PREFACE

The 14th International Conference on Mathematical Theory of Networks and Systems, MTNS'2000 was held in Perpignan, France, on June 19–23, 2000. The conference was organized by Laboratoire de Théorie des Systèmes (LTS), University of Perpignan, France, and Centre des Mathématiques et Leurs Applications (CMLA), Ecole Normale Supérieure de Cachan, France. Among the sponsors of the conference were INRIA, University of Bourges, Technical University of Zielona Góra, and European Nonlinear Control Network. The conference brought together over five hundred distinguished mathematicians, engineers and scientists working in the broad field of networks and dynamical systems. Forty eight countries were represented. Four hundred and eighty eight invited and contributed speeches were delivered. Both a CD-ROM version of the proceedings and a book of abstracts had been published for the conference. The present, special issue of the International Journal of Applied Mathematics and Computer Science contains the papers from the nine plenary lectures and the nine minicourses which were presented in MTNS'2000.

The MTNS Conference is traditionally focussed on problems and new research areas in systems, networks, and control theory. It also concerns applications and numerical solutions of problems arising from these areas. However, following systems science evolution, the range of disciplines is widened to new areas in each edition of MTNS. For the 2000 edition a significant number of papers on distributed parameter systems analysis and control, contact mechanics, and cellular automata modeling had been submitted.

The organization of MTNS'2000 had been made possible thanks to the generous support of:
- Laboratoire de Théorie des Systemes (LTS),
- Centre de Mathématiques et Leurs Applications (CMLA, Cachan),
- Université de Perpignan,
- Service de la communication et des activités culturelles de l’UP,
- Presses Universitaires de Perpignan,
- Service Informatique de l’Université de Perpignan (SIUP),
- Institut National de Recherche en Informatique et en Automatique (INRIA),
- European Non-linear Control Network,
- Région Languedoc-Roussillon
- Mairie de Perpignan,
- Ministere de l’éducation nationale.
We would like to express our sincere thanks to all the people who served on the organizing committee for their enthusiasm and dedication, and to all the contributors to MTNS'2000 for making the conference an outstanding scientific and intellectual event.

March 2001
Abdelhaq EL JAI
University of Perpignan, Perpignan, France

Michel FLIESS
Centre de Mathématiques et de Leurs Applications, Cachan, France

1. Introduction

By a well-posed linear system on any finite time interval, input function \( u \) to the input space \( U \), the state \( x(t) \) and the output \( y(t) \), we denote by \( P, Q \) its transfer function

\[
\begin{bmatrix}
  x(t) \\
  P_y y(t)
\end{bmatrix} = \Sigma
\]

\[*
\text{Department of Electrical Engineering, Eidgenoessische Technische Hochschule Zürich, Switzerland}
\]
\[**
\text{Department of Mathematics, University of California, Berkeley, California}
\]
\[***
\text{Department of Mathematics, University of California, Berkeley, California}
\]