
Contents

Part I Lectures

Nonlinear Inverse Problems: Theoretical Aspects and Some Industrial Applications

Heinz W. Engl, Philipp K  gler..... 3

Numerical Methods for the Simulation of Incompressible Viscous Flow: An Introduction

*Roland Glowinski, Tsorng-Whay Pan,
Lorenzo Hector Juarez V. Edward Dean*..... 49

Computational Techniques for the Verification and Control of Hybrid Systems

*Claire J. Tomlin, Ian M. Mitchell, Alexandre M. Bayen,
Meeko K. M. Oishi*..... 151

Part II Case Studies

Data Assimilation Methods for an Oceanographic Problem

Didier Auroux, Jacques Blum..... 179

Ant Colonies: a Nature Inspired Paradigm for the Mathematical Modelling of Self-Organizing Systems

Vincenzo Capasso, Daniela Morale 195

Distribution Theoretic Approach to Multi-phase Flow

Hideo Kawarada, Eiichi Baba, Mitsumasa Okada, H. Suito 217

An Ant System Heuristic for the Two-Dimensional Finite Bin Packing Problem: Preliminary Results

Marco A. Boschetti, Vittorio Maniezzo 233

**Distributed Multidisciplinary Design Optimisation
in Aeronautics Using Evolutionary Algorithms, Game Theory
and Hierarchy**

Eric J. Whitney, Luis F. Gonzalez, Jacques P eriaux 249

**Multi Objective Robust Design Optimization of Airfoils
in Transonic Field**

L. Padovan, V. Pediroda, Carlo Poloni 283