

Guest Editorial

This special section contains seven selected contributions from the *3rd International Symposium on Methods and Models in Automation and Robotics*, held in Miedzyzdroje, Poland, 10-13 September 1996. These papers, which underwent a strict and thorough reviewing process, reflect the breadth and scope of the symposium.

Three of the seven articles develop ideas presented in the plenary talks delivered by Elliott, Hinrichsen & Son and Müller and address topics related to stability and control. The paper by Elliott surveys some recent developments in the theory and applications of active noise and vibration control. The development of a μ -analysis for nonnegative matrices, with applications to stability radii of positive systems, is the focus of the article by Hinrichsen & Son. The contribution by Müller presents a survey of results on stability and optimal control of nonlinear descriptor systems.

The remaining four articles contain original contributions on a variety of topics in control of distributed parameter systems, parameter estimation and modelling of traffic route systems. The paper by Avalos & Lasiecka considers the asymptotic behaviour of a coupled hyperbolic/parabolic system with nonlinear damping. Grabowski revisits the classical linear quadratic optimal control problem for infinite-dimensional systems using an approach based on parametric optimization. Harteneck & Stewart use pseudo-linear regression and a QR matrix decomposition to study ARMA parameter estimation. Finally, Obuchowicz, D'Souza & Banaszak present an approach to performance optimization of collision-free traffic route systems within a framework of $(\max, +)$ and $(\min, +)$ algebras.

We would like to thank the organizers of the symposium (in particular, Z. Emirsajlow, the Chairman of the Local Organizing Committee) and J. Korbicz, the Editor of *Applied Mathematics and Computer Science*, for inviting us to guest-edit this special section, the authors for submitting their contributions and the referees for their invaluable help in evaluating these articles.

University of Bath
University of Exeter
January 1998

Hartmut Logemann
Stuart Townley