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South African Council for Automation and Computation
IFAC TC 2.3 Non-Linear Control Systems
IFAC TC 2.1 Control Design
IFAC TC 2.4 Optimal Control
IFAC TC 6.2 Chemical Process Control
IEEE Control Systems Society - Technical Committee on
Nonlinear Systems & Controls

VENUE

A relatively small city, Pretoria lies about 50km north of Johannesburg and is approximately three degrees warmer than its southern cousin. Although largely a government-based city, it is also a place of culture, with theatres, museums and monuments. Greater Pretoria is a city of science and technology, knowledge and industry in the true sense of the word. As the academic, scientific and technological capital of South Africa, the city has the most highly developed technology and research sector in Africa. Four universities and a number of scientific institutes, including the Council for Scientific and Industrial Research (CSIR) and the Onderstepoort Veterinary Research Institute, both internationally respected. Jacarandas throw a blanket of mauve over this relaxed city. Pretoria boasts superb shopping centres, museums, art galleries and restaurants. There is also an abundance of open spaces – Pretoria has more than 100 parks, including bird sanctuaries and nature reserves. The Pretoria National Botanical Gardens offer more than 5,000 indigenous plant species. See www.tourism.org.za for further details about South Africa.

The NOLCOS 2007 symposium will be held at the CSIR International Convention Centre in Pretoria.

REGISTRATION

Early registration fee	EURO 450
Normal registration fee	EURO 500
Early student registration fee	EURO 340
Normal student registration fee	EURO 375

Registration includes coffee breaks, lunches, the banquet and preprints per delegate. Complete pre-payment of the registration fee is required by one author upon submission of the camera-ready copy of accepted papers.

IFAC COPYRIGHT POLICY

The material submitted for presentation at an IFAC meeting (Congress, Symposium, Conference, Workshop) must be original, not published or being considered elsewhere. All papers accepted for presentation will appear in the Preprints of the meeting and will be distributed to the participants. Papers duly presented at the Congress, Symposia and Conferences will be archived and offered for sale, in the form of Proceedings, by Elsevier Ltd, Oxford, UK. In the case of Workshops, papers duly presented will be archived by IFAC and may be offered for sale, in the form of Proceedings, by Workshop organizers. The presented papers will be further screened for possible publication in the IFAC Journals (Automatica, Control Engineering Practice, Annual Reviews in Control, Journal of Process Control and Engineering Applications of Artificial Intelligence), or in IFAC affiliated journals. All papers presented will be recorded as an IFAC Publication.

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INTERNATIONAL FEDERATION OF
AUTOMATIC CONTROL

FIRST ANNOUNCEMENT AND CALL FOR PAPERS

NOLCOS 2007

The South African Council for Automation and Computation (SACAC) is proud to announce, on behalf of the International Federation of Automatic Control (IFAC), that the

7TH IFAC SYMPOSIUM ON NONLINEAR CONTROL SYSTEMS

will be held in

**Pretoria, South Africa
22-24 August, 2007**

<http://www.nolcos2007.org.za>



PRETORIA



KRUGER PARK



CAPE TOWN

SCOPE

The IFAC NOLCOS symposium is a continuing series of symposia that were previously held in Capri (I) 1988, Bordeaux (F) 1992, Lake Tahoe (USA) 1995, Enschede (NL) 1998, Saint-Petersburg (RUS) 2001, and Stuttgart (DE) 2004.

Nonlinear control systems have gained importance in many industrial areas and research has undergone significant developments recently. There are significant challenges in various fields of nonlinear control. NOLCOS 2007 will address these challenges with its focus on latest developments in theory and application of nonlinear control systems as well as related areas of research and engineering.

Acknowledged as the major international gathering of leading experts in industry and academia in the field of nonlinear control, NOLCOS aims at strengthening contacts between academia and industry to build up new networks and cultivate existing relations. High-level speakers will present the global spectrum of nonlinear control systems, state-of-the-art applications and developing directions.

NOLCOS 2007 is also meant as a forum for young scientists from all over the world. They will be given the opportunity to introduce their research ambitions and scientific work to an audience of international experts. Tutorial workshops are planned prior to the conference with the focus on special topics in nonlinear control systems. Suggestions for workshops and special sections are encouraged and can be made on the conference website.

TOPICS

Areas (with Chair)

- **Modelling and identification of nonlinear systems (K. Schlacher):**

nonlinear modelling and control of mechanical, electrical and process systems, smart structures, aerospace and marine applications, computer algebra based methods and tools, numerical methods, bilinear systems, system structure identification, experiment design, parameter estimation

- **Nonlinear systems optimal and predictive control (L. Magni) :**

optimal control, necessary conditions, time optimal control, feasibility and stability issues, robustness, computational

efficiency, performance issues, disturbance attenuation, NMPC applications

- **Mathematical theory, stability and stabilization of nonlinear systems (W. Kang):**

Stability, i/o stability, absolute stability, input to state stability (ISS), small gain theorems, dissipativity, passivity, stabilization, Lyapunov methods, dynamical systems techniques, bifurcation and chaos, fundamental limitation of control

- **Nonlinear systems complexity and networking (S. Celikovsky):**

Computational complexity, computer network systems, computer network management, complex network, sensor network, river network, network routing, chaos control, anti-control and synchronization

- **Nonlinear systems observation and observers (H. Shim):**

Observability and observer design, filter design, state estimation and applications, adaptive observers, adaptive filters, observer and filter design by observer error linearization, Lyapunov stability methods, I/O stability methods, applications of observer design, observer based fault detection

- **Nonlinear systems feedback design methods (E. Aranda-Bricaire):**

Algebraic methods, linear algebraic methods, geometric methods, backstepping, variable structure control and sliding mode, H_∞ control, system inversion

- **Nonlinear systems feedback design problems (A. Astolfi):**

Feedback linearization, output tracking and regulation, model matching, disturbance rejection, decoupling, design problems by output/measurement feedback, trajectory tracking, robustness issues, servo systems

- **Nonlinear systems feedback design advances (Z. P. Jiang):**

Robust and adaptive control, optimal control, control of sampled data systems, discrete event and hybrid systems, quantized feedback and feedback with communication constraints, switching, invariance, stochastic control

- **Nonlinear process control and application (N. Kazantzi):**

Batch processing, chemical process, mining, mineral and metal, model based control, optimization and scheduling, process and control monitoring, Process Control Applications

- **Application and implementation of nonlinear systems and control (E. Boje):**

Components and instruments, mechatronic systems, robotics, manufacturing, power systems, automotive systems, marine systems, aerospace, transportation systems, biological and biomedical systems

IMPORTANT DATES

21 December 2006:	Deadline for draft paper submission
5 April 2007:	Authors notified of acceptance/rejection
22 May 2007:	Deadline for final paper submission
22 June 2007:	Deadline for early registration
22 August 2007:	Conference starts

PAPER SUBMISSION

Please submit your draft paper (A4 size) with 6 pages in English before 21 December, 2006. The draft paper should clearly indicate the merits of the new contributions, the relevance to the topics and areas of NOLCOS 2007 and related literature to allow a fair reviewing procedure by the International Program Committee. Only unpublished material may be submitted. Papers should be prepared in accordance with the IFAC-Elsevier style (style files are available on the conference homepage). Please structure the first page as follows: (1) title, (2) each author's name and affiliation, (3) abstract (up to 100 words), (4) up to 10 keywords. Acceptable file formats are PDF and PS. Draft and final papers should be submitted electronically via the official homepage of NOLCOS 2007.

Should you wish to suggest special sessions and workshops please don't hesitate to contact us at ipc@nolcos2007.org.za.

CONTACT INFORMATION

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