamics in
Supporting TCP with Arbitrary Delays, 3665

Kim, Ki-Baek	INRIA-ENS
Tang, Ao	PhD Candidate
Low, Steven	California Inst. of Tech.

14:40
Global Stability with Time-Delay of a Primal-Dual Congestion
Control, 3671

Wang, Zhikui	Univ. of California, Los Angeles
Paganini, Fernando	Univ. of California, Los Angeles

15:00
Asymptotic Stability of Congestion Control Systems with Multiple
Sources, 3677

Sichitiu, Mihail L.	NC State Univ.
Bauer, Peter H.	Notre Dame Univ.

15:20
Lp Stability and Delay Robustness of Network Flow Control, 3683
Fan, Xingzhe	Rensselaer Pol. Inst.
Arcak, Murat	Rensselaer Pol. Inst.
Wen, John T.	Rensselaer Pol. Inst.

15:40
Communication Delay and Instability in Rate-Controlled Networks, 3689
Ranjan, Priya	Univ. of Maryland, Coll. Park
Abed, Eyad H.	Univ. of Maryland, Coll. Park
La, Richard J.	Univ. of Maryland, Coll. Park

ThM04	Regency C
Model Predictive Control	**Regular Session**
Chair: Wills, Adrian	Univ. of Newcastle
Co-Chair: Helmick, Daniel	Carnegie Mellon Univ.

14:00
SVD Based Receding Horizon Control for Constrained Linear Systems: Stability Results, 3695
Rojas, Osvaldo J.	The Univ. of Newcastle
Seron, Maria	The Univ. of Newcastle
Goodwin, Graham C.	Univ. of Newcastle

14:20
An Exterior/Interior-Point Approach to Infeasibility in Model Predictive Control, 3701
Wills, A. G.	Univ. of Newcastle
Heath, W. P.	Univ. of Newcastle

14:40
Robust MPC Control Based on a Contractive Sequence of Sets, 3706
Limon, Daniel	Univ. de Sevilla
Alamo, Teodoro	Univ. de Sevilla
Camacho, Eduardo F.	Univ. de Sevilla

15:00
Higher Order Modeling of Hysteresis in Disk Drive Actuators, 3712
Helmick, Daniel	Carnegie Mellon Univ.
Messner, William	Carnegie Mellon Univ.

15:20
Two-Dimensional Frequency Response Analysis and Insights for Weight Selection in Cross-Directional Model Predictive Control, 3717
Fan, Junqiang	Univ. of British Columbia
Stewart, Greg E.	Honeywell Industrial Control
Dumont, Guy A.	Univ. of British Columbia

15:40
Examples of Zero Robustness in Constrained Model Predictive Control, 3724
Grimm, Gene	Univ. of California, Santa Barbara
Messina, Michael J.	Univ. of California at Santa Barbara
Teel, Andrew R.	Univ. of California at Santa Barbara
Tuna, Sezai E.	Univ. of California, Santa Barbara

ThM05	Maui Suite 1
Petri Nets	**Regular Session**
Chair: Benveniste, Albert	IRISA-INRIA
Co-Chair: Sreenivas, Ramavarapu S.	Univ. of Illinois

14:00
On Partially Controlled Petri Nets That Can Be Made Live by Supervision, 3730
Sreenivas, Ramavarapu S.	Univ. of Illinois

14:20
Liveness Enforcing Supervision for Resource Allocation Systems with Process Synchronizations, 3735
Chew, Song Foh	Purdue Univ.
Lawley, Mark	Purdue Univ.
Reveliotis, Spyros	Georgia Inst. of Tech.

14:40
Distributed and Asynchronous Discrete Event Systems Diagnosis, 3742
Benveniste, Albert	IRISA-INRIA
Haar, Stefan	Inria
Fabre, Eric	IRISA / INRIA
Jard, Claude	CNRS

15:00
Partial Order Diagnosability of Discrete Event Systems Using Petri Net Unfoldings, 3748
Haar, Stefan	INRIA-IRISA
Benveniste, Albert	INRIA-IRISA
Fabre, Eric	INRIA-IRISA
Jard, Claude	CNRS-IRISA

15:20
Some Results on the Computation of Minimal Siphons in Petri Nets, 3754
Cordone, Roberto	Univ. degli Studi di Milano
Ferrarini, Luca	Pol. di Milano
Piroddi, Luigi	Pol. di Milano

15:40
Sensor Selection for Observability in Interpreted Petri Nets: A Genetic Approach, 3760
Aguirre-Salas, Luis	Cucsur Univ. De Guadalajara

ThM06	Maui Suite 2
Modeling and Adaptation	**Regular Session**
Chair: Khammash, Mustafa H.	Univ. of California at Santa Barbara
Co-Chair: de Callafon, Raymond A.	Univ. of California, San Diego

14:00
Model Validation and Robustness Analysis of the Bacterial Heat Shock Response Using SOSTOOLS, 3766
El-samad, Hana	Univ. of California at Santa Barbara
Prajna, Stephen	California Inst. of Tech.
Papachristodoulou, Antonis	California Inst. of Tech.
Khammash, Mustafa H.	Univ. of California at Santa Barbara
Doyle, John C.	California Inst. of Tech.

14:20
Coprime Factor Based Closed-Loop Model Validation Applied to a Flexible Structure, 3772
de Callafon, Raymond A.	Univ. of California, San Diego
Crowder, Marianne	Univ. of California, San Diego

14:40
Required Event Sequences for Identification of Discrete Event Systems, 3778
Meda-Campaña, Maria-Elena	CUCEA of Guadalajara Univ.
Lopez-Mellado, Luis-Ernesto	CINVESTAV-IPN

15:00
Adaptive Backstepping Control of Some Uncertain Nonlinear Oscillators, 3784
Ikhouane, Fayçal	Univ. Pol. de Catalunya
Manosa, Victor	Univ. Pol. de Catalunya
Rodellar, Jose	Univ. Pol. de Catalunya

15:20
Robust Flatness Based Control of an Electromagnetic Linear Actuator Using Adaptive PID Controller, 3790
Mercorelli, Paolo	IAI Inst. für Automatisierung und Informatik GmbH
Liu, Steven	Harz Univ. of Applied Studies and Res. (Hochschule Harz)
Lehmann, Kai	IAI Inst. für Automatisierung und Informatik GmbH

15:40
A New Superresolution Method in Antenna Array Signal Processing, 3796

BARABANOV, Nikita E.	North Dakota State Univ. ND, USA
Liss, Anna	St.-Petersburg Electrotechnical Univ.

ThM07 — Regency Boardroom
Optimization Algorithms — Regular Session

Chair: Campbell, Stephen L	North Carolina State Univ.
Co-Chair: Megretski, Alexandre	Massachusetts Inst. of Tech.

14:00
Initialization of Direct Transcription Optimal Control Software, 3802

Betts, John T.	Boeing Corp.
Campbell, Stephen L.	North Carolina State Univ.
Kalla, N. N.	North Carolina State Univ.

14:20
Stochastic Optimization with Inequality Constraints Using Simultaneous Perturbations and Penalty Functions, 3808

Wang, I-Jeng	Johns Hopkins Univ.
Spall, James C.	Johns Hopkins Univ.

14:40
Positivity of Trigonometric Polynomials, 3814

Megretski, Alexandre	Massachusetts Inst. of Tech.

15:00
An Asymptotically Efficient Algorithm for Finite Horizon Stochastic Dynamic Programming Problems, 3818

Chang, Hyeong Soo	Sogang Univ.
Fu, Michael C.	Univ. of Maryland
Marcus, Steven I.	Univ. of Maryland

15:20
Polynomial Complexity for a Nesterov-Todd Potential-Reduction Method with Inexact Search Directions, 3824

Gillberg, Jonas	Linköping Univ.
Hansson, Anders	Linkoping Univ.

15:40
Master-To-Slave Nonlinear Genetic Algorithm, 3830

Cui, Zhi-hua	Taiyuan Heavy Machinery Inst.

ThM08 — Maui Suite 3
Mechanical Systems II — Regular Session

Chair: Jiang, Zhong Ping	Pol. Univ.
Co-Chair: Kelly, Rafael	CICESE

14:00
Manipulator Velocity Field Control with Dynamic Friction Compensation, 3834

Moreno, Javier	CICESE
Kelly, Rafael	CICESE

14:20
Modeling of MR Damper with Hysteresis for Adaptive Vibration Control, 3840

Sakai, Chiharu	Keio Univ.
Ohmori, Hiromitsu	Keio Univ.
Sano, Akira	Keio Univ.

14:40
Nonlinear Control of a Parametrically-Excited System Subject to Actuator Saturation, 3846

Chen, Ley	Univ. of Adelaide
Hansen, Colin Henry	Univ. of Adelaide

15:00
Simultaneous Tracking and Stabilization of Mobile Robots without Velocity Measurements, 3852

Do, Duc	The Univ. of Western Australia
Jiang, Zhong Ping	Pol. Univ.
Pan, Jie	The Univ. of Western Australia

15:20
Position Tracking for a Nonlinear Underactuated Hovercraft: Controller Design and Experimental Results, 3858

Aguiar, Antonio Pedro	Univ. of California, Santa Barbara
Cremean, Lars B.	California Inst. of Tech.
Hespanha, Joao P.	Univ. of California, Santa Barbara

15:40
A Design of Servo Controller for Nonlinear Systems Using State Dependent Riccati Equation, 3864

Terashima, Satoru	Tokyo Denki Univ.
Iwase, Masami	Tokyo Denki Univ.
Furuta, Katsuhisa	Tokyo Denki Unversity
Hatakeyama, Shoshiro	Tokyo Denki Univ.
Suzuki, Satoshi	Tokyo Denki Univ.

ThM09 — Maui Suite 4
Power Systems — Regular Session

Chair: Tolbert, Leon	The Univ. of Tennessee
Co-Chair: Chen, Jian	Clemson Univ.

14:00
Robust Output Feedback Design with Application to Power Systems, 3870

Zanchin, Volnei T.	Univ. Federal do Rio Grande do Sul
Bazanella, Alexandre S.	Univ. Federal Do Rio Grande Do Sul

14:20
Nonlinear Controller for a Single Phase One Quadrant Unity Power Factor Rectifier, 3876

Jain, Amit	Univ. of Minnesota
Behal, A.	Clemson Univ.
Mohan, Ned	Univ. of Minnesota

14:40
Perspectives for the Coordinated Design of Damping Controllers in Restructured Power Systems, 3882

Ramos, Rodrigo A.	Univ. Estadual do Oeste do Paraná
Oliveira, Ricardo V.	Escola de Enegnharia de São Carlos/USP
Bretas, Newton G.	Escola de Engenharia de São Carlos / USP

15:00
Impact of Generator Stator Dynamics on a Nonlinear Observability Formulation for Power System Dynamics, 3888

Dafis, Chris	Drexel Univ.
Nwankpa, Chika O.	Drexel Univ.

15:20
Synchronous Motor VSS Control Using Recurrent High Order Neural Networks, 3894

Campos, Joaquin	-
Loukianov, Alexander G.	CINVESTAV
Sanchez, Edgar N.	CINVESTAV

15:40
Active Noise Control of One Dimensional Duct Via Sampled-Data Hinf Control, 3900

Kobayashi, Yasuhide	Nagaoka Univ. of Tech.
Fujioka, Hisaya	Kyoto Univ.

ThM10 — Guest Room 350
Constrained Control II — Regular Session

Chair: Kerrigan, Eric C.	Univ. of Cambridge
Co-Chair: Rakovic, Sasa V.	Imperial Coll. London

14:00
Reachability Computations for Constrained Discrete-Time Systems with State and Input Dependent Disturbances, 3905

Rakovic, Sasa V.	Imperial Coll. London
Kerrigan, Eric C.	Univ. of Cambridge
Mayne, David Q.	Imperial Coll. London

14:20
*Offset-Free Control of Constrained Linear Discrete-Time Systems
Subject to Persistent Unmeasured Disturbances, 3911*
> Pannocchia, Gabriele — Univ. of Pisa
> Kerrigan, Eric C. — Univ. of Cambridge

14:40
*Approximation of the Minimal Robustly Positively Invariant Set for
Discrete-Time LTI Systems with Persistent State Disturbances,
3917*
> Rakovic, Sasa V. — Imperial Coll. London
> Kerrigan, Eric C. — Univ. of Cambridge
> Kouramas, Konstantinos
> Mayne, David Q. — Imperial Coll. London

15:00
Coordinated Control and Information Architecture, 3919
> Bitmead, Robert — Univ. of California San Diego
> Yan, Jun — Univ. of California San Diego

15:20
*CLF-Based Tracking Control for UAV Kinematic Models with
Saturation Constraints, 3924*
> Ren, Wei — Brigham Young Univ.
> Beard, Randal W. — Brigham Young Univ.

15:40
*Set-Point Tracking for a Class of Constrained Nonlinear Systems
with Application to a CSTR, 3930*
> Chisci, Luigi — Univ. di Firenze
> Falugi, Paola — Univ. of Florence
> Zappa, Giovanni — Univ. Di Firenze

ThM11	Guest Room 351
Control Applications II	**Regular Session**
Chair: Mestha, Lalit K.	Xerox Corp.
Co-Chair: Mazenc, Frederic	Inria Lorraine,

14:00
*Application of Exploratory Modelling to Active Headrest Control,
3936*
> Veres, Sandor M — School of Engineering Sciences

14:20
*Adaptive Output Backstepping Control of a Flywheel Zero-Bias
AMB System with Parameter Uncertainity, 3942*
> Sivrioglu, Selim — Gebze Inst. of Tech.
> Nonami, Kenzo — Chiba Univ.

14:40
*Velocity Control of 2-Mass-Spring Systems with Large Load
Uncertainty -An Adaptive Backstepping Control Approach, 3948*
> Liu, Kang-Zhi — Chiba Univ.
> Namiki, Susumu — Chiba Univ.
> Ishii, Hidekazu — Chiba Univ.

15:00
Non-Linear Predictive Control of 2 Dof Helicopter Model, 3954
> Dutka, Arkadiusz S. — Univ. of Strathclyde
> Ordys, Andrzej W. — Univ. of Strathclyde
> Grimble, Michael John — Univ. of Strathclyde

15:20
*Forwarding Control of Scale Model Autonomous Helicopter: A
Lyapunov Control Design., 3960*
> Mazenc, Frederic — Inria Lorraine,
> Mahony, Robert — Monash Univ.
> Lozano, Rogelio — Univ. de Tech. de Compiegne

15:40
*Inverse Optimal Boundary Control for Mixing in
Magnetohydrodynamic Channel Flows, 3966*
> Schuster, Eugenio — Univ. of California San Diego
> (ucsd)
> Krstic, Miroslav — Univ. of California at San Diego

ThM12	Maui Suite 5
Identification Algorithms	**Regular Session**
Chair: Verhaegen, Michel	Univ. of Twente
Co-Chair: Zheng, Wei Xing	Univ. of Western Sydney

14:00
*A Kernel Method for Subspace Identification of Multivariable
Bilinear Systems, 3972*
> Verdult, Vincent — Delft Univ. of Tech.
> Verhaegen, Michel — Delft Univ. of Tech.

14:20
Nonlinear Model Validation Using Multiple Experiments, 3978
> Dunstan, Wayne — GE Global Res.
> Bitmead, Robert — Univ. of California San Diego

14:40
Long-Range Nonlinear Prediction: A Case Study, 3984
> Piroddi, Luigi — Pol. Di Milano
> Spinelli, William — Pol. di Milano

15:00
*Identification of Nonlinear Systems Described by Hammerstein
Models, 3990*
> Alonge, Francesco — Univ. of Palermo
> Dippolito, Filippo — Univ. of Palermo
> Raimondi, Francesco Maria — Univ. of Palermo
> Tumminaro, Salvatore — Univ. of Palermo

15:20
*Discrete-Time Nonlinear System Identification Using Recurrent
Neural Networks, 3996*
> Yu, Wen — CINVESTAV-IPN
> Li, Xiaoou — CINVESTAV-IPN

15:40
*A TSK-Type Fuzzy Neural Network (TFNN) Systems for Dynamic
Systems Identification, 4002*
> Lee, Ching-Hung — Yuan Ze Univ.
> Lai, Wei-Yu — Yuan Ze Univ.
> Lin, Yu-Ching — Yuan Ze Univ.

ThM13	Guest Room 450
Control of Time Delay Systems I	**Regular Session**
Chair: Chellaboina, VijaySekhar	Univ. of Missouri- Columbia
Co-Chair: Lozano, Rogelio	Univ. de Tech. de Compiegne

14:00
*On Monotonicity of Solutions of Nonnegative and Compartmental
Dynamical Systems with Time Delay, 4008*
> Chellaboina, VijaySekhar — Univ. of Missouri- Columbia
> Haddad, Wassim M. — Georgia Inst. of Tech.
> Ramakrishnan, Jayanthy — Univ. of Missouri, Columbia
> Bailey, James M. — Northeast Georgia Medical Center

14:20
*Robust Prediction-Based Control for Unstable Delay Systems,
4014*
> Lozano, Rogelio — Univ. de Tech. de Compiegne
> Garcia Gil, Pedro José — Univ. Pol. de Valencia
> Castillo, Pedro — Univ. De Tech. De Compiegne
> Dzul, Alejandro — Inst. Tecnológico de la Laguna

14:40
*Global Asymptotic Stabilization of Feedforward Systems with
Delay in the Input, 4020*
> Mazenc, Frederic — Inria Lorraine,
> Mondie, Sabine — CINVESTAV-IPN
> Francisco, Rogelio — CINVESTAV-IPN

15:00
*Output Feedback Control Synthesis for Linear Time-Delay
Systems Via Infinite-Dimensional LMI Approach, 4026*
> Azuma, Takehito — Kanazawa Univ.
> Sagara, Seiichi — Kanazawa Univ.
> Fujita, Masayuki — Kanazawa Univ.
> Uchida, Kenko — Waseda Univ.

15:20
On Delay-Dependent Robust H-Infinity Control of Uncertain Continuous and Discrete-Time Linear Systems with Lumped Delays, 4032

Palhares, Reinaldo M.	Federal Univ. of Minas Gerais
Campos, Claudio Dias	Pontifical Catholic Univ. of Minas Gerais
Leles, Michel C. R.	Federal Univ. of Minas Gerais
Ekel, Petr Ya.	Pontifical Catholic Univ. of Minas Gerais
d'angelo, Marcos F. S. V.	UNIMONTES

15:40
PID Stabilization of LTI Plants with Time-Delay, 4038

Xu, Hao	Texas A & M Univ.
Datta, Aniruddha	Texas A & M Univ.
Bhattacharyya, Shankar P.	Texas A & M Univ.

ThM14	Guest Room 451
Sliding Mode Control II	**Regular Session**
Chair: Parlangeli, Gianfranco	Univ. degli studi di Lecce
Co-Chair: Usai, Elio	Univ. degli Studi di Cagliari

14:00
A Fault Tolerant Control System for the Output Stabilization of SISO Plants with Actuator Uncertain Hysteresis Nonlinearities, 4044

Parlangeli, Gianfranco	Univ. di Lecce
Corradini, Maria Letizia	Univ. di Lecce

14:20
Sliding-Mode Control with Mild Information Demand for Relative-Degree 3 Systems, 4050

Usai, Elio	Univ. degli Studi di Cagliari
Bartolini, Giorgio	Univ. of Cagliari
Pisano, Alessandro	Univ. di Cagliari

14:40
Robust Integral Siliding Mode Regulator for Linear Systems with Multiple Time Delays in Control Input, 4056

Basin, Michael V.	Autonomous Univ. of Nuevo Leon
Rodriguez Gonzalez, Jesus	Autonomous Univ. of Nuevo Leon
Acosta Cano De Los Rios, Pedro Rafael	Inst. Tecnologico De Chihuahua
Fridman, Leonid M.	National Autonomous Univ. of Mexico

15:00
On a Second Order Discontinuous Control System with Delayed Input, 4062

Levaggi, Laura	Univ. of Genova
Punta, Elisabetta	ISSIA CNR National Res. Council of Italy

15:20
An LMI Approach to Persistent Bounded Disturbance Rejection for Uncertain Impulsive Systems, 4068

Hao, Fei	Peking Univ.
Chu, Tianguang	Peking Univ.
Wang, Long	Peking Univ.
Huang, Lin	Peking Univ.

15:40
Semiglobal Stabilization Via Relay Controller with Uncertain Time Delay, 4074

Fridman, Leonid M.	National Autonomous Univ. of Mexico
Strygin, Vadim	-
Polyakov, Andrei	-

ThMPI	Grand Promenade
Control Applications	**Poster/Interactive Paper Session**
Chair: Rotea, Mario	Purdue Univ.

14:00
A Unified Approach to Design the RZN PID Controller for Stable and Unstable Processes with Time-Delay, 4080

Zhang, Weidong	Shanghai Jiaotong Univ.

Study on the Relationships between Two Typical Modeling Methods in Process Control.doc, 4082

Gu, Danying	Shanghai Jiaotong Univ.
liu, tao	Shanghai Jiaotong Univ.
Zhang, Weidong	Shanghai Jiaotong Univ.

Control of Heart Assist Devices, 4084

Antaki, James F.	Carnegie Mellon Univ.
Boston, J.Robert	Univ. of Pittsburgh
Simaan, Marwan A.	Univ. of Pittsburgh

Robust Control of Master-Slave Manipulator Systems in Consideration of Actuator Dynamics and Uncertainty for Objects and Operator, 4090

Ishii, Chiharu	Kogakuin Univ.
Hashimoto, Hiroshi	Tokyo Univ. of Tech.
Hernandez, Ricardo	Inst. Tecnologico de Aguascalientes

Control Elements in Production Printing and Publishing Systems: DocuColor Igen3, 4096

Mestha, Lalit K.	Xerox Corp.
Enzien, Mark	Xerox Corp.
Duke, Charles	Xerox Corp.
Platteter, Dale	Xerox Corp.
Bolte, Steve	Xerox Corp.
Lanphere, John	Xerox Corp.
Viassolo, Daniel	General Electric
Mihalyov, Kenneth	Xerox Corp.
Scarlata, Rick	Xerox Corp.
Purvis, Lisa	Xerox Corp.
Mara, Bob	Xerox Corp.
Thompson, David	Xerox Corp.

Robust Estimation Algorithm for Spectral Neugebauer Models, 4109

Rotea, Mario	Purdue Univ.
Lana, Carlos	Purdue Univ.
Viassolo, Daniel	GE

A Lean Document Production Controller for Printshop Management, 4115

Rai, Sudhendu	Xerox Corp.
Viassolo, Daniel E.	General Electric

ThP01	Monarchy Ballroom
Cooperative and Noncooperative Systems under Constrained Information	**Invited Session**
Chair: Shamma, Jeff S.	Univ. of California Los Angeles
Co-Chair: D'Andrea, Raffaello	Cornell Univ.
Organizer: Shamma, Jeff S.	Univ. of California Los Angeles
Organizer: Dahleh, Munther A.	Massachusetts Inst. of Tech.

16:20
Agreement Problems in Networks with Directed Graphs and Switching Topology (I), 4126

Olfati-Saber, Reza	California Inst. of Tech.
Murray, Richard M.	California Inst. of Tech.

16:40
A Computation and Control Language for Multi-Vehicle Systems (I), 4133

Klavins, Eric	Univ. of Washington

17:00

A Feedback Stabilization Approach to Fictitious Play (I), 4140

Shamma, Jeff S.	Univ. of California Los Angeles
Arslan, Gurdal	Univ. of California at Los Angeles

17:20

Linear-Quadratic-Gaussian Differential Games with Different Information Patterns (I), 4146

Speyer, Jason L.	Univ. of California at Los Angeles
Swarup, Ashitosh	Univ. of California at Los Angeles

17:40

An Information Theoretic Approach to the Mode Estimation of Switching FIR Linear Systems (I), 4152

Martins, Nuno C.	Massachusetts Inst. of Tech.
Dahleh, Munther A.	Massachusetts Inst. of Tech.

18:00

Using Airborne Vehicle-Based Antenna Arrays to Improve Communications with UAV Clusters (I), 4158

Breheny, Sean	Cornell Univ.
D'Andrea, Raffaello	Cornell Univ.
Miller, Jeremy	Cornell Univ.

ThP02	**Regency A**
Nonlinear Systems Stability Theory and Applications	**Regular Session**
Chair: Sepulchre, Rodolphe J.	Univ. de Liege
Co-Chair: Calafiore, Giuseppe	Pol. di Torino

16:20

Design of Nonlinear Controls Using Structured Representations, 4163

Medanic, Juraj	Univ. of Illinois at Urbana-Champaign

16:40

Dissipativity Characterization of a Class of Oscillators and Networks of Oscillators, 4169

STAN, Guy-Bart V.	Univ. de Liege
SEPULCHRE, Rodolphe J.	Univ. de Liege

17:00

Control of Heisenberg Spin Systems; Lie Algebraic Decompositions and Action-Angle Variables, 4174

Vaidya, Umesh	Univ. of California Santa Barbara
D'Alessandro, Domenico	Iowa State Univ.
Mezic, Igor	Univ. of California, Santa Barbara

17:20

Orthotopic and Ellipsoidal Simulations for a Class of Non-Linear Systems, 4179

Calafiore, Giuseppe	Pol. di Torino

17:40

Quantum Feedback Control of Coherent Oscillations in a Solid-State Qubit, 4185

Ruskov, Rusko	Univ. of California, Riverside
Zhang, Qin	Graduate student, UC Riverside
Korotkov, Alexander	Univ. of California, Riverside

18:00

Lagrangian Optimization, Quantum Mechanics and Quantum Control, 4191

Lyshevski, Marina	Res.

ThP03	**Regency B**
Control of Communication Systems	**Regular Session**
Chair: Voulgaris, Petros G.	Univ. of Illinois at Urbana-Champaign
Co-Chair: Jayasuriya, Suhada	Texas A&M Univ.

16:20

A Perfect Reconstruction Paradigm for Digital Communication, 4196

Voulgaris, Petros G.	Univ. of Illinois at Urbana-Champaign
Hadjicostis, Christoforos	Univ. of Illinois at Urbana-Champaign
Touri, Rouzbeh	Univ. of Illinois at Urbana-champaign

16:40

Power Control and Rate Adaptation As Stochastic Games for Random Access, 4202

Sagduyu, Yalin Evren	Univ. of Maryland at Coll. Park
Ephremides, Anthony	Univ. of Maryland at Coll. Park

17:00

Attaining High Operating Bandwidth Using Sensor Arrays and Frequency Domain Methods, 4208

Suranthiran, Sugathevan	Texas A&M Univ.
Jayasuriya, Suhada	Texas A&M Univ.

17:20

A New Class of Soft MIMO Demodulation Algorithms Based on Sequential Monte Carlo, 4214

Wang, Xiaodong	Columbia Univ.

17:40

On the Design of AQM Supporting TCP Flows Using Robust Control Theory, 4220

Quet, Pierre-Francois	Ohio State Univ.
Ozbay, Hitay	Ohio State Univ.

18:00

Modified Distributed Constrained Power Control Using Reference Model in CDMA Cellular Systems, 4225

Lee, Mooyoung	Doowon Tech. Coll.
Oh, Do Chang	Konyang Univ.
Kwon, Woohyen	Kyungpook National Univ.

ThP04	**Regency C**
Optimization of Stochastic Systems	**Regular Session**
Chair: Guay, Martin	Queen's Univ.
Co-Chair: Malhame, Roland P.	Ec. Pol. de Montreal

16:20

Stochastic Power Control in Wireless Communication Systems: Analysis, Approximate Control Algorithms and State Aggregation, 4231

Huang, Minyi	Mcgill Univ.
Malhame, Roland P.	Ec. Pol. de Montreal
Caines, Peter E.	McGill Univ.

16:40

Kullback-Leibler Approximation of Spectral Density Functions, 4237

Georgiou, Tryphon T.	Univ. of Minnesota
Lindquist, Anders G.	Royal Inst. of Tech.

17:00

Control Design for Discrete-Time Stochastic Nonlinear Processes with a Nonquadratic Performance Objective, 4243

Forbes, Michael Gregory	Univ. of Alberta
Forbes, J. Fraser	Univ. of Alberta
Guay, Martin	Queen's Univ.

17:20

Optimization of Stochastic Uncertain Systems: Large Deviations and Robustness, 4249

Charalambous, Charalambos D.	Univ. of Ottawa
Rezaei, Farzad	PhD Student

17:40

Optimal Output Probability Density Function Control for Nonlinear ARMAX Stochastic Systems, 4254

Guo, Lei	UMIST
Wang, Hong	UMIST

18:00
Characterization of the Optimal Disturbance Attenuation for Nonlinear Stochastic Uncertain Systems, 4260
    Charalambous, Charalambos D.   Univ. of Ottawa
    Rezaei, Farzad   Univ. of Ottawa
    Djouadi, Seddik   Univ. of Arkansas at Little Rock

ThP05	Maui Suite 1
Stability of Nonlinear Switched Systems	**Regular Session**
Chair: Johansson, Karl Henrik	Royal Inst. of Tech.
Co-Chair: Orlov, Yuri V.	CICESE

16:20
Piecewise Polynomial Lyapunov Functions for a Class of Switched Nonlinear Systems, 4265
    Coutinho, Daniel Ferreira   Pontificia Univ. Catolica do Rio Grande do Sul
    Trofino, Alexandre   Federal Univ. of Santa Catarina

16:40
Finite Time Stability of Homogeneous Switched Systems, 4271
    Orlov, Yuri V.   CICESE

17:00
Switching Control for Multi-Input Cascade Nonlinear Systems, 4277
    Cronin, Brian   Univ. of Illinois at Urbana-Champaign
    Spong, Mark W.   Univ. of Illinois at Urbana-Champaign

17:20
Stability of Planar Nonlinear Switched Systems, 4283
    Boscain, Ugo V.   SISSA-ISAS
    charlot, gregoire   SISSA-ISAS

17:40
Effects of Dither Shapes in Nonsmooth Feedback Systems: Experimental Results and Theoretical Insight, 4285
    Iannelli, Luigi   Univ. of Napoli Federico II
    Johansson, Karl Henrik   Royal Inst. of Tech.
    Jonsson, Ulf T.   Royal Inst. of Tech.
    Vasca, Francesco   Univ. of Sannio

18:00
A Sliding Mode Controller for Actuator Failure Compensation., 4291
    Corradini, Maria Letizia   Univ. di Lecce
    Orlando, Giuseppe   Univ. di Ancona

ThP06	Maui Suite 2
Robust Adaptive Control	**Regular Session**
Chair: Anderson, Brian D.O.	Australian National Univ.
Co-Chair: Selmic, Rastko R.	Louisiana Tech. Univ.

16:20
Safe Adaptive Controller Changes Based on Reference Model Adjustments, 4297
    Lecchini, Andrea   Univ. of Cambridge
    Lanzon, Alexander   The Australian National Univ.
    Anderson, Brian D.O.   The Australian National Univ.

16:40
Robust Adaptive Tracking Control for Time-Varying Nonlinear Systems with Higher Order Relative Degree, 4303
    Mizumoto, Ikuro   Kumamoto Univ.
    Michino, Ryuji   Kumamoto Univ.
    Tao, Yuichi   Kumamoto Univ.
    Iwai, Zenta   Kumamoto Univ.

17:00
Adaptive Robust Dynamic Surface Control for a Magnetic Levitation System, 4309
    Yang, Zi-jiang   Kyushu Univ.
    Miyazaki, Kouichi   Kyushu Univ.
    Kanae, Shunshoku   Kyushu Univ.
    Wada, Kiyoshi   Kyushu Univ.

17:20
Theoretic Modeling and Adaptive Control for Two Degree-Of Freedom Piezo-Electric Actuated Chatter Suppression Systems, 4315
    Wang, Jian   Concordia Univ.
    Su, Chun-Yi   Concordia Univ.
    Oya, Masahiro   Kyushu Inst. of Tech.

17:40
Adaptive Control for Tracking and Disturbance Attenuation for SISO Linear Systems with Repeated Noisy Measurements, 4321
    Chen, Yu   Univ. of Cincinnati
    Pan, Zigang   Univ. of Cincinnati

18:00
Intelligent Compensation of Actuator Nonlinearities, 4327
    Selmic, Rastko R.   Louisiana Tech. Univ.
    Phoha, Vir V.   Louisiana Tech. Univ.
    Lewis, Frank L.   Univ. of Texas at Arlington

ThP07	Regency Boardroom
Optimization Methods and Algorithms	**Regular Session**
Chair: Feinberg, Eugene A.	SUNY at Stony Brook
Co-Chair: Menemenlis, Nickie	I.R.E.Q.

16:20
Online Scheduling: Generalized Pinwheel Problem, 4333
    Feinberg, Eugene A.   SUNY at Stony Brook
    Curry, Michael   SUNY Stony brook

16:40
Maximum Point-To-Point Power Transfer Using Second Order Approximation, 4339
    Huneault, Maurice   I.R.E.Q.
    Menemenlis, Nickie   I.R.E.Q.

17:00
Peer-To-Peer Refuelling within a Satellite Constellation, Part I: Zero-Cost Rendezvous Case, 4345
    Shen, Haijun   Georgia Inst. of Tech.
    Tsiotras, Panagiotis   Georgia Inst. of Tech.

17:20
Balancing of High-Speed Rotating Machinery Using Convex Optimization, 4351
    Li, Guoxin   Univ. of Virginia
    Lin, Zongli   Univ. of Virginia
    Untaroiu, Costin   Univ. of Virginia
    Allaire, Paul   Univ. of Virginia

17:40
Probability Model for an Adaptive Random Search Algorithm, 4357
    Kumar, Rajeeva   Univ. of Michigan
    Hyland, David C.   The Univ. of Michigan
    Kabamba, Pierre T.   Univ. of Michigan

18:00
Peer-To-Peer Refuelling within a Satellite Constellation, Part II: Nonzero-Cost Rendezvous Case, 4363
    Shen, Haijun   Georgia Inst. of Tech.
    Tsiotras, Panagiotis   Georgia Inst. of Tech.

ThP08	Maui Suite 3
Mechanical Systems III	**Regular Session**
Chair: Bloch, Anthony M.	Univ. of Michigan
Co-Chair: Nijmeijer, Hendrik	Eindhoven Univ. of Tech.

16:20
Controllability and Motion Planning of Multibody Systems with Nonholonomic Constraints, 4369
    Shen, Jinglai   Univ. of Michigan
    Schneider, David A.   Univ. of Michigan
    Bloch, Anthony M.   Univ. of Michigan

16:40
Asymptotic Stability in Flexible-Joint Robots with Multiple Time Delays, 4375
    Ailon, Amit   Ben Gurion Univ. of The Negev

17:00
Controlled Synchronization of Pendula, 4381
    Pogromsky, Alexander   Eindhoven Univ. of Tech.
    Belykh, Vladimir   Volga State transport Acad.
    Nijmeijer, Hendrik   Eindhoven Univ. of Tech.

17:20
Optimal Control of Hamiltonian Systems with Input Constraints Via
Iterative Learning, 4387
    Fujimoto, Kenji   Kyoto Univ.
    Horiuchi, Tetsu   Kyoto Univ.
    Sugie, Toshiharu   Kyoto Univ.

17:40
Global Stabilization of the Cart-Pendulum System Using Saturation
Functions, 4393
    Fantoni, Isabelle   Univ. de Tech. de Compiegne
    Lozano, Rogelio   Univ. de Tech. de Compiegne

18:00
Classical Dual-Inverted-Pendulum Control, 4399
    Lundberg, Kent   MIT
    Roberge, James   MIT

ThP09	**Maui Suite 4**
Learning in Control	**Regular Session**

    Chair: Gevers, Michel   Univ. Catholique de Louvain
    Co-Chair: Chen, YangQuan   Utah State Univ.

16:20
Constructing Performance Sensitivities of Markov Systems with
Potentials As Building Blocks (I), 4405
    Cao, Xi-Ren   Hong Kong Univ. of Sci. & Tech.

16:40
Learning for Repeated Constrained Games in Counter-Coalition
Space, 4410
    Poznyak, Alexander S.   CINVESTAV-IPN
    Godoy-alcantar, Martin   CINVESTAV-IPN
    Gomez-ramirez, Eduardo   La Salle Univ.

17:00
Iterative Learning Control with Iteration-Domain Adaptive
Feedforward Compensation, 4416
    Chen, YangQuan   Utah State Univ.
    Moore, Kevin L.   Utah State Univ.

17:20
Optimization of the Prefilter in Iterative Feedback Tuning for
Improved Accuracy of the Controller Parameter Update, 4422
    Hildebrand, Roland   Univ. Catholique de Louvain
    Lecchini, Andrea   Univ. of Cambridge
    SOLARI, Gabriel Elías   Phd. Student
    Gevers, Michel   Univ. Catholique de Louvain

17:40
Iterative Learning Control of Robotic Manipulators by Hybrid
Adaptation Schemes, 4428
    Miyasato, Yoshihiko   Inst. of Statistical Mathematics

18:00
Analysis and Design of Anticipatory Learning Control, 4434
    Wang, Danwei   Nanyang Tech. Univ.
    Ye, Yongqiang   Nanyang Tech. Univ.
    Cheah, Chien Chern   Nanyang Tech. Univ.

ThP10	**Guest Room 350**
Constrained Nonlinear Systems	**Regular Session**

    Chair: Chitour, Yacine   Lab. D'analyse Numerique
    Co-Chair: Angeli, David   Univ. of Firenze

16:20
Further Results on Global Stabilization for Multiple Integrators with
Bounded Controls, 4440
    Marchand, Nicolas   LAG-CNRS

16:40
New Results on Robust Stabilization Via Saturated Feedback,
4445
    Angeli, David   Univ. of Firenze
    Chitour, Yacine   Lab. D'analyse Numerique
    Marconi, Lorenzo   Univ. di Bologna

17:00
Anti-Windup Design with Guarateed Regions of Stability: An LMI-
Based Approach, 4451
    Gomes Da Silva Jr., Joao   Univ. Federal do Rio Grande do
    Manoel   Sul (UFRGS)
    Tarbouriech, Sophie   LAAS-CNRS

17:20
Continuous-Time Anti-Windup Generalized Predictive Control of
Non-Minimum Phase Processes with Input Constraints, 4457
    Deng, Mingcong   Okayama Univ.
    Inoue, Akira   Okayama Univ.
    Yanou, Akira   Kinki Univ.
    Hirashima, Yoichi   Okayama Univ.

17:40
Stabilization of a Class of Time Varying Systems with Control
Saturations and Measurement Noise with Application to
Nonholonomic Systems, 4463
    Battilotti, Stefano   Univ. La Sapienza

18:00
Composite Nonlinear Control with State and Measurement
Feedback for General Multivariable Systems with Input Saturation,
4469
    He, Yingjie   National Univ. of Singapore
    Chen, Ben M.   National Univ. of Singapore
    Wu, Chao   National Univ. of Singapore

ThP11	**Guest Room 351**
Control Applications III	**Regular Session**

    Chair: Mestha, Lalit K.   Xerox Corp.
    Co-Chair: Viassolo, Daniel   General Electric

16:20
Nonlinear and Adaptive Control of Buck Power Converters, 4475
    Giri, Fouad   GREYC
    El Fadil, Hassan   EMI
    Chaoui, Fatima-Zahra   EMI
    Haloua, Mohamed   EMI
    Ouadii, Hamid   GREYC

16:40
Global Voltage and Speed Control of Large Power Systems, 4481
    okou, Francis A.   Ec. de Tech. superieure
    Akhrif, Ouassima   Ec. de Tech. superieure
    Dessaint, Louis A.   Ec. de Tech. superieure

17:00
Control Strategy Using Vision for the Stabilization of an
Experimental PVTOL Aircraft Setup, 4487
    Palomino, Amparo   Univ. de Tech. de Compičgne
    Castillo, Pedro   Univ. De Tech. De Compiegne
    Fantoni, Isabelle   Univ. de Tech. de Compiegne
    Lozano, Rogelio   Univ. de Tech. de Compiegne
    Pegard, Claude   UPJV

17:20
Development of a Three-Axis Active Vibration Isolation System
Using Zero-Power Magnetic Suspension, 4493
    Mizuno, Takeshi   Saitama Univ.
    Takasaki, Masaya   Saitama Univ.
    Suzuki, Hirohisa   Saitama Univ.
    Ishino, Yuji   Saitama Univ.

17:40
Robust Regulation for a Magnetic Levitation System, 4499
    Bonivento, Claudio   Univ. of Bologna
    Gentili, Luca   Univ. of Bologna
    Marconi, Lorenzo   Univ. di Bologna
    Naldi, Roberto   Univ. of Bologna

18:00
Control of a Positioning System with Structural Flexibility Using Piezolelectric Transducers, 4505

Moallem, Mehrdad	Univ. of Western Ontario
Kermani, Mehrdad R	Univ. of Western Ontario (PhD Candidate)
Patel, Rajni	Univ. of Western Ontario
Ostojic, Mile	National Res. Council of Canada

ThP12	Maui Suite 5
Identification and Estimation	**Regular Session**
Chair: Blomqvist, Anders	Royal Inst. of Tech.
Co-Chair: Denis, Nikolaos	Lockheed Martin

16:20
Computation of Bounded Degree Nevanlinna-Pick Interpolants by Solving Nonlinear Equations, 4511

Blomqvist, Anders	Royal Inst. of Tech.
Fanizza, Giovanna	Royal Inst. of Tech.
Nagamune, Ryozo	Royal Inst. of Tech.

16:40
Feature Extraction Using Wavelet Packets Strategy, 4517

JIANG, HAI	PH.D Candidate
Er, Meng Joo	NTU
Gao, Yang	NTU

17:00
Estimation of Backlash with Application to Automotive Powertrains, 4521

Lagerberg, Adam	Jonkoping Univ.
Egardt, Bo S.	Chalmers Univ. of Tech.

17:20
A Geometric Proof for Subspace Tracking Theorems, 4527

Luo, Dapeng	Univ. of Central Florida
Leonessa, Alexander	Univ. of Central Florida

17:40
Spatio-Temporal Pattern Detection Using Dynamic Bayesian Networks, 4533

Denis, Nikolaos	Lockheed Martin

18:00
Application of BELS Based Methods in Direct Identification of Linear Systems from Closed Loop Data, 4539

Zheng, Wei Xing	Univ. of Western Sydney

ThP13	Guest Room 450
Control of Time Delay Systems II	**Regular Session**
Chair: Jankovic, Mrdjan	Ford Res. Lab.
Co-Chair: Bliman, Pierre-Alexandre J	INRIA-Rocquencourt

16:20
Control of Nonlinear Systems with Time Delay, 4545

Jankovic, Mrdjan	Ford Res. Lab.

16:40
Backstepping Design for Time-Delay Nonlinear Systems, 4551

Mazenc, Frederic	Inria Lorraine,
Bliman, Pierre-Alexandre J	INRIA-Rocquencourt

17:00
Feedback Linearization of Nonlinear Time-Delay Systems, 4557

Marquez, Luis	CICESE Res. Center
Moog, Claude	CNRS

17:20
Illposedness of Optimal Control Problems by Perturbation of Time Delay*

Matveev, Alexey S.	St.Petersburg Univ.

17:40
A Haptic Interface Design for Minimally Invasive Telesurgical Training and Collaboration in the Presence of Time Delay, 4563

Nudehi, Shahin	Michigan State Univ.
Mukherjee, Ranjan	Michigan State Univ.
Ghodoussi, Moji	Computer Motion

18:00
A Safe Implementation for Finite Spectrum Assignment: Robustness Analysis, 4569

Mondie, Sabine	CINVESTAV-IPN
Michiels, Wim	K.U. Leuven

ThP14	Guest Room 451
Advances in High Order Sliding Modes	**Invited Session**
Chair: Shtessel, Yuri B.	Univ. of Alabama at Huntsville
Co-Chair: Levant, Arie	Tel - Aviv Univ.
Organizer: Shtessel, Yuri B.	Univ. of Alabama at Huntsville
Organizer: Levant, Arie	Tel - Aviv Univ.
Organizer: Fridman, Leonid M.	National Autonomous Univ. of Mexico

16:20
Analysis of Second Order Sliding Mode Algorithms in the Frequency Domain (I), 4575

Boiko, Igor	SNC-Lavalin
CASTELLANOS GARCIA, MANUEL IVAN	National Autonomous Univ. of Mexico
Fridman, Leonid M.	National Autonomous Univ. of Mexico

16:40
Second Order Sliding Mode Control of Switched Delayed Systems (I), 4581

Sira-Ramirez, Hebertt J.	CINVESTAV-IPN

17:00
Integrated Guidance and Control of Advanced Interceptors Using Second Order Sliding Modes (I), 4587

Shtessel, Yuri B.	Univ. of Alabama at Huntsville
Shkolnikov, Ilya	Z/I Imaging Corp.

17:20
Decoupling Force and Position Control in Constrained Motion with Friction (I), 4593

Bartolini, Giorgio	Univ. of Cagliari
Punta, Elisabetta	ISSIA CNR - National Res. Council of Italy

17:40
Finite Time Stabilization of Interconnected Second Order Nonlinear Systems (I), 4599

Perruquetti, Wilfrid	LAIL UMR 8021CNRS
Floquet, Thierry	LAIL UMR 8021CNRS
Orlov, Yuri V.	CICESE

18:00
Quasi-Continuous High-Order Sliding-Mode Controllers (I), 4605

Levant, Arie	Tel - Aviv Univ.

ThPPI	Grand Promenade
Advances in Plasma Control in Tokamaks	**Invited Poster/Interactive Session**
Chair: Pironti, Alfredo	Univ. degli Studi di Napoli Federico II
Co-Chair: Ariola, Marco	Univ. degli Studi di Napoli Federico II
Organizer: Pironti, Alfredo	Univ. degli Studi di Napoli Federico II

16:20
Controlling Extremely Shaped Plasmas in the JET Tokamak (I), 4611

Ariola, Marco	Univ. degli Studi di Napoli Federico II
De Tommasi, Gianmaria	Univ. degli Studi di Napoli Federico II
Pironti, Alfredo	Univ. degli Studi di Napoli Federico II
Sartori, Filippo	Euratom/UKAEA Fusion Association

Improving the Region of Attraction of ITER in the Presence of
Actuator Saturation (I), 4616

Favez, Jean-yves — EPFL
Mullhaupt, Philippe — Ec. Pol. Fed. de Lausanne
Srinivasan, B. — Res. Associate
Lister, Jonathan B. — CRPP-EPFL
Bonvin, Dominique — EPFL

Boundary Reconstruction and Geometric Parameterisation for
Plasma Shape Control (I), 4622

Beghi, Alessandro — Univ. of Padova
Cenedese, Angelo — DIE-Univ. of Padova; ENEA-Consorzio RFX

Plasma Position and Current Control Management at JET (I),
4628

Sartori, Filippo — Euratom/UKAEA Fusion Association
Cenedese, Angelo — DIE-Univ. of Padova; ENEA-Consorzio RFX

Antiwindup Scheme for Plasma Shape Control with Rate and
Magnitude Actuation Constraints in the DIII-D Tokamak (I), 4634

Schuster, Eugenio — Univ. of California San Diego (ucsd)
Walker, Michael L. — General Atomics
Krstic, Miroslav — Univ. of California at San Diego
Humphreys, D.A. — General Atomics

Plasma Boundary Control in Tokamaks (I), 4640

Portone, Alfredo — EURATOM
Albert, Des — Hewlett-Packard

FrA01 — Monarchy Ballroom
Positive Polynomials in Control — Invited Session

Chair: Garulli, Andrea — Univ. di Siena
Co-Chair: Henrion, Didier — LAAS-CNRS
Organizer: Garulli, Andrea — Univ. di Siena
Organizer: Henrion, Didier — LAAS-CNRS

08:40
LMI Optimization for Fixed-Order H-Infinity Controller Design (I),
4646

Henrion, Didier — LAAS-CNRS

09:00
Higher-Order Relaxations for Robust LMI Problems with
Verifications for Exactness (I), 4652

Scherer, Carsten W. — Delft Univ. of Tech.

09:20
On the Implementation of Primal-Dual Interior-Point Methods for
Semidefinite Programming Problems Derived from the KYP
Lemma. (I), 4658

Vandenberghe, Lieven — Univ. of California Los Angeles
Balakrishnan, Venkataramanan — Purdue Univ.
Wallin, Ragnar — Linkoping Univ.
Hansson, Anders — Linkoping Univ.

09:40
Exploiting Structure in Sum of Squares Programs (I), 4664

Parrilo, Pablo A. — ETH Zurich

10:00
Robust Stability of Polytopic Systems Via Polynomially Parameter-
Dependent Lyapunov Functions (I), 4670

Chesi, Graziano — Univ. Di Siena
Garulli, Andrea — Univ. di Siena
Tesi, Alberto — Univ. di Firenze
Vicino, Antonio — Univ. di Siena

10:20
Some Controls Applications of Sum of Squares Programming (I),
4676

Jarvis-Wloszek, Zachary — Univ. of California at Berkeley
Feeley, Ryan — Univ. of California at Berkeley
Tan, Weehong — Univ. of California at Berkeley
Sun, Kunpeng — Univ. of California at Berkeley
Packard, Andrew K. — Univ. of California at Berkeley

FrA02 — Regency A
Nonlinear Systems V — Regular Session

Chair: Di Bernardo, Mario — Univ. of Sannio
Co-Chair: Shiriaev, Anton — Odense Univ.

08:40
Sufficient Conditions for Dynamical Output Feedback Stabilization
Via the Circle Criterion, 4682

Shiriaev, Anton — Odense Univ.
Johansson, Rolf — Lund Univ.
Robertsson, Anders — Lund Univ.

09:00
Analysis of the Energy Based Control for Swinging up Two
Pendulums, 4688

Xin, Xin — Okayama Prefectural Univ.
Kaneda, Masahiro — Okayama Prefectural Univ.

09:20
Coprime Factorisation and Gap Metric for Nonlinear Systems,
4694

Bian, Wenming — Univ. of Southampton
French, Mark — Univ. of Southampton

09:40
Practical and Asymptotic Stabilization of the 3-D Chained System
by the Transverse Function Approach, 4700

Morin, Pascal — INRIA
Samson, Claude — INRIA Sophia-Antipolis

10:00
A Factorization Approach to C^1 Stabilization of Nonlinear
Triangular Systems, 4705

Dacic, Dragan — Univ. of California Santa Barbara
Goebel, Rafal — Univ. of California
Kokotovic, Petar V. — Univ. of California at Santa Barbara

10:20
Analysis of Linear Systems in the Presence of Actuator Saturation
and L2 Disturbances, 4711

Fang, Haijun — Univ. of Virginia
Lin, Zongli — Univ. of Virginia
Hu, Tingshu — Univ. of Virginia

FrA03 — Regency B
Fuzzy Systems I — Regular Session

Chair: Tanaka, Kazuo — Univ. of Electro-Communications
Co-Chair: Feng, Gang — City Univ. of Hong Kong

08:40
Stable Controller Design for the T-S Fuzzy Model of a Flexible-
Joint Robot Arm Based on Lie Algebra, 4717

Gurkan, Evren — Middle East Tech. Univ.
Banks, Stephen Paul — Univ. of Sheffield
Erkmen, Ismet — Middle East Tech. Univ.

09:00
Study of Two Step Design Methodology of Near Optimal Fuzzy
Logic Controller, 4723

Osmic, Jakub — Univ. Clinical Center
Prljaca, Naser — Faculty of Electrical Engineering

09:20
A T-S Type of Rough Fuzzy Controller Based on Process Input-
Output Data, 4729

Huang, Jinjie — Harbin Inst. of Tech.
LI, shiyong — Harbin Inst. of Tech.
Man, chuntao — Harbin Univ. of Science and Tech.

09:40
Piecewise Nonlinear Control, 4735

Ohtake, Hiroshi	Univ. of Electro-Communications
Tanaka, Kazuo	Univ. of Electro-communications
Wang, Hua O.	Boston Univ.

10:00
Piecewise Output Feedback Controller Synthesis of Discrete Time Fuzzy Systems, 4741

Wang, Louis	Univ. of New South Wales
Feng, Gang	City Univ. of Hong Kong
Hesketh, Timothy	Univ. of New South Wales

10:20
Apply Fuzzy Regression to Model Functional Relationships in Product Planning, 4747

Chen, Yizeng	Northeastern Univ.
Tang, Jiafu	Northeastern Univ.

FrA04	**Regency C**
Process Control	**Regular Session**
Chair: Guay, Martin	Queen's Univ.
Co-Chair: Peng, Hui	The Inst. of Statistical Mathematics

08:40
Adpative Extremum Seeking Control of Nonisothermal Constinuous Stirred Tank Reactors with Temperature Constraints, 4753

Guay, Martin	Queen's Univ.
Dochain, Denis	Univ. Catholique de Louvain
Perrier, Michel	Ec. Pol.

09:00
End-Point Optimization of Batch Chemical Processes, 4759

Palanki, Srinivas	Florida State Univ.
Vemuri, Jyothy	Florida State Univ.

09:20
Composition Control of Binary Mixtures in STEC Plant by a Model Free Control Method*

Zhao, Zhong	Saga Univ.
Nakamura, Masatoshi	Saga Univ.
Ikegami, Y.	Saga Univ.

09:40
Hybrid Modelling and Monitoring of Streptomycin Fermentation Process, 4765

Jin, Xiaoming	Zhejiang Univ.
Wang, Shuqing	Zhejiang Univ.

10:00
Modeling and Control of Nonlinear Nitrogen Oxide Decomposition Process, 4770

Peng, Hui	The Inst. of Statistical Mathematics
Ozaki, Tohru	The Inst. of Statistical Mathematics
Haggan-Ozaki, Valerie	Sophia Univ.

10:20
Robust Digital Model Predictive Control for Linear Uncertain Systems with Saturations, 4776

Hu, Li-sheng	Shanghai Jiao Tong Univ.
Huang, Biao	Univ. of Alberta
Cao, Yong-Yan	Univ. of Virginia
Shao, Hui-He	Shanghai Jiao Tong Univ.

FrA05	**Maui Suite 1**
Stability of Switched Systems	**Regular Session**
Chair: Liberzon, Daniel	Univ. of Illinois at Urbana-champaign
Co-Chair: Ishii, Hideaki	Univ. of Illinois a t Urbana-Champaign

08:40
Gradient Algorithms for Finding Common Lyapunov Functions, 4782

Liberzon, Daniel	Univ. of Illinois at Urbana-Champaign
Tempo, Roberto	Pol. di Torino

09:00
Synthesis of Switching Rules for Switched Linear Systems through Randomized Algorithms, 4788

Ishii, Hideaki	Univ. of Illinois at Urbana-Champaign
Basar, Tamer	Univ. of Illinois at Urbana-Champaign
Tempo, Roberto	Pol. di Torino

09:20
Stability Analysis of a Class of PWM Systems Using Sampled-Data Modeling, 4794

Almer, Stefan	Royal Inst. of Tech.
Jonsson, Ulf T.	Royal Inst. of Tech.
Kao, Chung-Yao	Massachusetts Inst. of Tech.
Mari, Jorge	Royal Inst. of Tech.

09:40
On Convergence Rates of Switched Linear Systems, 4800

Sun, Zhendong	National Univ. of Ireland, Maynooth
Shorten, Robert	National Univ. of Ireland, Maynooth

10:00
Synthesis of Uniformly Ultimate Boundedness Switching Laws Fordiscrete-Time Uncertain Switched Linear Systems, 4806

Lin, Hai	Univ. of Notre Dame
Antsaklis, Panos J.	Univ. of Notre Dame

10:20
Robust Stability Analysis and Control Synthesis for Discrete-Time Uncertain Switched Systems, 4812

Xie, Dongmei	Peking Univ.
Wang, Long	Peking Univ.
Hao, Fei	Peking Univ.
Xie, Guangming	Peking Univ.

FrA06	**Maui Suite 2**
Learning and Optimizing	**Invited Session**
Based on Experience: Sample	
Path Approaches: From PA to	
MDPs	
Chair: Panayiotou, Christos	Univ. of Cyprus
Co-Chair: Cao, Xi-Ren	Hong Kong Univ. of Sci. & Tech.
Organizer: Panayiotou, Christos	Univ. of Cyprus
Organizer: Cao, Xi-Ren	Hong Kong Univ. of Sci. & Tech.
Organizer: Wardi, Yorai	Georgia Inst. of Tech.

08:40
Learning, Optimizing, and Distributed Decision Making Based on Experience, 4818

Ho, Yu-Chi	Harvard Univ.

09:00
A System Theoretic Perspective of Learning and Optimization (I), 4820

Cao, Xi-Ren	Hong Kong Univ. of Sci. & Tech.

09:20
Congestion Control Using Policy Rollout (I), 4825

Wu, Gang	Purdue Univ.
Chong, Edwin K. P.	Colorado State Univ.
Givan, Robert	Purdue Univ.

09:40
Perturbation Analysis of Stochastic Flow Networks (I), 4831

Sun, Gang	Boston Univ.
Cassandras, Christos G.	Boston Univ.
Wardi, Yorai	Georgia Inst. of Tech.
Panayiotou, Christos	Univ. of Cyprus

10:00
Application of Perturbation Analysis to Traffic Light Signal Timing (I), 4837

Fu, Michael C.	Univ. of Maryland
Howell, William	Univ. of Maryland

10:20
Implementaion of Gradient Estimation to a Constrained Markov Decision Problem (I), 4841

Krishnamurthy, Vikram	Univ. of British Columbia
Martin, Katerine	Univ. of Montreal
Vázquez-Abad, Felisa J.	Univ. of Montreal

FrA07	**Regency Boardroom**
Estimation I	**Regular Session**
Chair: Branicky, Michael S.	Case Western Res. Univ.
Co-Chair: Phillips, Stephen M.	Arizona State Univ.

08:40
Velocity Estimation Using Quantized Measurements, 4847

Phillips, Stephen M.	Arizona State Univ.
Branicky, Michael S.	Case Western Res. Univ.

09:00
A Cramer-Rao Type Lower Bound for the Estimation Error of Systems with Measurement Faults, 4853

Rapoport, Ilia	Tech. - Israel Inst. of Tech.
Oshman, Yaakov	Tech. - Israel Inst. of Tech.

09:20
Moving Horizon Monte Carlo State Estimation for Linear Systems with Output Quantization, 4859

Haimovich, Hernan	Univ. of Newcastle, Australia
Goodwin, Graham C.	Univ. of Newcastle, Australia
Quevedo, Daniel E.	Univ. of Newcastle, Australia

09:40
A New Estimation Error Lower Bound for Interruption Indicators in Systems with Uncertain Measurements, 4865

Rapoport, Ilia	Tech. - Israel Inst. of Tech.
Oshman, Yaakov	Tech. - Israel Inst. of Tech.

10:00
The Unified Structure of Unbiased Minimum-Variance Reduced-Order Filters, 4871

Hsieh, Chien-Shu	Ta Hwa Inst. of Tech.

10:20
Performance Analysis of Discrete-Time Disturbance Observer for Second-Order Systems, 4877

Yang, Kwangjin	Korea Air Force Acad.
Choi, Youngjin	Korea Ins. of Sci. & Tech. (KIST)
Chung, Wan Kyun	Pohang Univ. of Sci. & Tech. (POSTECH)

FrA08	**Maui Suite 3**
Systems Theoretic Tools for Dynamic Vision.	**Invited Session**
Chair: Sznaier, Mario	Penn State Univ.
Co-Chair: Camps, Octavia I.	Pennsylvania State Univ.
Organizer: Sznaier, Mario	Penn State Univ.
Organizer: Camps, Octavia I.	Pennsylvania State Univ.

08:40
Dynamic Level Sets for Visual Tracking (I), 4883

Niethammer, Marc	Georgia Inst. of Tech.
Tannenbaum, Allen	Georgia Inst. of Tech.

09:00
Operator Theoretic Methods for Robust Active Vision Problems. (I), 4889

Camps, Octavia I.	Pennsylvania State Univ.
Mazzaro, María Cecilia	Pennsylvania State Univ.
Murphy, Brian J.	The Pennsylvania State Univ.
Sznaier, Mario	Penn State Univ.

09:20
Volumetric Reconstruction by Random Sampling (I), 4896

Moretto, Nicola	Univ. di padova
Cugola, Nicola	Univ. di Padova
Frezza, Ruggero	Univ. di Padova

09:40
Discrete Exterior Calculus for Variational Problems in Computer Vision and Graphics (I), 4902

Desbrun, Mathieu	Univ. of So. California
Hirani, Anil N.	California Inst. of Tech.
Marsden, Jerrold E.	California Inst. of Tech.

10:00
Minimum-Energy State Estimation for Systems with Perspective Outputs and State Constraints (I), 4908

Hespanha, Joao P.	Univ. of California, Santa Barbara
Aguiar, Antonio Pedro	Univ. of California, Santa Barbara

FrA09	**Maui Suite 4**
Aircraft Control	**Regular Session**
Chair: Xu, Haojian	Univ. of Southern California
Co-Chair: Joshi, Suresh M.	NASA Langley Res. Ctr.

08:40
Global Output-Feedback Tracking Control of a VTOL Aircraft, 4914

Do, Duc	The Univ. of Western Australia
Jiang, Zhong Ping	Pol. Univ.
Pan, Jie	The Univ. of Western Australia

09:00
A Differential Game Approach to Aerial Refueling Autopilot Design, 4920

Stepanyan, Vahram	Student
Lavretsky, Eugene	The Boeing Co.
Hovakimyan, Naira	Georgia Inst. of Tech.

09:20
An Adaptive Actuator Failure Compensation Scheme for Controlling a Morphing Aircraft Model, 4926

Tao, Gang	Univ. of Virginia
Chen, Shuhao	Univ. of Virginia
Fei, Juntao	-
Joshi, Suresh M.	NASA Langley Res. Ctr.

09:40
Continuation Based Control of Aircraft Dynamics, 4932

Richardson, Thomas Stuart	Univ. of Bristol
Charles, Guy	Univ. of Bristol
Stoten, David P.	Univ. of Bristol
Di Bernardo, Mario	Univ. of Sannio
Lowenberg, Mark	Univ. of Bristol

10:00
Lqg Control of a Cfd-Based Aeroelastic Wing Model, 4939

Choi, Sangbum	California State Univ.
Xu, Haojian	Univ. of Southern California
Mirmirani, Majdedin	California State Univ.

FrA10	**Guest Room 350**
Control Education	**Regular Session**
Chair: Qiu, Li	Hong Kong Univ. of Sci. & Tech.
Co-Chair: Halikias, George D.	City Univ.

08:40
Pre-Classical Tools for Post-Modern Control, 4945

Qiu, Li	Hong Kong Univ. of Sci. & Tech.
Zhou, Kemin	Lousiana State Univ.

09:00
Parameterization for Riccati Inequalities in Hilbert Spaces, 4951

Carpanese, Nevio	Univ. of Padova

09:20
Remote System Identification in the "Automatic Control Telelab" Environment, 4956

Casini, Marco	Univ. of Siena
Garulli, Andrea	Univ. di Siena
Prattichizzo, Domenico	Univ. of Siena
Vicino, Antonio	Univ. di Siena

09:40
Control Prototyping for an Anti-Lock BrakingControl System on a Scaled Vehicle, 4962

Patil, Chinmaya	The Univ. of Texas at Austin
Longoria, Raul	Univ. of Texas at Austin
Limroth, John	National Inst.

10:00
Selection of Initial Gain for Optimal Compensators, 4968

Akpan, Eddie	NASA

FrA11	Guest Room 351
Computational Methods and Linear Inequalities	**Regular Session**
Chair: de Oliveira, Mauricio C.	School of Electrical and Computer Engineering Univ. of Campinas
Co-Chair: Li, Faming	Univ. of California, San Diego

08:40
Computer Algebra Tailored to Matrix Inequalities in Control, 4973

de Oliveira, Mauricio C.	School of Electrical and Computer Engineering Univ. of Campinas
Helton, J. William	Univ. of California at San Diego

09:00
A Finite Step Projective Algorithm for Solving Linear Matrix Inequalities, 4979

Orsi, Robert	National ICT Australia
Rami, Mustapha Ait	Chinese Univ. of Hong Kong
Moore, John B.	Australian National Univ.

09:20
A Semidefinite Representation for Some Minimum Cardinality Problems., 4985

d'Aspremont, Alexandre	Stanford Univ.

09:40
The Economical Simulation Problem, 4991

Li, Faming	Univ. of California at San Diego
Skelton, Robert E.	Univ. of California at San Diego

10:00
Fast Linear Iterations for Distributed Averaging, 4997

Xiao, Lin	Stanford Univ.
Boyd, Stephen P	Stanford Univ.

10:20
MILP Formulation and Polynomial Time Algorithm for an Aircraft Scheduling Problem, 5003

Bayen, Alexandre M.	Stanford Univ.
Tomlin, Claire J.	Stanford Univ.
Ye, Yinyu	Stanford Univ.
Zhang, Jiawei	Stanford Univ.

FrA12	Maui Suite 5
Uncertain Systems	**Regular Session**
Chair: Mareels, Iven	The Univ. of Melbourne
Co-Chair: Dullerud, Geir E.	Univ. of Illinois at Urbana-champaign

08:40
Set Membership Identification for Adaptive Control: Input Design, 5011

Cadic, Maria	Twente Univ.
Polderman, Jan Willem	Univ. of Twente
Mareels, Iven	The Univ. of Melbourne

09:00
A Note on Computing Polynomial Filters for Robust SPR of Systems with Polyhedral Uncertainty, 5017

Bianchini, Gianni	Univ. di Siena

09:20
Robust Analysis of Linear Systems Affected by Time-Invariant Hypercubic Parametric Uncertainty, 5019

Chesi, Graziano	Univ. Di Siena

09:40
H-Infinity Control for Nonlinear Stochastic Systems, 5025

Berman, Nadav	Ben Gurion Univ. of The Negev
Shaked, Uri	Tel-Aviv Univ.

10:00
Analysis of Mode-Dependent Statistics of Markovian Jump Linear Systems, 5031

Lee, Ji-Woong	Univ. of Illinois at Urbana-Champaign
Dullerud, Geir E.	Univ. of Illinois at Urbana-champaign

10:20
Robust H-Infinity Reliable Control of Uncertain Markovian Jump Systems with Time-Delays, 5033

Yu, Zhaoxu	Shanghai Jiaotong Univ.
Wu Tihua, Wu Tihua	Shanghai Jiao Tong Univ.
Sun Jitao, Sun Jitao	Tongji Univ.

FrA13	Guest Room 450
Stability of Time-Delay Systems I	**Regular Session**
Chair: Niculescu, Silviu-Iulian	Univ. de Tech. de Compiegne
Co-Chair: Verriest, Erik I.	Georgia Inst. of Tech.

08:40
Structured Phase Margin for Stability Analysis of Linear Systems with Time-Delay, 5035

Chellaboina, VijaySekhar	Univ. of Missouri- Columbia
Haddad, Wassim M.	Georgia Inst. of Tech.
Kalavagunta, Sushma	Univ. of Missouri Columbia
Kamath, Ajeet	Univ. of Missouri-Columbia

09:00
Analysis of Multiple Interval Delay Systems Via Sufficient and Asymptotically Necessary Comparison System, 5041

Knospe, Carl R.	Univ. of Virginia
Roozbehani, Mardavij	Massachusetts Inst. of Tech.

09:20
Robust Stability of Quasipolynomials: Frequency-Sweeping Conditions, 5048

Chen, Jie	Univ. of California at Riverside
Niculescu, Silviu-Iulian	Univ. de Tech. de Compiegne

09:40
On Testing the Stability of Linear Neutral Systems: A DLF Approach, 5054

Han, Qing-long	Central Queensland Univ.

10:00
Routh-Hurwitz Criterion and Stability of Neutral Systems, 5060

Verriest, Erik I.	Georgia Inst. of Tech.
Michiels, Wim	Katholieke Univ. Leuven

10:20
On Stability for Neutral Differential Systems with Mixed Time-Varying Delay Arguments, 5066

Li, Tao	Dalian Univ. of Tech.
Yang, Bin	Dalian Univ. of Tech.
Wang, Jincheng	Dalian Univ. of Tech.
Zhong, Chongquan	Dalian Univ. of Tech.

FrA14	Guest Room 451
ISS and Lyapunov Approaches in Nonlinear Systems	**Regular Session**
Chair: Nesic, Dragan	Univ. of Melbourne
Co-Chair: Angeli, David	Univ. of Firenze

08:40
Analysis of Input to State Stability for Discrete Time Nonlinear Systems Via Dynamic Programming, 5068

Huang, Shoudong	Australian National Univ.
James, Matthew R.	Australian National Univ.
Nesic, Dragan	Univ. of Melbourne
Dower, Peter M.	The Univ. of Melbourne

09:00
Scaling Supply Rates of ISS Systems for Stability of Feedback Interconnected Nonlinear Systems, 5074
    Ito, Hiroshi   Kyushu Inst. of Tech.
09:20
Some Remarks on Density Functions for Dual Lyapunov Methods, 5080
    Angeli, David   Univ. of Firenze
09:40
A New Approach for Asymptotic Stability Analysis in the Case of Discontinuous Lyapunov Function Derivative, 5083
    Lu, Xiao-yun   Univ. of California at Berkeley
    Hedrick, J. Karl   Univ. of California at Berkeley
10:00
Converse Theorems of the Principal Lyapunov Results for Partial Stability of General Dynamical Systems on Metric Spaces, 5085
    Molchanov, Alexander P.   Russian Acad. of Sciences
    Michel, Anthony N.   Univ. of Notre Dame
    Sun, Ye   Univ. of Notre Dame
10:20
A Generalization of Piecewise Linear Lyapunov Functions, 5091
    Ohta, Yuzo   Kobe Univ.
    Tsuji, Masaaki   Kobe Univ.

FrAPI   **Grand Promenade**
Discrete Events and Learning   Poster/Interactive Paper Session
    Chair: Abdallah, Chaouki T.   Univ. of New Mexico
08:40
Least Squares Support Vector Machines for Fixed-Step and Fixed-Set CDMA Power Control, 5097
    Rohwer, Judd   Sandia National Lab.
    Abdallah, Chaouki T.   The Univ. of New Mexico
    Christodoulou, Christos   The Univ. of New Mexico

Neural Network Application to Linear Systems with Binary Inputs, 5103
    Holderbaum, William   The Univ. of Reading

Robust Mobile Robotic Formation Control Using Internet-Like Protocols, 5109
    Sandoval-Rodriguez, Rafael   Univ. of New Mexico
    Abdallah, Chaouki T.   Univ. of New Mexico
    Hokayem, Peter   Univ. of New Mexico
    Schamiloglu, Edl   Univ. of New Mexico
    Byrne, Ray H.   Sandia National Lab.

Study on Real-Time Discrete Event Systems by Using Controlled Temporal Timed-Petri-Nets, 5113
    Liu, Changyou   Civil Aviation Univ. of China
    Li, Yongjian   Tshinghua Univ.

Fault Isolation in Discrete Event Systems by Observational Abstraction, 5118
    Lawesson, Dan   Linköping Univ.
    Nilsson, Ulf   Linköping Univ.
    Klein, Inger   Linköping Univ.

Stochastic Single Machine Scheduling with Proportional Job Weights to Minimize Deviations of Completion Times from a Common Due Date, 5124
    Jia, Chunfu   Nankai Univ.

Dynamic Discrete-Time Load Balancing in Distributed Systems in the Presence of Time Delays, 5128
    Dhakal, Sagar   Univ. of New Mexico
    Paskaleva, Biliana   Univ. of New Mexico
    Hayat, Majeed M.   Univ. of New Mexico
    Schamiloglu, Edl   Univ. of New Mexico
    Abdallah, Chaouki T.   Univ. of New Mexico

Degenerative Systems, 5135
    Johnson, Timothy L.   GE Global Res.

FrDPL   **Monarchy Ballroom**
Bode Lecture   **Plenary Session**
    Chair: Shaw, Leonard   Pol. Univ.
11:00
Challenges of Nonlinear Identification *
    Ljung, Lennart   Linköping Univ.

FrM01   **Monarchy Ballroom**
Linear Matrix Inequalities   **Regular Session**
    Chair: Skelton, Robert E.   Univ. of California at San Diego
    Co-Chair: Peres, Pedro L. D.   Univ. of Campinas
12:40
A Unified LMI Approach to Reduced-Order Controllers: A Matrix Pencil Perspective, 5137
    Xin, Xin   Okayama Prefectural Univ.
13:00
An LMI Optimization Approach for Structured Linear Cntrollers, 5143
    Han, JeongHeon   Univ. of California at San Diego
    Skelton, Robert E.   Univ. of California at San Diego
13:20
Less Conservative LMI Conditions for D-Stability, 5149
    Oliveira, Ricardo C. L. F.   Univ. of Campinas
    Peres, Pedro L. D.   Univ. of Campinas
13:40
On Strong Stabilization and Hinfinity Strong Stabilization, 5155
    Chou, Yung-Shan   Tamkang Univ.
    Wu, David Tai-Zu   National Central Univ.
    Leu, Jiunn-Liang   Tamkang Univ.
14:00
Low Order Multicriteria H-Inf Design Via Bilinear Matrix Inequalities, 5161
    Fransson, Carl-magnus   Chalmers Univ. of Tech.
    Lennartson, Bengt   Chalmers Univ. of Tech.
14:20
Parameter-Dependent Lyapunov Functions for Stability Analysis of LTI Parameter Dependent Systems, 5168
    Zhang, Xiping   Georgia Inst. of Tech.
    Tsiotras, Panagiotis   Georgia Inst. of Tech.
    Iwasaki, Tetsuya   Univ. of Virginia

FrM02   **Regency A**
Nonlinear Systems VI   **Regular Session**
    Chair: Medanic, Juraj V.   Univ. of Illinois at Urbana-Champaign
    Co-Chair: French, Mark   Univ. of Southampton
12:40
Invariance for Impulsive Control Systems, 5174
    Oliveira, Valeriano   IMECC- UNICAMP
    Pereira, Fernando Lobo   Porto Univ. Inst. For Systems & Robotics
    Silva, G.N.   Univ. Estadual Paulista
13:00
Gap Metric Robustness of a Backstepping Control Design, 5180
    Xie, Chengkang   Univ. of Southampton
    French, Mark   Univ. of Southampton
13:20
Nonlinear Output Feedback Controller Design by Projective Controls, 5185
    Medanic, Juraj V.   Univ. of Illinois at Urbana-Champaign
13:40
Stabilization of a Chain of Integrators with Nonlinear Perturbations: Application to the Inverted Pendulum, 5191
    Lozano, Rogelio   Univ. de Tech. de Compiegne
    Dimogianopoulos, Dimitrios   Univ. de Tech. de Compiegne

14:00
Properties of the Composite Quadratic Lyapunov Functions, 5197
Hu, Tingshu   Univ. of Virginia
Lin, Zongli   Univ. of Virginia

14:20
Discrete Time Versus Hybrid Systems, 5203
Monaco, Salvatore   Univ. degli Studi di Roma La Sapienza
Normand-Cyrot, Marie-dorothee   CNRS-ESE
Califano, Claudia   Univ. di Roma

FrM03	Regency B
Fuzzy Systems II	Regular Session

Chair: Fadali, Mohammed Sami   Univ. of Nevada
Co-Chair: Sonbol, Assem   Univ. of Nevada - Reno

12:40
Fuzzy Lyapunov Stability Analysis of Discrere Type II TSK Systems, 5209
Sonbol, Assem   Univ. of Nevada - Reno
Fadali, Mohammed Sami   Univ. of Nevada

13:00
Hybrid Kalman Filter-Fuzzy Logic Multisensor Data Fusion Architectures, 5215
Mort, Neil   Univ. of Sheffield
Escamilla-Ambrosio, Ponciano Jorge   Univ. of Bristol

13:20
Fuzzy Convexity with Application to Fuzzy Decision Making, 5221
Lee, E. Stanley   Kansas State Univ.
syau, Yu-Ru   Da Yeh Univ.

13:40
Adaptive Fuzzy Control for a Class of Uncertain Nonlinear Systems, 5227
Vélez-Díaz, Daniel   National Univ. of Mexico
Tang, Yu   National Univ. of Mexico

14:00
State-Feedback Stabilization for Nonlinear Time-Delay Systems: A New Fuzzy Weighting-Dependent Lyapunov-Krasovskii Functional Approach, 5233
Park, PooGyeon   Pohang Univ. of Sci. & Tech.
Lee, Seung Shin   Pohang Univ. of Science and Tech.
Choi, Doo Jin   Pohang Univ. of Sci. & Tech.

14:20
H2 State Feedback Control for Fuzzy Singularly Perturbed Systems, 5239
Liu, Huaping   Univ. of Tsinghua
Sun, Fuchun   Univ. of Tsinghua
He, Kezhong   Univ. of Tsinghua
Sun, Zengqi   Univ. of Tsinghua

FrM04	Regency C
Model Reduction	Regular Session

Chair: Samar, Sikandar   Stanford Univ.
Co-Chair: Antoulas, Athanasios C.   Rice Univ.

12:40
Model Reduction of Spatially-Invariant Array Systems, 5244
Samar, Sikandar   Univ. of Illinois at Urbana-Champaign
Beck, Carolyn L.   Univ. of Illinois at Urbana-Champaign

13:00
A Time-Limited Balanced Reduction Method, 5250
Gugercin, Serkan   Virginia Tech.
Antoulas, Athanasios C.   Rice Univ.

13:20
POD Model Reduction with Stability Guarantee, 5254
Prajna, Stephen   California Inst. of Tech.

13:40
Model Reduction of Uncertain Systems: Approximation by Uncertain System, 5259
Dolgin, Yuri   Tech. - Israel Inst. of Tech.
Zeheb, Ezra   Tech. Inst. of Tech.

14:00
Orthonormal Rational Functions Via the Jury Table and Their Applications, 5265
Zhao, Xiaodong   Hong Kong Univ. of Sci. & Tech.
Qiu, Li   Hong Kong Univ. of Sci. & Tech.

14:20
Model Reduction of Heterogeneous Distributed Systems, 5271
Samar, Sikandar   Univ. of Illinois at Urbana-Champaign
Beck, Carolyn L.   Univ. of Illinois at Urbana-Champaign

FrM05	Maui Suite 1
Switched Systems I	Regular Session

Chair: Asai, Toru   Osaka Univ.
Co-Chair: Pettersson, Stefan   Chalmers Univ. of Tech.

12:40
LMI-Based Synthesis for Robust Attenuation of Disturbance Responses Due to Switching, 5277
Asai, Toru   Osaka Univ.

13:00
Synthesis of Switched Linear Systems, 5283
Pettersson, Stefan   Chalmers Univ. of Tech.

13:20
Disturbance Attenuation Properties for Discrete-Time Uncertain Switched Linear Systems, 5289
Lin, Hai   Univ. of Notre Dame
Antsaklis, Panos J.   Univ. of Notre Dame

13:40
Optimal and Suboptimal Control of Switching Systems, 5295
Bengea, Sorin C.   Purdue Univ.
DeCarlo, Raymond A.   Purdue Univ.

14:00
The Multivariable Circle Criterion for Switched Continuous Systems, 5301
Bedillion, Mark   Carnegie Mellon Univ.
Messner, William   Carnegie Mellon Univ.

14:20
Kinematic Reducibility of Multiple Model Systems, 5307
Murphey, Todd   The Aerospace Corp.
Burdick, Joel W.   California Inst. of Tech.

FrM06	Maui Suite 2
Stochastic Systems I	Regular Session

Chair: Buche, Robert   NC State Univ.
Co-Chair: Hu, Jianghai   Univ. of California at Berkeley

12:40
Stochastic Reachability for Discrete Time Systems: An Application to Aircraft Collision Avoidance, 5314
Watkins, Oliver   Univ. of Cambridge
Lygeros, John   Univ. of Patras

13:00
Adaptive Optimization of Tracking Algorithms: Applications to Adaptive Antenna Arrays for Randomly-Varying Mobile Communications, 5320
Buche, Robert   NC State Univ.
Kushner, Harold J.   Brown Univ.

13:20
Feedforward Feedback Controller Design for Uncertain Systems, 5328

Wik, Torsten	Chalmers Univ. of Tech.
Fransson, Carl-magnus	Chalmers Univ. of Tech.
Lennartson, Bengt	Chalmers Univ. of Tech.

13:40
Probabilistic Safety Analysis in Three Dimensional Aircraft Flight, 5335

Hu, Jianghai	Univ. of California at Berkeley
Prandini, Maria	Pol. di Milano
Sastry, Shankar	Univ. of California at Berkeley

14:00
A Distributed Algorithm for Solving a Class of Multi-Agent Markov Decision Problems, 5341

Chang, Hyeong Soo	Sogang Univ.
Fu, Michael C.	Univ. of Maryland

14:20
Probabilistic Distances between Finite-State Finite-Alphabet Hidden Markov Models, 5347

Xie, Li	Univ. Coll. The Univ. of New South Wales
Ugrinovskii, Valery	Australian Defence Force Acad.
Petersen, Ian R.	Australian Defence Force Acad.

FrM07 — Regency Boardroom
Estimation II — Regular Session

Chair: Bodson, Marc	Univ. of Utah
Co-Chair: Skelton, Robert E.	Univ. of California at San Diego

12:40
Performance Analysis of Hybrid Estimation Algorithms, 5353

Hwang, Inseok	Stanford Univ.
Balakrishnan, Hamsa	Stanford Univ.
Tomlin, Claire J.	Stanford Univ.

13:00
Frequency Estimation and Tracking of Multiple Sinusoidal Components, 5360

Guo, Xiuyan	Univ. of Utah
Bodson, Marc	Univ. of Utah

13:20
Progressive Bayesian Estimation for Nonlinear Discrete-TimeSystems: The Filter Step for Scalar Measurements Andmultidimensional States, 5366

Hanebeck, Uwe	Univ. Karlsruhe
Feiermann, Olga	Univ. Karlsruhe

13:40
Multi-Scan Parametric Target Tracking in Clutter, 5372

Musicki, Darko	Univ. of Melbourne
Evans, Robin J.	Univ. of Melbourne
La Scala, Barbara F.	Univ. of Melbourne

14:00
State Estimation with Finite Signal-To-Noise Models, 5378

Li, Weiwei	Univ. of California San Diego
Skelton, Robert E.	Univ. of California at San Diego

14:20
Observer Design for Linear Singular Time-Delay Systems, 5384

Feng, Jun'e	Shandong Univ.
Zhu, Shuqian	Shandong Univ.
Cheng, Zhaolin	Shandong Univ.

FrM08 — Maui Suite 3
Visual Servo Control — Regular Session

Chair: Danes, Patrick	LAAS-CNRS
Co-Chair: Fang, Yongchun	Clemson Univ.

12:40
An Exponential Class of Model-Free Visual Servoing Controllers in the Presence of Uncertain Camera Calibration, 5390

Fang, Yongchun	Cornell Univ.
Dixon, Warren E.	Oak Ridge Nationl Lab.
Dawson, Darren M.	Clemson Univ.
Chen, Jian	Clemson Univ.

13:00
Adaptive Visual Servoing in the Presence of Intrinsic Calibration Uncertainty, 5396

Chen, Jian	Clemson Univ.
Behal, A.	Clemson Univ.
Dawson, Darren M.	Clemson Univ.
Dixon, Warren E.	Oak Ridge Nationl Lab.

13:20
Identification of a Moving Object's Velocity with a Fixed Camera, 5402

chitrakaran, vilas	Clemson Univ.
Dawson, Darren M.	Clemson Univ.
Dixon, Warren E.	Oak Ridge Nationl Lab.
Chen, Jian	Clemson Univ.

13:40
Visual Servoing of 6 DOF Manipulator by Multirate Control with Depth Identification, 5408

Fujimoto, Hiroshi	Nagaoka Univ. of Tech.

14:00
Image-Based Tracking Control of a Blimp, 5414

Fukao, Takanori	Kyoto Univ. Carnegie Mellon Univ.
Fujitani, Kazushi	Kyoto Univ. Carnegie Mellon Univ.
Kanade, Takeo	Carnegie Mellon Univ.

14:20
An LMI Solution to Visual-Based Localization As the Dual of Visual Servoing, 5420

Bellot, Delphine	LAAS-CNRS
Danes, Patrick	LAAS-CNRS

FrM09 — Maui Suite 4
Missile and Aircraft GNC — Regular Session

Chair: Lyshevski, Sergey	Rochester Inst. of Tech.
Co-Chair: Kaminer, Isaac	Naval Post-Graduate School

12:40
MEMS Smart Variable-Geometry Flexible Flight Control Surfaces: Distributed Control and High-Fidelity Modeling, 5426

Lyshevski, Sergey	Rochester Inst. of Tech.

13:00
Space Transformation Method in Control of Agile Interceptors and Missiles with Advanced Microelectromechanical Actuators, 5432

Lyshevski, Sergey	Rochester Inst. of Tech.

13:20
On the Development of GNC Algorithm for a High-Glide Payload Delivery System, 5438

Kaminer, Isaac	Naval Postgraduate School
Yakimenko, Oleg	Naval Postgraduate School

13:40
Optical-Flow Based Precision Missile Guidance Inspired by Honeybee Navigation, 5444

Manchester, Ian	Univ. of New South Wales
Savkin, Andrey V.	Univ. of New South Wales
Faruqi, Farhan	Defence Science Tech. Organisation

14:00
Capture Zones in a Pursuit-Evasion Game, 5450

Shima, Tal	Rafael

14:20
Control Surface Inverse Algorithm and Application to Nonlinear H_:
Missile Control, 5456

Kung, Chien-Chung	Chung Cheng Inst. of Tech.
	National Defense Univ.
Yang, Ciann-Dong	National Cheng Kung Univ.
Lei, Keng-Ion	Via Tech. Inc.

FrM10   **Guest Room 350**
Control in Manufacturing   **Regular Session**

Chair: Abdallah, Chaouki T.	Univ. of New Mexico
Co-Chair: Paschalidis,	Boston Univ.
Ioannis	

12:40
Optimal Discrete-Flow Control of a Single-Stage Failure-Prone
Manufacturing System., 5462

MOURANI, Iyad	INRIA
Hennequin, Sophie	ENIM
Xie, Xiaolan	INRIA

13:00
Optimal Distributed Real-Time Scheduling of Flexible
Manufacturing Networks Modeled As Hybrid Dynamical Systems,
5468

Savkin, Andrey V.	Univ. of New South Wales

13:20
A Modelling Approach for the Dynamic Scheduling Problem of
Manufacturing Systems with Non Negligible Setup Times and
Finite Buffers, 5472

Boccadoro, Mauro	Univ. di Perugia
Valigi, Paolo	Univ. di Perugia

13:40
Supply Chain (SC) Production Scheduling with Dynamic Lead
Time and Quality of Service Constraints, 5478

Caramanis, Michael C.	Boston Univ.
Anli, Osman Murat	Boston Univ.
Paschalidis, Ioannis	Boston Univ.

14:00
Optimal Scheduling Strategies of Jobs Belonging to Different
Classes on a Single Machine with Variable Processing Times,
5486

Giglio, Davide	Univ. of Genova
Minciardi, Riccardo	Univ. of Genova
Tassara, Stefano	Univ. of Genova

14:20
Enforcing Service-Level Constraints in Supply Chains with
Assembly Operations, 5490

Del Vecchio, Carmen	Univ. Del Sannio
Paschalidis, Ioannis Ch.	Boston Univ.

FrM11   **Guest Room 351**
Computational Methods for   **Regular Session**
Systems

Chair: Ohta, Yoshito	Osaka Univ.
Co-Chair: Mitchell, Ian	Univ. of British Columbia

12:40
Trajectory Following Optimization by Gradient Transformation
Differential Equations, 5496

Grantham, Walter J.	Washington State Univ.

13:00
Continuous Path Planning with Multiple Constraints, 5502

Mitchell, Ian	Univ. of British Columbia
Sastry, Shankar	Univ. of California at Berkeley

13:20
Optimal Switching Policies Using Coarse Timesteppers, 5508

Armaou, Antonios	The Pennsylvania State Univ.
Kevrekidis, Ioannis	Princeton Univ.

13:40
Shooting for Border Collision Bifurcations in Hybrid Systems, 5514

Donde, Vaibhav	Univ. of Illinois at UC
Hiskens, Ian A.	Univ. of Wisconsin - Madison

14:00
Epsilon-Feasible Approximation of the State Reachable Set for
Discrete-Time Systems, 5520

Hirata, Kenji	Osaka Univ.
Ohta, Yoshito	Osaka Univ.

14:20
Fuzzy-Based Controller/observer Via Grid Point Design and SVD-
Consolidation, 5526

Yam, Yeung	The Chinese Univ. of Hong Kong
Lee, Wai Man	The Chinese Univ. of Hong Kong

FrM12   **Maui Suite 5**
System Identification   **Regular Session**

Chair: Venkatesh, S. R.	Boston Univ.
Co-Chair: Milanese, Mario	Pol. di Torino

12:40
Identification of Uncertain Systems Described by Linear Fractional
Transformations, 5532

Venkatesh, S.R.	Boston Univ.

13:00
Structured Experimental Modeling of Complex Nonlinear Systems,
5538

Milanese, Mario	Pol. di Torino
Novara, Carlo	Pol. di Torino
Pivano, Luca	Pol. di Torino

13:20
Musical Pitch Tracking Using Internal Model Control Based
Frequency Cancellation, 5544

Zhao, Zhenyu	the Univ. of Western Ontario
Brown, Lyndon J.	Univ. of Western Ontario

13:40
Identifiability of Linear Time-Invariant Differential-Algebraic
Systems - Application of Differential Algebra, 5549

Ben-Zvi, Amos	Queen's Univ.
McLellan, P. James	Queen's Univ.
McAuley, Kim	Queen's Univ.

14:00
Parameter Identification and Intersample Output Estimation of a
Class of Dual-Rate Systems, 5555

Ding, Feng	Univ. of Alberta
Chen, Tongwen	Univ. of Alberta

14:20
An Optimal Algorithm for the Parameter Identification of MIMO
Linear Systems Using Bounding Ellipsoids, 5561

Becis-Aubry, Yasmina	Centre de Recherche en
	Automatique de Nancy (CRAN)
Boutayeb, M.	CRAN-CNRS URA 821
Darouach, Mohamed	Univ. Henri Poincare-Nancy

FrM13   **Guest Room 450**
Stability of Time-Delay   **Regular Session**
Systems II

Chair: Gu, Keqin	Southern Illinois Univ. at
	Edwardsville
Co-Chair: Niculescu, Silviu-	Univ. de Tech. de Compiegne
Iulian	

12:40
On the Stability of Coupled Delay Differential and Continuous Time
Difference Equations, 5567

Pepe, Pierdomenico	Univ. of L' Aquila
Verriest, Erik I.	Georgia Inst. of Tech.

13:00
Quadratic Lyapunov Functions for Linear Control Systems with
Delays, 5573

BARABANOV, Nikita E.	North Dakota State Univ. ND,
	USA

13:20
Robust Stability of Teleoperation Schemes Subject to Constant
and Time Varying Communication Delays, 5579

Taoutaou, Damia	Univ. de Tech. de Compiegne
Niculescu, Silviu-Iulian	Univ. de Tech. de Compiegne
Gu, Keqin	Southern Illinois Univ. at Edwardsville

13:40
Robust H_; Control for a Class of Uncertain Lur'e Singular
Systems with Time-Delays, 5585

Lu, RenQuan	Zhejiang Univ.
Su, HongYe	Zhejiang Univ.
Chu, Jian	Zhejiang Univ.

14:00
Remarks on the Stability of a Class of TCP-Like Congestion
Control Models, 5591

Mazenc, Frederic	Inria Lorraine,
Niculescu, Silviu-Iulian	Univ. de Tech. de Compiegne

14:20
Stability Analysis of Retarded Systems Via Lifting Technique, 5595

Hirata, Kentaro	Osaka Prefecture Univ.
Kokame, Hideki	Osaka Prefecture Univ.

FrM14	Guest Room 451
Stability of Nonlinear Systems	**Regular Session**
Chair: Haddad, Wassim M.	Georgia Inst. of Tech.
Co-Chair: Chellaboina, VijaySekhar	Univ. of Missouri- Columbia

12:40
Stabilization of Nonlinear RLC Circuits: Power Shaping and
Passivation, 5597

Ortega, Romeo	LSS-SUPELEC
Jeltsema, Dimitri	Delft Univ. of Tech.
Scherpen, Jacquelien M.A.	Delft Univ. of Tech.

13:00
Large-Scale Nonlinear Dynamical Systems: A Vector Dissipative
Systems Approach, 5603

Haddad, Wassim M.	Georgia Inst. of Tech.
Chellaboina, VijaySekhar	Univ. of Missouri- Columbia
Nersesov, Sergey G.	Georgia Inst. of Tech.

13:20
Estimating the Domain of Attraction: A Light LMI Technique for a
Class of Polynomial Systems, 5609

Chesi, Graziano	Univ. Di Siena

13:40
Calculation of Stability Region, 5615

Cheng, Daizhan	Chinese Acad. of Sciences
Ma, Jin	Tsinghua Univ.

14:00
On Time-Domain Multiplier Criteria for Single-Input Single-Output
Systems, 5621

Shorten, Robert	National Univ. of Ireland, Maynooth
Curran, Paul	NUI Dublin
Wulff, Kai	NUI Maynooth

14:20
A Nontangency-Based Sufficient Condition for Boundedness of
Orbits, 5626

Bhat, Sanjay P.	Indian Inst. of Tech. - Bombay

FrP01	Monarchy Ballroom
Lmi/lpv	**Regular Session**
Chair: Dullerud, Geir E.	Univ. of Illinois at Urbana-champaign
Co-Chair: Ariola, Marco	Univ. degli Studi di Napoli Federico II

15:00
Inversion of Perturbed Liner Operators That Are Singular at the
Origin, 5628

Howlett, Philip George	Univ. of South Australia
Ejov, Vladimir	Univ. of South Australia
Avrachenkov, Konstantin E.	INRIA Sophia Antipolis

15:20
Structured Controller Synthesis Using LMI and Alternating
Projection Method, 5632

Ebihara, Yoshio	Kyoto Univ.
Hagiwara, Tomomichi	Kyoto Univ.

15:40
Model Reduction of Stabilizable Nonstationary LPV Models, 5638

Farhood, Mazen	Univ. of Illinois at Urbana-champaign
Beck, Carolyn L.	Univ. of Illinois at Urbana-Champaign
Dullerud, Geir E.	Univ. of Illinois at Urbana-champaign

16:00
On Switching H-Infinity Controllers for a Class of LPV Systems,
5644

Yan, Peng	The Ohio State Univ.
Ozbay, Hitay	Bilkent Univ.

16:20
Linear Parameter Varying Controller for an Induction Machine,
5651

Mosskull, Henrik	-Bombardier Transportation, Sweden

FrP02	Regency A
Nonlinear Systems VII	**Regular Session**
Chair: Di Bernardo, Mario	Univ. of Sannio
Co-Chair: Lin, Zongli	Univ. of Virginia

15:00
Passivity-Based Control of a Doubly-Fed Induction Generator
Interconnected with an Induction Motor, 5657

Becherif, mohamed	LSS-SUPELEC LGEP
Ortega, Romeo	LSS-SUPELEC
Mendes, Eduardo	ESISAR-INPG
Lee, SangCheol	Postech

15:20
Finite Gain Lp Stabilization of Discrete-Time Linear Systems
Subject to Actuator Saturation: The Case of P=1, 5663

Chitour, Yacine	Lab. D'analyse Numerique
Lin, Zongli	Univ. of Virginia

15:40
Establishing Lipschitz Properties of Multivariable Algebraic Loops
with Incremental Sector Nonlinearities, 5667

Grimm, Gene	Univ. of California, Santa Barbara
Teel, Andrew R.	Univ. of California at Santa Barbara
Zaccarian, Luca	Univ. di Roma, Tor Vergata

16:00
Finite Time Convergent Observers for Nonlinear Systems, 5673

Menold, Patrick H.	Univ. of Stuttgart
Findeisen, Rolf	Univ. of Stuttgart
Allgower, Frank	Univ. of Stuttgart

16:20
A New Method to Design Discontinuous Stabilizing Controllers for
Chained Systems, 5679

Ogata, Akihiro	Chiba Univ.
Tashiro, Yasuhiro	Chiba Univ.
Liu, Kang-Zhi	Chiba Univ.
Saito, Osami	Chiba Univ.

16:40
Classical State Space Realizability of Input-Output Bilinear Models, 5685

Kotta, Ülle	Inst. of Cybernetics at TTU
Nomm, Sven	Inst. of Cybernetics at TTU
Zinober, Alan	The Univ. of Sheffield

FrP03	Regency B
Neural Network Control	**Regular Session**
Chair: Jagannathan, Sarangapani	The Univ. of Missouri-Rolla
Co-Chair: Hill, David J.	City Univ. of Hong Kong

15:00
Neural Network Adaptive Control for Discrete-Time Nonlinear Nonnegative Dynamical Systems, 5691

Haddad, Wassim M.	Georgia Inst. of Tech.
Chellaboina, VijaySekhar	Univ. of Missouri- Columbia
Hui, Qing	Georgia Inst. of Tech.
Hayakawa, Tomohisa	Georgia Inst. of Tech.

15:20
Passivity-Based Neural Network Adaptive Output Feedback Control for Nonlinear Nonnegative Dynamical Systems, 5697

Hayakawa, Tomohisa	Georgia Inst. of Tech.
Haddad, Wassim M.	Georgia Inst. of Tech.
Bailey, James M.	Emory Univ. Hospital
Hovakimyan, Naira	Georgia Inst. of Tech.

15:40
Discrete-Time Neural Network Control of Nonlinear Systems in Non-Strict Feedback Form, 5703

He, Pingan	Univ. of Missouri-Rolla
Jagannathan, Sarangapani	Univ. of Missouri-Rolla

16:00
Adaptive Critic Neural Network-Based Controller for Nonlinear Systems with Input Constraints, 5709

He, Pingan	Univ. of Missouri-Rolla
Jagannathan, Sarangapani	Univ. of Missouri-Rolla

16:20
An Adaptive Approach to Control of Distributed Parameter Systems, 5715

King, Belinda B.	AFOSR/NM
Hovakimyan, Naira	Georgia Inst. of Tech.

16:40
Learning from Neural Control, 5721

Wang, Cong	City Univ. of Hong Kong
Hill, David J.	City Univ. of Hong Kong

FrP04	Regency C
Model Reduction and Estimation	**Regular Session**
Chair: Xie, Lihua	Nanyang Tech. Univ.
Co-Chair: Leizarowitz, Arie	Tech.

15:00
Model Reduction of Irreducible Markov Chains, 5727

Kotsalis, Georgios N.	Massachusetts Inst. of Tech.
Dahleh, Munther A.	Massachusetts Inst. of Tech.

15:20
Bilinear Model Approximation for a Class of Regionally Stable Uncertain Nonlinear Systems, 5729

Coutinho, Daniel Ferreira	Pontificia Univ. Catolica do Rio Grande do Sul
Trofino, Alexandre	Federal Univ. of Santa Catarina

15:40
Necessary and Sufficient Condition for H Infinity Estimation of Linear Time Delay Systems, 5735

Zhang, Huanshui	Hong Kong Pol. Univ.
Zhang, David	The Hong Kong Pol. Univ.
Xie, Lihua	Nanyang Tech. Univ.

16:00
An Integrated Nonlinear Observer with Sliding Mode Estimation for a Class of Nonlinear Uncertain Systems, 5741

Cao, W.	Nanyang Tech. Univ.
Soh, Y. C.	NanyangTech. Univ.
Veluvolu, K. C.	Nanyang Tech. Univ.

16:20
Order Reduction Method for Systems with Scalar, Linear Fast Dynamics*

Leizarowitz, Arie	Tech.

16:40
Gaussian Inference in Loopy Graphical Models, 5747

Plarre, Kurt	Univ. of Illinois at Urbana-Champaign
Kumar, P. R.	Univ. of Illinois at Urbana-Champaign

FrP05	Maui Suite 1
Switched Systems II	**Regular Session**
Chair: Egerstedt, Magnus	Georgia Inst. of Tech.
Co-Chair: Mukherjee, Ranjan	Michigan State Univ.

15:00
Controllability and Observability Enhancement through Switching: Application to Vibration Control, 5753

Nudehi, Shahin	Michigan State Univ.
Mukherjee, Ranjan	Michigan State Univ.

15:20
Accessibility of Switched Linear Systems, 5759

Cheng, Daizhan	Chinese Acad. of Sciences
Chen, Han-Fu	Chinese Acad. of Sciences

15:40
Reachability of Switched Discrete-Time Systems under Constrained Switching, 5765

Wang, Yijing	Peking Univ.
Xie, Guangming	Peking Univ.
Wang, Long	Peking Univ.

16:00
Pathwise Observability and Controllability Are Decidable, 5771

Babaali, Mohamed	Georgia Inst. of Tech.
Egerstedt, Magnus	Georgia Inst. of Tech.

16:20
On Observability and Detectability of Continuous-Time Linear Switching Systems, 5777

De Santis, Elena	Univ. of L'Aquila
Di Benedetto, M. Domenica	Univ. of L'Aquila
Pola, Giordano	Univ. of L'aquila

16:40
Parameter Estimation of Switching Piecewise Linear System, 5783

Ragot, José	CRAN-INPL
Mourot, Gilles	CRAN-INPL
Maquin, Didier	CRAN-INPL

FrP06	Maui Suite 2
Stochastic Systems II	**Regular Session**
Chair: La, Richard J.	Univ. of Maryland, Coll. Park
Co-Chair: Ohara, Atsumi	Osaka Univ.

15:00
Weak Detectability and the LQ Problem of Discrete-Time Infinite Markov Jump Linear Systems, 5789

Costa, Eduardo F.	Unicamp
Do Val, Joao B.R.	UNICAMP
Fragoso, Marcelo	LNCC / CNQP

15:20
An Algebraic Characterization of Covariance Extension Problem and Its Applications, 5795

Ohara, Atsumi	Osaka Univ.

15:40
Outsourcing and Price-QoS Equilibrium for E-Commerce and Internet Firms: IT On-Demand, 5801

Dube, Parijat	IBM Watson Res. Center
Liu, Zhen	IBM Watson Res. Center
Wynter, Laura	IBM Watson Res. Center
Xia, Cathy	IBM Watson Res. Center

16:00
Optimal Linear Communication Compression in Multisensor Estimation Fusion, 5807

Zhu, Yunmin	Sichuan Univ.
Song, Enbin	Sichuan Univ.
Zhou, Jie	Sichuan Univ.
You, Zhisheng	Sichuan Univ.

16:20
Limiting Model of ECN/RED under a Large Number of Heterogeneous TCP Flows, 5813

Tinnakornsrisuphap, Peerapol	Univ. of Maryland, Coll. Park
La, Richard J.	Univ. of Maryland, Coll. Park

16:40
A Maximum Principle for Risk-Sensitive Control, 5819

Zhou, Xun Yu	Chinese Univ. of Hong Kong
Lim, Andrew	Univ. of California

FrP07 — Regency Boardroom
Nonlinear Estimation — Regular Session

Chair: Camacho, Eduardo F.	Univ. of Sevilla
Co-Chair: Zheng, Wei Xing	Univ. of Western Sydney

15:00
Receding-Horizon Estimation for Noisy Nonlinear Discrete-Time Systems, 5825

Alessandri, Angelo	National Res. Council of Italy
Baglietto, Marco	Univ. of Genova
Battistelli, Giorgio	Univ. of Genova
Parisini, Thomas	Univ. of Trieste

15:20
Guaranteed State Estimation by Zonotopes, 5831

Alamo, Teodoro	Univ. de Sevilla
Bravo, Jose Manuel	Huelva Univ. Spain
Camacho, Eduardo F.	Univ. of Sevilla

15:40
Remarks on Equivalence between Full Order and Reduced Order Nonlinear Observers, 5837

Shim, Hyungbo	Seoul National Univ.
Praly, Laurent	Ec. des Mines

16:00
Observer Linearization of Nonlinear Systems by Generalized Transformations, 5841

Guay, Martin	Queen's Univ.

16:20
Robust Output Feedback Stabilization and Nonlinear Observer Design, 5847

Karafyllis, Iasson	National Tech. Univ. of Athens
Kravaris, Costas	Univ. of Patras

16:40
Recent Results on Classification of Low Dimensional Estimation Algebras, 5853

Chiou, Wen-Lin	Fu-Jen Univ.
Chiueh, Woei-Ren	Fu-Jen Univ.
Yau, Stephen S.-T.	Univ. of Illinois at Chicago

FrP08 — Maui Suite 3
Robotics — Regular Session

Chair: Cheah, C.C.	Nanyang Tech. Univ.
Co-Chair: McIsaac, Kenneth Alexander	Univ. of Western Ontario

15:00
Approximate Jacobian Robot Control with Adaptive Jacobian Matrix, 5859

Cheah, C.C.	Nanyang Tech. Univ.

15:20
Transfer Matrices of Orthogonal Gough-Stewart Platforms, 5865

Jafari, Farhad	Univ. of Wyoming
McInroy, John E.	Univ. of Wyoming

15:40
An Hybrid Mapping Approach with Place Forgetting, 5871

Abreu, Antonio	ESTS/IPS
Correia, Luis	Departamento Informática. Faculdade de Ciências e Tecnologia. Un

16:00
Modified Newton's Method Applied to Potential Field Navigation, 5873

McIsaac, Kenneth Alexander	Univ. of Western Ontario
Ren, Jing	The Univ. of Western Ontario
Huang, Xishi	The Univ. of Western Ontario

16:20
A Biomimetic Apparatus for Sound Source Localization, 5879

Handzel, Amir A.	Univ. of Maryland
Andersson, Sean	Univ. of Maryland
Gebremichael, Martha	Univ. of Maryland
Krishnaprasad, P. S.	Univ. of Maryland

16:40
Optimal Filters from Task Velocities to Joint Velocities Including Both Position and Velocity Limits, 5885

McInroy, John E.	Univ. of Wyoming
Aphale, Sumeet	Univ. of Wyoming

FrP09 — Maui Suite 4
Motor Control Systems — Regular Session

Chair: Viassolo, Daniel	General Electric
Co-Chair: Mihalyov, Kenneth	Xerox Corp.

15:00
Current Waveform Optimization for Force Ripple Compensation of Linear Synchronous Motors, 5891

Roehrig, Christof	Univ. of Hagen

15:20
Discrete-Time Nonlinear Control Scheme for Synchronous Generator, 5897

De Leon-Morales, Jesus	FIME-UANL
Huerta-guevara, Oscar	Univ. Autonoma De Nuevo Leon
Dugard, Luc	CNRS-INPG
Dion, Jean-Michel	URA CNRS

15:40
Discrete-Time LPV Current Control of an Induction Motor, 5903

Bendtsen, Jan Dimon	Aalborg Univ.
Trangbaek, Klaus	Inst. of Electronic Systems Aalborg Univ. Denmark

16:00
A COMBINED Hoo/QFT CONTROL OF a ROTARY DRYER, 5909

Castaño, Fernando	School of Engineering, Univ. of Seville
Jiménez, Daniel	School of Engineering, Univ. of Seville
Rubio, F.R.	Univ. de Sevilla

16:20
Sensorless IPMSM Drive with EKF Estimation of Speed and Rotor Position, 5915

Kosaka, Manabu	Kin-ki Univ.
Uda, Hiroshi	Kin-ki Univ.

16:40
Field-Oriented Control of Induction Motors by Application of the Transverse Function Control Approach, 5921

Morin, Pascal	INRIA
Samson, Claude	INRIA Sophia-Antipolis

16:00
On Stability for Neutral Differential Systems with Multiple Time-Varying Delay Arguments, 6050

Yang, Bin	Dalian Univ. of Tech.
Li, Tao	Dalian Univ. of Tech.
Jian, Yanhong	Dalian Univ. of Tech.
Wang, Jincheng	Dalian Univ. of Tech.

16:20
Unknown Input Observers for Linear Delay Systems: A Geometric Approach, 6054

Perdon, Anna Maria	Univ. Pol. delle Marche
Conte, Giuseppe	Univ. Pol. delle Marche
Guidone Peroli, Giovanna	Univ. Pol. delle Marche

16:40
Finite Spectrum Assignment Controller for Teleoperation Systems with Time Delay, 6060

Fattouh, Anas	URA CNRS
Sename, Olivier	INPG

FrP14 — Guest Room 451
Geometric Methods for Nonlinear Systems — Regular Session

Chair: Fujimoto, Kenji	Kyoto Univ.
Co-Chair: Tabuada, Paulo	Univ. of Notre Dame

15:00
A Reachable Set Approach to Feedback Stabilization of Nonlinear Systems with Drift, 6066

Michalska, Hannah H.	McGill Univ.
Torres-Torriti, Miguel	McGill Univ.

15:20
Nonlinear Balanced Realization Based on Singular Value Analysis of Hankel Operators, 6072

Fujimoto, Kenji	Kyoto Univ.
Scherpen, Jacquelien M.A.	Delft Univ. of Tech.

15:40
System Immersion into a Locally Observable Polynomial-In-The-State Representation, 6078

Ohtsuka, Toshiyuki	Osaka Univ.

16:00
Jacobian Linearisation in a Geometric Setting, 6084

Lewis, Andrew D.	Queen's Univ.
Tyner, David	Queen's Univ.

16:20
Hierarchical Trajectory Generation for a Class of Nonlinear Systems, 6090

Tabuada, Paulo	Univ. of Notre Dame
Pappas, George J.	Univ. of Pennsylvania

16:40
Geometric Homogeneity and Controllability of Nonlinear Systems, 6096

Vela, Patricio A.	California Inst. of Tech.
Burdick, Joel W.	California Inst. of Tech.

FrE01 — Monarchy Ballroom
Linear Parameter Varying Methods — Regular Session

Chair: Sznaier, Mario	Penn State Univ.
Co-Chair: Allgower, Frank	Univ. of Stuttgart

17:20
Stabilization of LPV Systems, 6103

Bliman, Pierre-Alexandre J	INRIA-Rocquencourt

17:40
An Approach to Gain-Scheduled L_1-Optimal Control of Linear Parameter-Varying Systems, 6109

Rieber, Jochen M.	Univ. of Stuttgart
Allgower, Frank	Univ. of Stuttgart

18:00
Synthesis of Output Feedback Gain-Scheduling Controllers Based on Descriptor LPV System Representation, 6115

Masubuchi, Izumi	Hiroshima Univ.
Akiyama, Tomoaki	Hiroshima Univ.
Saeki, Masami	Hiroshima Univ.

18:20
Convex Necessary and Sufficient Conditions for Model (In)Validation under SLTV Structured Uncertainty, 6121

Mazzaro, Maria Cecilia	Pennsylvania State Univ.
Sznaier, Mario	Pennsylvania State Univ.

18:40
Gain-Scheduling of Minimax Optimal State-Feedback Controllers for Uncertain Linear Parameter-Varying Systems, 6127

Yoon, Myung-gon	The Univ. of New South Wales
Ugrinovskii, Valery	Australian Defence Force Acad.
Pszczel, Marek	Defence Science and Tech. Organisation

19:00
A New LMI Condition for the Robust Stability of Linear Time-Varying Systems, 6133

Montagner, Vinicius F.	Univ. of Campinas
Peres, Pedro L. D.	Univ. of Campinas

FrE02 — Regency A
Nonlinear Uncertain Systems — Regular Session

Chair: Khorrami, Farshad	Pol. Univ.
Co-Chair: Lin, Wei	Case Western Res. Univ.

17:40
Global Robust State-Feedback for Nonlinear Systems Via Dynamic High-Gain Scaling, 6139

Krishnamurthy, Prashanth	Pol. Univ.
Khorrami, Farshad	Pol. Univ.

18:00
Global Robust Control of Feedforward Systems: State-Feedback and Output-Feedback, 6145

Krishnamurthy, Prashanth	Pol. Univ.
Khorrami, Farshad	Pol. Univ.

18:20
Model-Based Control of Unstable, Non-Minimum-Phase, Nonlinear Processes, 6151

Panjapornpon, Chanin	Drexel Univ.
Soroush, Masoud	Drexel Univ.
Seider, Warren D.	Univ. of Pennsylvania

18:40
Adaptive Stabilization of Nonlinearly Parameterized Systemsby C^0 Partial-State Feedback, 6157

Lin, Wei	Case Western Res. Univ.
Pongvuthithum, Radom	Case Western Res. Univ.

19:00
On Measuring Closed-Loop Nonlinearity - a Vinnicombe Metric Approach, 6163

Tan, Guan Tien	Univ. of British Columbia
Huzmezan, Mihai	Univ. of British Columbia
Kwok, K. Ezra	Univ. of British Columbia

FrE03 — Regency B
Neural Networks Optimization — Regular Session

Chair: Wang, I-Jeng	Johns Hopkins Univ.
Co-Chair: Alessandri, Angelo	National Res. Council of Italy

17:20
A General Recurrent Neural Network Model for Time-Varying Matrix Inversion, 6169

Zhang, Yunong	National Univ. of Singapore
Ge, Shuzhi Sam	National Univ. of Singapore

17:40
An Adaptive RBFN-Based Filter for Adaptive Noise Cancellation, 6175

LI, Zhengrong	Nanyang Tech. Univ.
Er, Meng Joo	NTU
Gao, Yang	Nanyang Tech. Univ.

18:00
On the Convergence EKF-Based Parameters Optimization for Neural Networks, 6181

Alessandri, Angelo	ISSIA-CNR, Genova, Italy
Cuneo, Marta	ISSIA-CNR, Genova, Italy
Pagnan, Sergio	ISSIA-CNR, Genova, Italy
Sanguineti, Marcello	Univ. of Genova

18:20
Shortest Path Problems on Stochastic Graphs: A Neuro Dynamic Programming Approach, 6187

Baglietto, Marco	Univ. of Genova
Battistelli, Giorgio	Univ. of Genova
Vitali, Federico	Univ. of Genova
Zoppoli, Riccardo	Univ. of Genova

18:40
Robust Neural Network Tracking Controller Using Simultaneous Perturbation Stochastic Approximation, 6194

Song, Qing	Nanyang Tech. Univ.
Spall, James C.	Johns Hopkins Univ.
Soh, Yeng Chai	Nanyang Tech. Univ.

19:00
Inverse Optimal Design for Trajectory Tracking with Input Saturations Via Adaptive Recurrent Neural Control, 6200

Ricalde, Luis J.	CINVESTAV
Sanchez, Edgar N.	CINVESTAV

FrE04	Regency C
Modeling	**Regular Session**
Chair: Chiasson, John	Univ. of Tennessee
Co-Chair: Guinee, Richard A.	Cork Inst. of Tech.

17:20
Modeling, Simulation and Optimization of Commercial Naphtha Catalytic Reforming Process, 6206

Hu, Yongyou	Zhejiang Univ.
Su, Hongye	Zhejiang Univ.
Chu, Jian	Zhejiang Univ.

17:40
Modeling and Simulation of the Induction Motor with Position Dependent Load Torque, 6212

Delaleau, Emmanuel	Univ. Paris-sud
Stankovic, Aleksandar M.	Northeastern Univ.

18:00
A Model for Impact Dynamics and Its Application to Frequency Analysis of Tapping-Mode Atomic Force Microscopes, 6218

Materassi, Donatello	Univ. di Firenze
Basso, Michele	Univ. di Firenze
Genesio, Roberto	Univ. di Firenze

18:20
Piecewise Linear Systems in Economic Models, 6224

Martinez, Alfredo	California Inst. of Tech.

18:40
A Novel Modulated Single Fourier Series Time Function for Mathematical Modelling and Simulation of Natural Sampled Pulse Width Modulation in High Performance Brushless Motor Drives, 6230

Guinee, Richard A.	Cork Inst. of Tech.
Lyden, Colin	c/o National Microelectronics Res. Centre, Univ. Coll.

19:00
Analysis of the Semilinear Duhem Model for Rate-Independent Hysteresis, 6236

Oh, JinHyoung	Univ. of Michigan
Bernstein, Dennis S.	Univ. of Michigan

FrE05	Maui Suite 1
Switched Systems III	**Regular Session**
Chair: Peres, Pedro L. D.	Univ. of Campinas
Co-Chair: higuchi, kohji	The Univ. of Electro-Communications

17:20
Discrete-Time Switched Systems: Pole Location and Structural Constrained Control, 6242

Montagner, Vinicius F.	Univ. of Campinas
Leite, Valter J. S.	CEFET/MG - UnED Div.
Peres, Pedro L. D.	Univ. of Campinas

17:40
Robust Digital Control of PWM Power Amplifier by Approximate 2-Degree-Of-Freedom System with Bumpless Mode Switching, 6248

Higuchi, Kohji	The Univ. of Electro-Communications
Nakano, Kazushi	The Univ. of Electro-Communications
Kajikawa, Tatsuyoshi	The Univ. of Electro-Communications
Araki, Kuniya	NF Corp.
Chino, Fumiho	NF Corp.

18:00
Suboptimal Switched Control in Context of Singular Arcs, 6254

Riedinger, Pierre	CRAN
Daafouz, Jamal	CRAN -INPL
Iung, Claude	CRAN

18:20
Adaptive Control of Switched Systems, 6260

Cheng, Daizhan	Chinese Acad. of Sciences
zhang, Lijun	Chinese Acedamy of Science

18:40
New Results on Stabilizability of Switched Linear Systems, 6265

Xie, Guangming	Peking Univ.
Wang, Long	Peking Univ.

19:00
Reachability of Switched Linear Impulsive Systems, 6271

Xie, Guangming	Peking Univ.
Wang, Long	Peking Univ.

FrE06	Maui Suite 2
Stochastic Discrete-Event Systems and Markov Processes	**Regular Session**
Chair: Cassandras, Christos G.	Boston Univ.
Co-Chair: Krishnamurthy, Vikram	Univ. of British Columbia

17:20
Perturbation Analysis of Feedback-Controlled Stochastic Flow Systems, 6277

Yu, Haining	Boston Univ.
Cassandras, Christos G.	Boston Univ.

17:40
State-Feedback Control of Markov Chains with Safety Bounds, 6283

Arapostathis, Ari	Univ. of Texas at Austin
Kumar, Ratnesh	Iowa State Univ.
Hsu, Shun-Pin	Univ. of Texas at Austin

18:00
Diagnosability of Stochastic Automata, 6289

Thorsley, David	Univ. of Michigan
Teneketzis, Demosthenis	Univ. of Michigan

18:20
Multi-Function Radar Emitter Modelling: A Stochastic Discrete Event System Approach, 6295

Visnevski, Nikita	McMaster Univ.
Krishnamurthy, Vikram	Univ. of British Columbia
Haykin, Simon	McMaster Univ.
Currie, Brian	McMaster Univ.
Dilkes, Fred	Defence R&D Canada
Lavoie, Pierre	Defence R&D Canada

18:40
Strategic Reconfigurability in Air Operations, 6301

Wu, Neng Eva	Binghamton Univ.
Busch, Timothy	AFRL

19:00
Online Identification of Language Measure Parameters for Discrete Event Supervisory Control, 6307

Wang, Xi	Penn State Univ.
Ray, Asok	Pennsylvania State Univ.
khatkhate, Amol	The Pennsylvania State Univ.

FrE07	**Regency Boardroom**
Applications of Estimation	**Regular Session**
Chair: Stankovic, Alex M.	Northeastern Univ.
Co-Chair: Ghosh, Bijoy	Professor

17:20
Stochastic Approximation for Optimal Observer Trajectory Planning, 6313

Singh, Sumeetpal	Univ. of Melbourne
Vo, Ba-Ngu	Univ. of Melbourne
Doucet, Arnaud	Cambridge Univ.
Evans, Robin J.	Univ. of Melbourne

17:40
Nonlinear Observers for Perspective Time-Invariant Linear Systems, 6319

Abdursul, Rixat	Tokyo Denki Univ.
Inaba, Hiroshi	Tokyo Denki Univ.
Ghosh, Bijoy	Washington Univ.

18:00
A Low-Power Filtering Scheme for Distributed Sensor Networks, 6325

Wolfe, Jonathan D.	Univ. of California at Los Angeles
Speyer, Jason L.	Univ. of California at Los Angeles

18:20
Kalman Filter-Based Estimation of Short-Time Fourier Coefficients in Energy Applications, 6327

Stankovic, Alex M.	Northeastern Univ.
Lev-Ari, Hanoch	Northeastern Univ.
Perisic, Milun	Northeastern Univ.

18:40
Highway Traffic State Estimation Using Improved Mixture Kalman Filters for Effective Ramp Metering Control, 6333

Sun, Xiaotian	Univ. of California at Berkeley
Munoz, Laura	Univ. of California at Berkeley
Horowitz, Roberto	Univ. of California at Berkeley

19:00
Multiuser Detection with Joint Channel Estimation for Asynchronous CDMA Flat Rayleigh Fading Channels, 6339

Pham, David	Univ. of Connecticut
Pattipati, Krishna R.	Qualtech Systems, Inc.
Willett, Peter K.	Univ. of Connecticut

FrE08	**Maui Suite 3**
Mechanical Systems and Robotics	**Regular Session**
Chair: Menini, Laura	Univ. di Roma 'Tor Vergata'
Co-Chair: Tornambe, Antonio	Univ. Di Roma Tor Vergata

17:20
Regulation of 1DOF Linear Mechanical Systems to a Contact Configuration for Smooth or Non-Smooth Impacts, 6345

Galeani, Sergio	Univ. Di Roma Tor Vergata
Menini, Laura	Univ. di Roma Tor Vergata
Tornambe, Antonio	Univ. Di Roma Tor Vergata

17:40
Dynamical Systems with Controlled Singularities: Physically-Based Representation and Control-Oriented Modeling, 6351

Bentsman, Joseph	Univ. of Illinois at Urbana-Champaign
Miller, Boris	Russian Acad. of Science, Inst. of Information Transmissio

18:00
First and Second Order Necessary Conditions of Optimality for Impulsive Control Problems, 6357

Arutyunov, Aram V.	Russian Peoples Friendship Univ.
Dykhta, Vladimir	Irkutsk State Ec. Acad.
Pereira, Fernando Lobo	Porto Univ. Inst. For Systems & Robotics

18:20
FEL and JIT Approaches to Tracking Adaptive Control Based on the Internal Inverse Models, 6363

Ushida, Shun	Univ. of Tokyo
Kimura, Hidenori	Univ. of Tokyo

18:40
Model-Based Control and Object Contact Detection for a Fluidic Actuated Robotic Hand, 6369

Beck, Sebastian	Forschungszentrum Karlsruhe
Mikut, Ralf	Forschungszentrum Karlsruhe
Lehmann, Arne	Forschungszentrum Karlsruhe
Bretthauer, Georg	Forschungszentrum Karlsruhe

19:00
Sensor-Based Navigation Coordination for Mobile Robots, 6375

Hu, Xiaoming	Royal Inst. of Tech.
Fuentes, David	/
Gustavi, Tove	Royal Inst. of Tech.

FrE09	**Maui Suite 4**
Noise and Vibration Control	**Regular Session**
Chair: Pao, Lucy Y.	Univ. of Colorado
Co-Chair: Laila, Dina Shona	Imperial Coll. London

17:20
Feedback Control and Acoustical Energy in Active Noise Control, 6381

Pota, Hemanshu R.	Univ. Coll. Univ. of New South Wales
He, Bingrong	Kansas State Univ.

17:40
Robust Vibration Control of Structures Simulations and Experiments, 6386

Ma, Kougen	Univ. of Hawaii at Manoa
Melcher, Joerg	German Aerospace Center

18:00
Feedforward Noise Cancellation in an Airduct Using Generalized FIR Filter Estimation, 6392

de Callafon, Raymond A.	Univ. of California, San Diego
Zeng, Jie	Univ. of California, San Diego

18:20
Robust Lyapunov-Based Feedback Control of Nonlinear Web-Winding Systems, 6398

Baumgart, Matthew	Univ. of Colorado
Pao, Lucy Y.	Univ. of Colorado

18:40
Integrated Design of Discrete-Time Controller for an Active Suspension System, 6406

Laila, Dina Shona	The Univ. of Melbourne

19:00
Location and Coverage of Enhanced Self-Sensing Piezoelectric
Actuators for Active-Passive Hybrid Vibration Control of Beam
Structures, 6412
    Liao, Wei-Hsin   The Chinese Univ. of Hong Kong
    Gao, Jianxin   The Chinese Univ. of Hong Kong

FrE10	Guest Room 350
Biological and Biomedical Systems	**Regular Session**
Chair: Ghosh, Bijoy	Professor
Co-Chair: Ramos, Jose A.	Purdue Univ. at Indianapolis

17:20
Modeling the Dynamics of Oculomotor System in Three
Dimensions, 6418
    Polpitiya, Ashoka   Washington Univ.
    Ghosh, Bijoy   Washington Univ.

17:40
Information-Theoretic Analysis of Turtle Cortical Waves, 6423
    Du, Xiuxia   Washington Univ. in St. Louis
    Ghosh, Bijoy   Professor

18:00
Generation and Control of Propagating Waves in the Visual
Cortex, 6429
    Ulinski, Philip   Univ. of Chicago
    wang, wenxue   Washington Univ.
    Ghosh, Bijoy   Professor

18:20
A Total Least Squares Approach for Data Reduction of Longterm
ECG Recordings, 6435
    Ramos, Jose A.   Purdue Univ. at Indianapolis
    Paul, Joseph Suresh   National Univ. of Singapore

18:40
Controllability Issues in Flapping Flight for Biomimetic Micro Aerial
Vehicles (MAVs), 6441
    Schenato, Luca   Univ. of California at Berkeley
    Campolo, Domenico   Univ. of California, Berkeley
    Sastry, Shankar   Univ. of California at Berkeley

19:00
Separation of Bioparticles Using the Travelling Wave
Dielectrophoresis with Multiple Frequencies, 6448
    Chang, Dong Eui   Univ. of California, Santa Barbara
    Loire, Sophie   Univ. Bordeaux I
    Mezic, Igor   Univ. of California, Santa Barbara

FrE11	Guest Room 351
Stability of Linear Systems	**Regular Session**
Chair: Najson, Federico	Univ. of California at Los Angeles
Co-Chair: Chadli, Mohammed	CRAN-INPL-CNRS, UMR 7039

17:20
Stability Analysis of a Class of Multidimensional Systems, 6454
    Chu, Tianguang   Peking Univ.
    Zhang, Cishen   Nanyang Tech. Univ.
    Xie, Lihua   Nanyang Tech. Univ.
    Soh, Yeng Chai   Nanyang Tech. Univ.

17:40
On the Stability Analysis of a Class of Multiple Models, 6458
    Chadli, Mohammed   CRAN-INPL-CNRS, UMR 7039
    Maquin, Didier   CRAN-INPL
    Ragot, Jose   CRAN-INPL

18:00
Convex Directions for Nested Hurwitz Polynomials, 6460
    An, Senjian   The Univ. of Melbourne
    Liu, Wan Quan   Curtin Univ. of Tech.
    Manton, Jonathan H.   Univ. of Melbourne

18:20
Preservation of Fundamental Properties in N-D Systems Using
S_{n} Functions, 6462
    Fernandez-Anaya, Guillermo   Univ. Iberoamericana
    Torres-Munoz, Jorge A.   CINVESTAV-IPN
    Kharitonov, V.L.   CINVESTAV-IPN

18:40
Stabilization Via Output Static Feedback in Discrete-Time Linear
Systems, 6466
    Najson, Federico   Univ. of California at Los Angeles
    Speyer, Jason L.   Univ. of California at Los Angeles

19:00
Characterization of Standrad Controllers Satisfying Given
H_infinity Specifications, 6474
    Blanchini, Franco   Univ. degli Studi di Udine
    Miani, Stefano   Univ. degli Studi di Udine
    Viaro, Umberto   Univ. of Udine
    Lepshcy, Antonio   Univ. of Padova

FrE12	Maui Suite 5
Practical System Identification	**Regular Session**
Chair: Nounou, Mohamed	United Arab Emirates Univ.
Co-Chair: Lacy, Seth L.	Air Force Res. Lab.

17:20
Empirical Bayesian Finite Impulse Response Modeling, 6480
    Nounou, Mohamed   United Arab Emirates Univ.

17:40
Finite-Horizon Input Selection for System Identification, 6485
    Lacy, Seth L.   Air Force Res. Lab.
    Bernstein, Dennis S.   Univ. of Michigan
    Erwin, Richard Scott   Space Vehicles Directorate

18:00
LTI Systems, Additive Noise, and Order Estimation, 6491
    Beheshti, Soosan   Massachusetts Inst. of Tech.
    Dahleh, Munther A.   Massachusetts Inst. of Tech.

18:20
On Optimal Input Design in Conditional Set Membership
Identification, 6497
    Casini, Marco   Univ. of Siena
    Garulli, Andrea   Univ. di Siena
    Vicino, Antonio   Univ. di Siena

18:40
Robust Estimation of Parallel Robot Dynamic Parameters with
Interval Analysis, 6503
    Poignet, Philippe   Univ. Montpellier 2
    Ramdani, Nacim   Univ. Paris XII
    Vivas, A.   Univ. Montpellier 2

19:00
Model Validation in L-1 Using Frequency-Domain Data, 6509
    Chen, Jie   Univ. of California at Riverside
    Liu, Wenguo   Univ. of California

FrE13	Guest Room 450
Preview and Filtering in Time-Delay Systems	**Regular Session**
Chair: Tadmor, Gilead	Northeastern Univ.
Co-Chair: Kojima, Akira	Tokyo Metro. Inst. of Tech.

17:20
H-Inf Preview Control and Fixed-Lag Smoothing I: Matrix ARE
Solutions in Continuous-Time Systems, 6515
    Tadmor, Gilead   Northeastern Univ.
    Mirkin, Leonid   Tech.

17:40
H-Inf Preview Control and Fixed-Lag Smoothing II: Fixed Sized
ARE Solutions in Discrete-Time Systems, 6521
    Tadmor, Gilead   Northeastern Univ.
    Mirkin, Leonid   Tech.

18:00
H-Inf Preview Control and Fixed-Lag Smoothing III: H-Inf
Discretization, 6527

Mirkin, Leonid	Tech.
Tadmor, Gilead	Northeastern Univ.

18:20
Formulas on Preview and Delayed H-Infinity Control, 6532

Kojima, Akira	Tokyo Metro. Inst. of Tech.
Ishijima, Shintaro	Tokyo Metro. Inst. of Tech.

18:40
Optimal Design of Fractional Delay Filters, 6539

Nagahara, Masaaki	Kyoto Univ.
Yamamoto, Yutaka	Kyoto Univ.

19:00
Delay-Dependent Robust Kalman Filtering for Interval Systems
with Time Delay, 6545

Su, Te-Jen	National Kaohsiung Univ. of Applied Sciences

FrE14	**Guest Room 451**
Control of Large-Scale Systems	**Regular Session**
Chair: Mestha, Lalit K.	Xerox Corp.
Co-Chair: Wang, Sheng-Guo	Univ. of North Carolina at Charlotte

17:20
Using Dynamic Optimization for Control of Real Rate CPU
Resource Management Applications, 6547

Vahia, Varin	Oregon State Univ.
Goel, Ashvin	Univ. of Toronto
Walpole, Jonathan	Oregon Health & Sciences Univ.
Shor, Molly H.	Oregon State Univ.

17:40
Multi-Dimensional Gain Scheduling with Application to Power Plant
Control, 6553

Bendtsen, Jan Dimon	Aalborg Univ.
Stoustrup, Jakob	Aalborg Univ.
Trangbaek, Klaus	Aalborg Univ.

18:00
On the Application of Predictive Functional Control in Steam
Temperature Systems of Thermal Power Plant, 6559

Han, Pu	North China Electric Power Univ.
Wang, Guoyu	North China Electric Power Univ.
Wang, Dongfeng	North China Electric Power Univ.

18:20
Some Nonlinear Controls for Nonlinear Processes in the DIII-D
Tokamak, 6565

Walker, M.L.	General Atomics
Humphreys, D.A.	General Atomics
Schuster, E.	Univ. of California, San Diego

18:40
LQG-Alpha Control and Its Simulations for Structural Benchmark
Problems against Winds and Earthquakes, 6572

Wang, Sheng-Guo	Univ. of North Carolina at Charlotte

19:00
Nonlinear Control of a Planar Mangetic Levitation System, 6578

Levis, Michel	Univ. of Toronto
Maggiore, Manfredi	Univ. of Toronto