

IFAC Symposium on System Identification, SYSID 2003

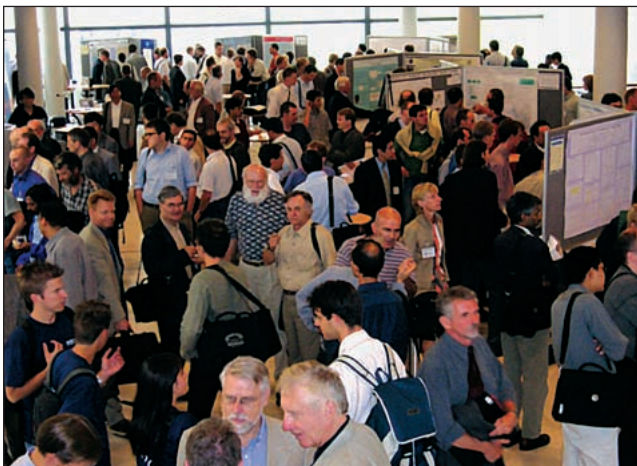
The 13th IFAC Symposium on System Identification (SYSID 2003) was held in Rotterdam, The Netherlands, 27–29 August 2003. This symposium covered all major aspects of data-based modeling, signal processing, and system identification from theory to practice. The main purpose of SYSID 2003 was to create a meeting place where researchers and engineers from several different communities could discuss issues relating to system identification. The symposium was held in the congress center “De Doelen,” which is located in the main center of Rotterdam and is among the most modern conference centers in The Netherlands. This venue turned out to be both pleasant and efficient with convenient access to hotels, restaurants, and shopping.

Background

The SYSID symposium, which is held every three years, is among the most successful symposia organized by the International Federation of Automatic Control (IFAC). Previous SYSID symposia were held in Prague (1967, 1970), The Hague (1973), Tbilisi (1976), Darmstadt (1979), Arlington, Virginia, USA (1982), York, U.K. (1985), Beijing (1988), Budapest (1991), Copenhagen (1994), Kitakyushu (1997), and Santa Barbara, California, USA (2000). SYSID 2006 will be held in Newcastle, Australia.

Participation

More than 350 delegates from 40 different countries attended the conference. More than 100 of the participants



SYSID 2003, held in Rotterdam, The Netherlands, 27–29 August 2003, allowed researchers to focus on recent developments in system identification. Daily afternoon poster sessions were filled with lively discussions about new approaches to data analysis and modeling techniques.

were Ph.D. students, showing that system identification is a vital and growing field of research.

The Program

A total of 422 papers were submitted to SYSID 2003, of which 333 were accepted after detailed review. The final program was composed of three plenary presentations, six semiplenary presentations, 232 papers in oral sessions, 82 posters, and ten software demonstrations. The large number of high-quality submissions led to a program with seven parallel sessions. Although the number of parallel sessions made it difficult to decide which sessions to attend, there was ample opportunity for everyone attending the symposium to pursue their interests. A CD-ROM with the symposium preprints was provided to each participant. IFAC publisher Elsevier Science, Ltd will distribute the official symposium proceedings.

Program Highlights

The plenary talks were designed to highlight important progress within the field of system identification. They were arranged so that talks with an industrial focus were complemented by talks in closely related disciplines.

Håkan Hjalmarsson of KTH, Sweden, presented the first plenary lecture titled “From Experiments to Closed-Loop Control.” He discussed the links between system identification and the design of low complexity controllers. One of the main points of his talk was that a guiding principle should be to model the plant as well as possible before model or controller simplification is performed. This approach ensures the best statistical accuracy. Particular attention was given to the interplay between experimental design and control performance.

Herman Van der Auweraer, manager of corporate research and technology development activities of LMS International, Belgium, presented the second plenary lecture titled “System Identification for Structural Dynamics and Vibroacoustics Design Engineering.” Dr. Auweraer showed how system identification plays a crucial role in structural dynamics and vibroacoustic system optimization. An overview of the main modal testing procedures and parameter identification methods was presented, as well as a number of important industrial applications.

Peter Bartlett, University of California at Berkeley, USA, delivered the final plenary lecture titled “Prediction Algorithms: Complexity, Concentration, and Convexity.” He reviewed two families of algorithms for estimating large-scale statistical models for prediction problems, namely, kernel methods and boosting algorithms. The focus of his

talk was on the computational and statistical properties of these algorithms.

Semiplenaries

The three plenary lectures were complemented by six semiplenary lectures:

- Stefano Soatto, University of California at Los Angeles, USA: “Snippets of Identification Theory in Computer Vision”
- Eric Walter, French National Center for Scientific Research, France: “Interval Analysis for Guaranteed Nonlinear Parameter Estimation”
- John MacGregor, McMaster University, Canada: “Data-Based Methods in Process Control”
- Dietmar Bauer, Technical University of Vienna, Austria: “Subspace Algorithms”
- Johan Schoukens, Free University of Brussels, Belgium: “Identification of Linear Systems with Nonlinear Distortions”
- Benedikt Pötscher, University of Vienna, Austria: “Some Problems in Statistical Inference Following Model Selection.”

Special Sessions

The conference included a number of special sessions on identification of nonlinear systems, signal processing, identification of communications systems, subspace methods, applications, education and training, and financial econometrics.

Panel Discussion

The IFAC Technical Board held a working session in conjunction with SYSID to address major emerging trends in control systems and automation. The results of this working session were presented in a panel presentation on the evening before the symposium.

Social Events

There were two major social events, a reception at the City Hall and the conference banquet. The mayor of Rotterdam kindly invited all participants to a reception at the City Hall on the first evening. During his remarks, the mayor acknowledged the efforts of control engineers in stabilizing the landmark Erasmusbrug bridge in Rotterdam, a beautiful suspension bridge whose cables resemble the strings of a harp. (Pictures of this bridge can be found at [http://www.xs4all.nl/~mosm/Dutch/Rotterdam/](http://www.xs4all.nl/~mosm/Dutch/Rotterdam/erasmus.html)



SYSID 2003 was organized by (from left) Bo Wahlberg, Paul Van den Hof, and Siep Weiland. The organizers arranged three plenary lectures, six semiplenary lectures, and seven parallel sessions encompassing 333 papers. The conference site in Rotterdam was a modern facility with outstanding facilities.



The Erasmusbrug bridge near Rotterdam's port is a striking view. SYSID 2003 attendees included (from left): IEEE Control Systems Magazine past Associate Editor Pertti Makila, Eugene Morelli (NASA), Seth Lacy (Air Force Research Laboratories), and Vit Babuska (General Dynamics).

erasmus.html.) A delightful conference banquet was held in the “Sint Laurenskerk,” a monumental church completed in 1525, destroyed during World War II, and rebuilt in 1947 and 1968. The symposium ended with a well-attended farewell reception.

Thanks!

Organizing a conference of this size requires the hard effort of many individuals. The conference chairs would like to take this opportunity to thank everybody involved in this mission. We would also like to thank the international program committee, all authors, plenary speakers, and session organizers for a very successful scientific program.

