MED'03 Conference
Welcome Messages
&
MCA Information

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General Chair Welcome Message

Dear Colleagues, conference participants and guests,

Welcome (in Greek "*Καλώς Ήρθατε*") to the ***11th Mediterranean Conference on Control and Automation***.

Welcome to Greece and to the beautiful island of Rhodes, which is located at the crossroads of two continents, Europe and Asia. Rhodes offers a unique experience in a fascinating atmosphere including ancient Greek monuments, a medieval castle, charming small villages, delicious food and vine, great hospitality and beautiful beaches.

We are very happy and fortunate to see this annual event grow so fast both in size and technical strength. What started in the very early 1990's as a small - mainly regional - meeting in Crete, has become a self-financed Conference that has taken place in several countries around the Mediterranean. During the last few years, the number of submitted – not invited - papers has exceeded 300, which is twice as many papers as those submitted in the early to mid 1990's.

We are confident that the technical program and the Workshops and Tutorials will provide a unique opportunity for the academic and industrial community to address new challenges, share solutions and discuss future research directions in control and automation.

This year's Conference is partially sponsored by the Mediterranean Control association (MCA), the European Union (project ADACIE), EADS-3SIGMA S.A., Technical University of Crete and National Technical University of Athens. It is also supported by the University of Zagreb and the University of Texas at Arlington. The IEEE Robotics and Automation Society and The IEEE Control Systems Society are technical sponsors, too.

We would like to thank all the Organizing Committee members, the International Committee Members, the reviewers, our students the hotel personnel and Ms. Dina Fragethaki from the TUC Office of Sponsored Research for working hard to make this a successful meeting.

Enjoy the Conference, but also find some free time to relax and tour the island.

With our warmest regards,

Kimon Valavanis and Frank Lewis

Conference General Chairs

Program Chair Welcome Message

Dear colleagues,

It may be unbelievable, but this is the 11th Mediterranean Conference on Control and Automation! Moving around the Mediterranean region, this year the Conference returns to its birth place, Greece. Our host is the beautiful island of Rhodes. When mentioning Rhodes, the first think that comes to mind is the Colossus - one of the Seven Wonders of the World. Still, the Colossus is only one of the facts associated with Rhodes. As George Sarton, science historian wrote, "The role played by Rhodes in Hellenistic age has been compared with that of the Republic of Venice in the sixteenth and seventeenth centuries". And indeed, thanks to Andronicos of Rhodes we may enjoy in the writings of Aristotle; without Eudemos of Rhodes, the first historian of mathematics and astronomy, many of pre-Euclidean knowledge would be lost maybe forever. And there are many others. With all that in mind, Rhodes seems as a perfectly chosen place for a scientific meeting.

This year we have received more than 260 submissions from 48 countries. 215 regular papers have been accepted for presentation in 40 sessions. I am taking this opportunity to thank all reviewers for their valuable evaluations that were crucial in decisions regarding paper acceptance or rejection.

The scientific program also includes 12 Invited Sessions, with 66 papers, organized by well-known scientists. I highly appreciate efforts put in organizing all invited sessions.

The MED'03 has four Plenary Speakers; Prof. Panos J. Antsaklis will give a keynote on Control of Networked Embedded Systems; Prof. Gerd Hirzinger will talk about Advances in Robotics and Mechatronics - from Space to Surgery; Prof. Manfred Morari will address Hybrid Systems - A Control Engineering Perspective and Prof. Shankar S. Sastry will give a keynote on Control of Networks of Unmanned Vehicles.

I hope that during the meeting all of us will have an opportunity to learn something new, to meet old friends and acquire new ones. I also hope that the MED conference will continue to grow and that we all meet again next year in Turkey.

I am misusing the privilege of being the program chair of the 11th Mediterranean Conference on Control and Automation to wish you all the best, get inspired by the beautiful island of Rhodes and enjoy the Conference!

Stjepan Bogdan

Conference Program Chair

MCA's President Welcome Message

The MED'03 conference this year in Rhodes, Greece, is the 11th Mediterranean Conference on Control and Automation. Ever since the 1st MED conference in 1993, there has been strong and continuing interest in the MED conferences on control and automation and the success of recent conferences, including the present one in Rhodes bears witness to this fact. I must say that attendees as well as organizations do appreciate the value and contributions to the profession of the MED conferences. I am very pleased therefore to announce that both the MED'02 and MED'03 have received significant amount of funding from the European Union to continue promoting control in the Mediterranean region. This is a clear indication of the significance and impact the MED conferences enjoy in the area of control and automation.

The MED conference has been technically co-sponsored since its beginnings by the IEEE Control Systems Society and the IEEE Robotics and Automation Society and it has consistently kept its high quality standards both in the technical program and the conference organization. This is primarily due to the authors who submit technically sound papers and to the tremendous effort of all the volunteers involved in the organization of the conferences, and I would like to take this opportunity to thank them for their time and wonderful work.

I hope you enjoy MED'03 and your stay in Rhodes. In 2004 the MED'04 will go to Kusadasi- Ephesus in Turkey and I hope to see you there as well.

Panos Antsaklis, President

Mediterranean Control Association

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The Mediterranean Control Association (MCA)

The Mediterranean conferences on control and automation are sponsored by the Mediterranean Control Association (MCA). The interests of MCA are in the broad technical fields of Systems, Control and Automation. MCA was founded in June 1998 to promote initiatives for enhancing scientific exchanges, to disseminate information, to coordinate research networks, and to facilitate technology transfer primarily within the countries of the Mediterranean region. Its main functions are the coordination and supervision of the Mediterranean Conference on Control and Automation (MCCA or MED) and the dissemination of information primarily via electronic means. MCA also awards annually the Ktesibios Award. Details of this award and of its recipients are given below.

Several people worked hard over the years to establish this conference as an annual event. The idea of having a Mediterranean conference in control was conceived and shaped in the Spring of 1992, and was formalized by the approval of technical sponsorship of the first Mediterranean Symposium by the IEEE Control Systems Society at the 1992 ACC in late June. The first Mediterranean conference (called Symposium at the time) was organized in Crete, Greece in 1993. The conferences from 1993 to 1997 took place mainly in Greece, Crete and Patras and in Cyprus before spreading to other countries. Drs. M. Christodoulou, P. Antsaklis, F. Lewis, K. Valavanis, P. Groumpos and P. Ioannou, formed the steering committee for these initial conferences. In June 1998 the steering committee members decided to found a parent organization named the Mediterranean Control Association (MCA).

The MCA is governed by an Executive Board headed by the MCA President. In 2003 the board members were: Panos Antsaklis, Theodore Djaferis, Petros Ioannou, Frank Lewis, Peter Groumpos, Manolis Christodoulou, Giusepe Conte, Zalman Palmor, Joao Sentieiro, Kimon Valavanis, Zoran Vukic. Panos Antsaklis was the President; Peter Groumpos and Kimon Valavanis were the two Vice Presidents, all serving in these positions since the founding of the Mediterranean Control Association in 1998.

Please see the web site http://www.nd.edu/~pantsakl/MCA/ for more details regarding the MCA and the MED conferences in Control and Automation.

The Ktesibios Award of the Mediterranean Control Association

The Mediterranean Control Association awards annually the Ktesibios award. Ktesibios, who lived in a great city, Alexandria of Egypt on the Mediterranean coast in the 3rd century B.C., was the inventor of the first feedback control mechanism on record. The Ktesibios Award has been established to recognize exceptional contributions to theory, design, or practice, in the areas of systems, control or automation. Not only should these contributions be outstanding, but sustained over a long period of time. The recipient should also have a demonstrated record of scientific and professional activities that have directly impacted countries of the Mediterranean region. The Award is presented annually on recommendation of the MCA

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Awards Board and consists of a silver replica of a "Kantharos"-an ancient drinking vessel. The Ktesibios award was first awarded in 2000.

Snapshot of the Ktesibios Award

Ktesibios of Alexandria

Ktesibios, also spelled Ctesibius, was a 3rd Century BC Greek physicist and inventor, the first great figure of the ancient engineering tradition of Alexandria, Egypt. The discovery of the elasticity of air is attributed to Ktesibios, as is the invention of several devices using compressed air, including force pumps and an air-powered catapult. His most famous invention, however, was an improvement of the clepsydra, or water clock, in which water dripping at a constant rate raised a float that held a pointer to mark the passage of the hours. This is considered to be the first example of a feedback control device on the historical record. Another notable invention of his was the hydraulis, the earliest known mechanical pipe organ, in which air was forced through the organ pipes by the weight of water rather than by falling lead weights. Ktesibios' writings have not survived, and his inventions are known only from references to them by Vitruvius and Hero of Alexandria, but he laid the foundations for the engineering tradition that culminated in the works of Hero of Alexandria and of Philo of Byzantium.

Recipients Of The Ktesibios Award

2003

The recipient of the 2003 Ktesibios Award will be announced at the award ceremony of MED'03 in Rhodes. Presentation of the Award will be made by the MCA President.

2002

The recipient of the 2002 Ktesibios Award was Professor Michael Athans of Portugal and the USA, from the Instituto Superior Tecnico (IST) of Lisbon and of the Massachusetts Institute of Technology (MIT) of Cambridge, Massachusetts in recognition of a truly exceptional record of achievement in Systems, Control and Automation and of professional contributions that have impacted the countries of the Mediterranean region and the world for several decades. The winner of the 2002 award was announced at the MED'02 in Lisbon, Portugal and was presented

to Michael Athans by the MCA President. Below please find a brief biographical sketch of Michael Athans.

A brief Biographical Sketch: Michael Athans (formerly Athanasiadis) is Professor Emeritus, Dept. of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, Mass. USA and Visiting Research Professor, Instituto de Sistémas e Robótica, Instituto Superior Técnico, Lisbon, Portugal.

Michael Athans was born in Drama, Greece on May 3, 1937. He attended the University of California at Berkeley from 1955 to 1961 where he received his BSEE in 1958 (with highest honors), MSEE in 1959 and Ph.D. in control in 1961.

From 1961 to 1964 he was employed as a member of the technical staff at the MIT Lincoln Laboratory, Lexington, Mass. where he conducted research in optimal control and estimation theory. From 1964, till his early retirement in 1998, he was a faculty member in the MIT Electrical Engineering and Computer Sciences department, where he held the rank of Professor. He also was the director of the MIT Laboratory for Information and Decision Systems (LIDS) from 1974 to 1981. He acted as the thesis supervisor for 41 MIT doctoral students and over 80 Master´s students. In 1978 he co-founded ALPHATECH Inc., Burlington, Mass., where he serves as Vice-Chairman of the Board of Directors. He has also consulted for numerous other industrial organizations and government panels. In 1995 he was Visiting Professor in the Department of Electrical and Computer Engineering at the National Technical University of Athens, Greece. In 1997 and since 1998 he is a Visiting Research Professor in the Institute for Systems and Robotics, Instituto Superior Técnico, Lisbon, Portugal.

Dr. Athans is the co-author of *Optimal Control* (McGraw Hill, 1966), *Systems, Networks and Computation: Basic Concepts* (McGraw Hill, 1972) and *Systems, Networks and Computation: Multivariable Methods* (McGraw Hill, 1974). In 1974 he developed 65 color TV lectures and study guides on *Modern Control Theory* ; these are distributed by the MIT Center for Advanced Engineering Study. In addition he has authored or co-authored over 325 technical papers and reports. His research interests and contributions span the areas of optimum system and estimation theory, multivariable control systems, and the application of these methodologies to defense, large space structures, IVHS transportation systems, aerospace, marine, automotive, power, manufacturing, economic, and military C3 systems. His latest research interests focus on dynamic models of the human immune system.

In 1964 he was the first recipient of the American Automatic Control Council's *Donald P. Eckman Award* " for outstanding contributions to the field of automatic control ". In 1969 he was the first recipient of the *Frederick E. Terman Award* of the American Society for Engineering Education as " the outstanding young el ectrical engineering educator ." In 1980 he received the second *Education Award* of the American Control Council for his "outstanding contributions and distinguished leadership in automatic control education." In 1973 he was elected Fellow of the IEEE and in 1977 Fellow of the AAAS. In 1983 he was elected Distinguished Member of the IEEE Control Systems Society. He received *the 1993 H.W. Bode Prize* from the IEEE Control Systems Society, which also included the delivery of the prestigious Bode Plenary Lecture at the 1993 IEEE Conference on Decision and Control. His

latest award is the *Richard E. Bellman Control Heritage Award* of the American Automatic Control Council " In Recognition of a Distinguished Career in Automatic Control; As a Leader and Champion of In novative Research; As a Contributor to Fundamental Knowledge in Optimal, Adaptive, Robust, Decentralized and Distributed Control; and as a Mentor to his Students " presented in June 1995 at the American Control Conference. In 1996 he was awarded honorary doctorates from the National Technical University of Athens, Greece, and from the Technical University of Crete, Chania, Crete, Greece.

Professor Athans has served in numerous committees of IEEE, IFAC, AACC and AAAS; he was president of the IEEE Control Systems Society from 1972 to 1974. In addition he is a member of AIAA, Phi Beta Kappa, Eta Kappa Nu, and Sigma Xi. He has served as Associate Editor of the IEEE Trans. on Automatic Control, Journal of Dynamic Systems and Control, and the IFAC journal "Automatica."

2001

The recipient of the 2001 Ktesibios Award was Professor Spyros Tzafestas of Greece, from the National Technical University of Athens for his outstanding record of achievement and his professional activities that have directly impacted countries of the Mediterranean region for more than three decades.

2000

The 2000 Ktesibios Award recipient was:Professor Alberto Isidori of Italy from the Universita Di Roma "La Sapienza" for fundamental scientific results in the area of nonlinear control that have greatly influenced the development of control theory in the Mediterranean and the world.

The List of The MED Conference on Control and Automation

10th IEEE Mediterranean Conference on Control and Automation

July 9-13 2002, Lisbon, Portugal

http://www.isr.ist.utl.pt/med2002/
General Chair: Joao J.S. Sentieiro
Program Chair: Michael Athans
Program Vice-Chair: Antonio Pascoal
Publicity: Joao Paulo Costeira
Publications: Jose Santos-Victor
Registration: Pedro Lima
Finances: Rita Almeida Ribeiro
Local Arrangements: M. Isabel Ribeiro

9th IEEE Mediterranean Conference on Control and Automation

June 27-29, 2001, Hotel Excelsior, Dubrovnik, Croatia

http://med01.rasip.fer.hr/
General Co-Chairs: Zoran Vukic and Kimon P. Valavanis
Program Co-Chairs: Zdenko Kovacic and Kostas J. Kyriakopoulos
Publicity Co-Chairs: Stjepan Bogdan and Maja Matijasevic
Registration Chair: Denis Gracanin
Publication Chair: Zeljko Ban
Finance Chair: Nedjeljko Peric
Local Arrangements: Mario Kovac and Dario Matika

8th IEEE Mediterranean Conference on Control and Automation

July 17-19, 2000, University of Patras, Rio, Greece

http://www.lar.ee.upatras.gr/med2000/
General Chair: Peter P. Groumpos
General Co-Chair: Panos Antsaklis
Program Chair: Nick T. Koussoulas
Workshops, Tutorials and Publicity: A. Alexandridis
Publication Chair: T. Pimenides
Finance Chair: Stamatis Manesis
Local Arrangements: Anthony Tzes

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7th IEEE Mediterranean Conference on Control and Automation

June 28-30, 1999, Dan Panorama Hotel, Haifa, Israel

General Chair: Zalman J. Palmor
General Co-Chair : Howard Kaufman
Program Chair: Arie Feuer

6th IEEE Mediterranean Conference on Control and Automation

June 9-11, 1998, Hotel Carlos V, Alghero, Sardinia, Italy

General Chair: Antonio Tornambe
Program Chair: Giuseppe Conte
Publications Chair: Anna Maria Perdon

5th IEEE Mediterranean Conference on Control and Systems

July 21-23, 1997, Phaethon Beach Hotel Club, Paphos, Cyprus

http://www.ecs.umass.edu/ece/djaferis/5thMED/
General and Program Chair: Theodore E. Djaferis
Finance and Special Events Chair: Petros Ioannou
Publicity Chair: Vassilis Syrmos
Local Arrangements and Technical Sessions Chair: Paraskevas Evripidou

4th IEEE Mediterranean Symposium on Control and Automation

June 10-13, 1996, Louis Maleme Beach Hotel, Chania, Crete, Greece

Honorary Chair: Panos J. Antsaklis
General Chair: Frank L. Lewis
General Co-Chairs: Petros P. Groumpos and Paris N. Paraskevopoulos
Program Co-Chairs: Kostas Kyriakopoulos and Petros G. Voulgaris
Local Arrangements: George Stavrakakis
Publicity Chair: Denis Gracanin
Publications Chair: Nick T. Koussoulas

3rd IEEE Mediterranean Symposium on Control and Automation

July 11-13, 1995, Sheraton Hotel, Limassol, Cyprus

General Chair: Petros A. Ioannou
Program Chair: Frank L. Lewis

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2nd IEEE Mediterranean Symposium on New Directions in Control and Automation

June 19-21, 1994, Louis Maleme Beach Hotel, Chania, Crete, Greece

Honorary Chair: George N. Saridis
General Chair: Kimon P. Valavanis
Program Chair: Frank L. Lewis
Special Sessions & Tutorials Chair: Kostas Kyriakopoulos
Local Arrangements: George Stavrakakis
Publications Chair: Nickolas T. Koussoulas

1st IEEE Mediterranean Symposium on New Directions in Control Theory and Applications

June 21-23, 1993, Handris Hotel, Maleme, Chania, Crete, Greece

General and Program Chair: Manolis A. Christodoulou
Program co-Chair: Petros Ioannou
Organizing Committee: M. Christodoulou, E. Kosmatopoulos, V. Leftheris, N. Kaloupsidis, G. Rovithakis, K. Papadoyianni, A. Vardulakis, I. Leftheris.

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